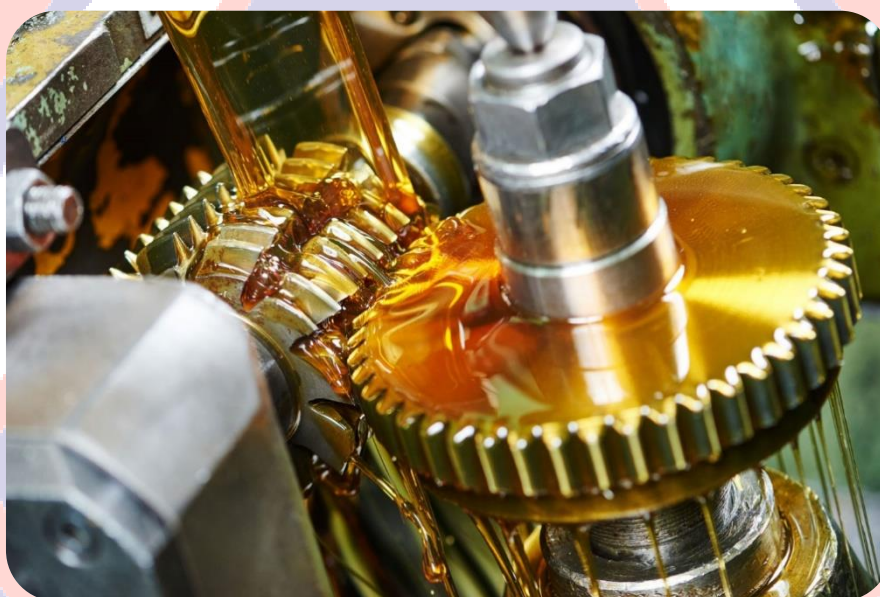




# R K PETROLEUMS

Where Quality Comes First



## HYDRAULIC OILS

# **CONTENT :-**

|                                     |                |
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| <b>ARKO Hydraulic Oil 150</b>       | <b>119-125</b> |
| <b>ARKO Hydraulic Oil HLP 32 N</b>  | <b>126-132</b> |
| <b>ARKO Hydraulic Oil HLP 46 N</b>  | <b>133-139</b> |
| <b>ARKO Hydraulic Oil HLP 68 N</b>  | <b>140-146</b> |
| <b>ARKO Hydraulic Oil HLP 100 N</b> | <b>147-153</b> |
| <b>ARKO Hydraulic Oil HLP 150 N</b> | <b>154-160</b> |

# **ARKO Circulating Oil AW 220**

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                             |
|---------------------|-----------------------------|
| Product Name        | ARKO Circulating Oil AW 220 |
| Product Description | Anti-Wear Circulating Oil   |
| Product Type        | Industrial Oil              |
| MARPOL Annex-1      | ****                        |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |                                                 |                  |
|-------------------------------------------------------|-------------------------------------------------|------------------|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health<br>Flammability<br>Reactivity<br>Special | 1<br>1<br>0<br>— |
|-------------------------------------------------------|-------------------------------------------------|------------------|

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                               |                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Protective Equipment For Firefighters | Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic LevelOf Protection For Chemical Incidents. |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment And Emergency Procedures

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For Non-Emergency Personnel          | <p>Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep DistanceFrom Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas.</p> <p>Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will PresumablyLimit The Exposure To Dangerous Concentrations.</p> <p>Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However,Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.</p>                                                                          |
| For Emergency Responders             | <p>For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also PrescribeOr Limit Actions To Be Taken.</p> <p>Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used.Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons.</p> <p>Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet,Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated.</p> <p>Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.</p> |
| <b>6.2 Environmental Precautions</b> | <p>Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The ProductWith Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations.</p> <p>In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or OtherEquipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents.</p> <p>If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other MechanicalMeans. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.</p>                                                                                                                                                                                                                      |

### 6.3 Methods And Material For Containment And Cleaning Up

|             |                                                                                                                                                                                                                                      |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small Spill | Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.                                                                                                                                           |
| Large Spill | Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do NotUse Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                               | Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>6.4 Reference To Other Sections</b>                                                                                                        | See Section 1: For Emergency Contact Information.<br>See Section 8: For Information On Appropriate Personal Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling And Storage</b>                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>                                                                                   | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b>                                                                        | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                                                                                              | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8.1 Control Parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Occupational Exposure Limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Product / Ingredient Name                                                                                                                     | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Exposure Limits Values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Recommended Monitoring Procedures                                                                                                             | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance<br>For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required.                                     |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b>                                                                              | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

|                                                    |                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                    | Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                 |
| <b>Individual Protection Measures</b>              |                                                                                                                                                                                                                                                                                                                      |
| Hygiene Measures                                   | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                       |
| Eye / Face Protection                              | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>                             |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                                    | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                                    | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection                              | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection                             | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control                     | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |
| <b>Section 9: Physical And Chemical Properties</b> |                                                                                                                                                                                                                                                                                                                      |
| Appearance                                         | Clear                                                                                                                                                                                                                                                                                                                |
| Physical State                                     | Liquid                                                                                                                                                                                                                                                                                                               |
| Colour                                             | Brownish                                                                                                                                                                                                                                                                                                             |
| Odor                                               | Petroleum Odor                                                                                                                                                                                                                                                                                                       |
| Odour Threshold                                    | Not Available                                                                                                                                                                                                                                                                                                        |
| Ph                                                 | Not Applicable                                                                                                                                                                                                                                                                                                       |
| Pour Point                                         | < -6 °C (ASTM D 97)                                                                                                                                                                                                                                                                                                  |
| Flash Point                                        | > 240 °C                                                                                                                                                                                                                                                                                                             |
| Evaporation Rate                                   | Not Available                                                                                                                                                                                                                                                                                                        |
| Flammability (Solid, Gas)                          | Not Available                                                                                                                                                                                                                                                                                                        |
| Flammability Limits In Air (Lower), % By Volume    | Not Available                                                                                                                                                                                                                                                                                                        |
| Flammability Limits In Air (Upper), % By Volume    | Not Available                                                                                                                                                                                                                                                                                                        |
| Vapour Pressure                                    | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010)                                                                                                                                                                                                                                                         |
| Density Solubility (Ies)                           | 0.88 Max At 15 °C                                                                                                                                                                                                                                                                                                    |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                   |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                        |
| Decomposition Temperature                                               | No Data                              |
| Auto-Ignition Temperature                                               | >300 °C                              |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 227 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                              |
| Oxidising Properties                                                    | No Data                              |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %                |

**Section 10: Stability And Reactivity**

|                        |                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b> | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients. |
|------------------------|--------------------------------------------------------------------------------------------|

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent.                                                                                                                                                                      |
| <b>10.4 Conditions To Avoid</b>                | Keep Away From Extreme Heat And Oxidising Agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible Materials</b>             | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |
| <b>10.6 Hazardous Decomposition Products</b>   |                                                                                                                                                                                                                                                                       |

**SECTION 11: Toxicological Information****11.1 Information On Toxicological Effects****Acute Toxicity**

| Product / Ingredient Name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat     | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 Mg/Kg | —        |

**Irritation / Corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % Are Multigene Or Genotoxic.                       |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                     |
| Reproductive Toxicity                              | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                          |
| Specific Target Organ Toxicity – Single Exposure   | Not Classified                                                                                                                       |
| Specific Target Organ Toxicity – Repeated Exposure |                                                                                                                                      |
| Aspiration Hazard                                  | Aspiration Hazard – Category 1                                                                                                       |
| Information On Likely Routes Of Exposure           | Not Available                                                                                                                        |
| <b>Potential Acute Health Effects</b>              |                                                                                                                                      |
| Eye Contact                                        | Eye Contact May Cause Redness And Transient Pain.                                                                                    |
| Inhalation                                         | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                         |
| Skin Contact                                       | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Ingestion                                          | May Be Fatal If Swallowed And Enters Airways.                                                                                        |
| <b>Potential Chronic Health Effects</b>            |                                                                                                                                      |
| General                                            | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not Be Regarded As A Carcinogen. |

|                           |                                                   |
|---------------------------|---------------------------------------------------|
| Mutagenicity              | No Known Significant Effects Or Critical Hazards. |
| Teratogenicity            |                                                   |
| Product / Ingredient Name |                                                   |
| Fertility Effects         |                                                   |

|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|----------------------------|
| Other Information Specific Hazard                                                                                                                                                                                   | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                           |                            |
| <b>Section 12: Ecological Information</b>                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| 12.1 Toxicity                                                                                                                                                                                                       | Not Expected To Be Harmful To Aquatic Organisms.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| 12.2 Persistence And Degradability                                                                                                                                                                                  | Not Inherently Biodegradable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |               |                           |                            |
| 12.3 Bioaccumulative Potential                                                                                                                                                                                      | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                           |                            |
| 12.4 Mobility In Soil                                                                                                                                                                                               | Not Considered Mobile.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |               |                           |                            |
| 12.5 Results Of PBT & Vpnb Assessment                                                                                                                                                                               | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                           |                            |
| 12.6 Other Adverse Effects                                                                                                                                                                                          | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired.                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                           |                            |
| <b>Section 13: Disposal Considerations</b>                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| Product Methods Of Disposal                                                                                                                                                                                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |               |                           |                            |
| Hazardous Waste                                                                                                                                                                                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                           |                            |
| European Waste Catalogue (EWC) Waste Code 13 03 07*                                                                                                                                                                 | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                           |                            |
| Packaging                                                                                                                                                                                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                           |                            |
| Methods Of Disposal                                                                                                                                                                                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| <b>Section 14: Transport Information</b>                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| <b>International Transport Regulations</b>                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
|                                                                                                                                                                                                                     | ADR / RID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
| 14.1 UN Number                                                                                                                                                                                                      | Not Regulated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Not Regulated | Not Regulated             | Not Regulated              |
| 14.2 UN Proper Shipping Name                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —             | —                         | —                          |
| 14.3 Transport Hazard Class(Es)                                                                                                                                                                                     | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —             | —                         | —                          |
| 14.4 Packing Group                                                                                                                                                                                                  | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —             | —                         | —                          |
| 14.5 Environmental Hazards                                                                                                                                                                                          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | No            | No                        | No                         |
| Additional Information                                                                                                                                                                                              | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | —             | —                         | —                          |
| 14.6 Special Precautions For User Oils                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| <b>Section 15: Regulatory Information</b>                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| Annex XIV – List Of Substances Subject To Authorisation Annex XIV Substances Of Very High Concern                                                                                                                   | None Of The Components Are Listed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                           |                            |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles.                                                                                 | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                           |                            |
| International Lists National Inventory                                                                                                                                                                              | Inventory Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |               |                           |                            |
| Australia                                                                                                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |               |                           |                            |

|        |                                                                  |
|--------|------------------------------------------------------------------|
| Canada | Domestic Substances List (DSL) – Yes                             |
|        | Non-Domestic Substances List (NDSL) – No                         |
| China  | Inventory Of Existing Chemical Substances In China (IECSC) – Yes |

|                             |                                                                              |
|-----------------------------|------------------------------------------------------------------------------|
| Europe                      | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes |
|                             | European List Of Notified Chemical Substances (ELINCS) – No                  |
| Japan                       | Inventory Of Existing And New Chemical Substances (ENCS) – Yes               |
| Korea                       | Existing Chemicals List (ECL) – Yes                                          |
| New Zealand                 | New Zealand Inventory – Yes                                                  |
| Philippines                 | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes      |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory – Yes                          |

\*A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)

A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S).

#### Section 16: Other Information

##### Revision Comments

##### Legend To Abbreviations

|           |                                                                                                                 |
|-----------|-----------------------------------------------------------------------------------------------------------------|
| ADR       | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID       | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code | International Maritime Dangerous Goods Code.                                                                    |
| ICAO      | International Civil Aviation Organization.                                                                      |
| IATA      | International Air Transport Association.                                                                        |
| GHS       | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP       | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA      | Self-Contained Breathing Apparatus.                                                                             |
| REACH     | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50     | Median Lethal Concentration.                                                                                    |
| LD 50     | Median Lethal Dose.                                                                                             |
| PBT       | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By. As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# **ARKO Circulating Oil AW 320**

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                             |
|---------------------|-----------------------------|
| Product Name        | ARKO Circulating Oil AW 320 |
| Product Description | Anti-Wear Circulating Oil   |
| Product Type        | Industrial Oil              |
| MARPOL Annex-1      | *****                       |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special Protective Equipment For Firefighters

Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

**Section 6: Accidental Release Measures****6.1 Personal Precautions, Protective Equipment And Emergency Procedures**

## For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations. Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

## For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken. Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons. Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated. Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

**6.2 Environmental Precautions**

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations. In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents. If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

**6.3 Methods And Material For Containment And Cleaning Up**

## Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

## Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference To Other Sections</b>                                 | See Section 1: For Emergency Contact Information.<br>See Section 8: For Information On Appropriate Personal Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control Parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational Exposure Limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                                                                                                     | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                                                                                             | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b>                                                                              | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene Measures               | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                       |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -6 °C (ASTM D 97)                                          |
| Flash Point                                     | > 250 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                   |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                        |
| Decomposition Temperature                                               | No Data                              |
| Auto-Ignition Temperature                                               | >300 °C                              |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 320 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                              |
| Oxidising Properties                                                    | No Data                              |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %                |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |

|                                              |                                                                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.4 Conditions To Avoid</b>              | Keep Away From Extreme Heat And Oxidising Agents.                                                                                                                                                |
| <b>10.5 Incompatible Materials</b>           | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of                                                                                                                             |
| <b>10.6 Hazardous Decomposition Products</b> | Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, SO <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

**SECTION 11: Toxicological Information****11.1 Information On Toxicological Effects****Acute Toxicity**

| Product / Ingredient Name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat     | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 Mg/Kg | —        |

**Irritation / Corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % Are Multigene Or Genotoxic.                       |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                     |
| Reproductive Toxicity                              | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                          |
| Specific Target Organ Toxicity – Single Exposure   | Not Classified                                                                                                                       |
| Specific Target Organ Toxicity – Repeated Exposure |                                                                                                                                      |
| Aspiration Hazard                                  | Aspiration Hazard – Category 1                                                                                                       |
| Information On Likely Routes Of Exposure           | Not Available                                                                                                                        |
| <b>Potential Acute Health Effects</b>              |                                                                                                                                      |
| Eye Contact                                        | Eye Contact May Cause Redness And Transient Pain.                                                                                    |
| Inhalation                                         | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                         |
| Skin Contact                                       | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Ingestion                                          | May Be Fatal If Swallowed And Enters Airways.                                                                                        |
| <b>Potential Chronic Health Effects</b>            |                                                                                                                                      |
| General                                            | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not Be Regarded As A Carcinogen. |

|                                           |                                                   |
|-------------------------------------------|---------------------------------------------------|
| Mutagenicity                              | No Known Significant Effects Or Critical Hazards. |
| Teratogenicity                            |                                                   |
| Product / Ingredient Name                 |                                                   |
| Fertility Effects                         |                                                   |
| Other Information Specific Hazard         | Not Available                                     |
| <b>Section 12: Ecological Information</b> |                                                   |
| <b>12.1 Toxicity</b>                      | Not Expected To Be Harmful To Aquatic Organisms.  |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.2 Persistence And Degradability</b>        | Not Inherently Biodegradable.                                                                                                              |
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                         |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                     |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                             |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired. |

### Section 13: Disposal Considerations

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International Transport Regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special Precautions For User Oils

#### 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation<br>Annex XIV Substances Of Very High Concern                                | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# ARKO Circulating Oil AW 460

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                             |
|---------------------|-----------------------------|
| Product Name        | ARKO Circulating Oil AW 460 |
| Product Description | Anti-Wear Circulating Oil   |
| Product Type        | Industrial Oil              |
| MARPOL Annex-1      | *****                       |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|            |              |   |
|------------|--------------|---|
| 4-         | Health       | 1 |
| Extrem     | Flammability | 1 |
| e3-        | Reactivity   | 0 |
| High       | Special      | — |
| 2-Moderate |              |   |
| 1-Slight   |              |   |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                               |                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters          | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
| Special Protective Equipment For Firefighters | Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive                                        |

Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment And Emergency Procedures

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For Non-Emergency Personnel          | <p>Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations.</p> <p>Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.</p>                                                                                 |
| For Emergency Responders             | <p>For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken.</p> <p>Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons.</p> <p>Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated.</p> <p>Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.</p> |
| <b>6.2 Environmental Precautions</b> | <p>Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations.</p> <p>In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents.</p> <p>If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.</p>                                                                                                                                                                                                                      |

### 6.3 Methods And Material For Containment And Cleaning Up

|             |                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small Spill | Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.                                                                                                                                                                                                                         |
| Large Spill | Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal. |

### 6.4 Reference To Other Sections

See Section 1: For Emergency Contact Information.  
See Section 8: For Information On Appropriate Personal

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Section 8: Exposure Controls / Personal Protection**

The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

**8.1 Control Parameters**

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Exposure Limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                        | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b> | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene Measures                                                 | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                                                                                                                                                                      |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -6 °C (ASTM D 97)                                          |
| Flash Point                                     | > 250 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                   |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                        |
| Decomposition Temperature                                               | No Data                              |
| Auto-Ignition Temperature                                               | >300 °C                              |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 455 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                              |
| Oxidising Properties                                                    | No Data                              |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %                |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |
| <b>10.4 Conditions To Avoid</b>                | Keep Away From Extreme Heat And Oxidising Agents.                                                |

|                                                       |                                  |                                                                                                                                                                                                                                                                      |              |          |
|-------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| 10.5 Incompatible Materials                           |                                  | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid AndUnidentified Organic And Inorganic Compounds. |              |          |
| 10.6 Hazardous Decomposition Products                 |                                  |                                                                                                                                                                                                                                                                      |              |          |
| SECTION 11: Toxicological Information                 |                                  |                                                                                                                                                                                                                                                                      |              |          |
| 11.1 Information On Toxicological Effects             |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Acute Toxicity                                        |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             | Result                           | Species                                                                                                                                                                                                                                                              | Dose         | Exposure |
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat                                                                                                                                                                                                                                                                  | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit                                                                                                                                                                                                                                                               | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat                                                                                                                                                                                                                                                                  | >15000 Mg/Kg | —        |
| Irritation / Corrosion                                |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  |                                  | No Known Significant Effects Or Critical Hazards.                                                                                                                                                                                                                    |              |          |
| Eye                                                   |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Sensation                                             |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  |                                  | No Known Significant Effects Or Critical Hazards.                                                                                                                                                                                                                    |              |          |
| Respiratory                                           |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          |                                  | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % AreMultigene Or Genotoxic.                                                                                                                                                        |              |          |
| Carcinogenicity                                       |                                  | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                                                                                                                                                     |              |          |
| Reproductive Toxicity                                 |                                  | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                                                                                                                                                          |              |          |
| Specific Target Organ Toxicity – Single Exposure      |                                  | Not Classified                                                                                                                                                                                                                                                       |              |          |
| Specific Target Organ Toxicity – Repeated Exposure    |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Aspiration Hazard                                     |                                  | Aspiration Hazard – Category 1                                                                                                                                                                                                                                       |              |          |
| Information On Likely Routes Of Exposure              |                                  | Not Available                                                                                                                                                                                                                                                        |              |          |
| Potential Acute Health Effects                        |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Eye Contact                                           |                                  | Eye Contact May Cause Redness And Transient Pain.                                                                                                                                                                                                                    |              |          |
| Inhalation                                            |                                  | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                                                                                                                                                         |              |          |
| Skin Contact                                          |                                  | No Known Significant Effects Or Critical Hazards.                                                                                                                                                                                                                    |              |          |
| Ingestion                                             |                                  | May Be Fatal If Swallowed And Enters Airways.                                                                                                                                                                                                                        |              |          |
| Potential Chronic Health Effects                      |                                  |                                                                                                                                                                                                                                                                      |              |          |
| General                                               |                                  | No Known Significant Effects Or Critical Hazards.                                                                                                                                                                                                                    |              |          |
| Carcinogenicity                                       |                                  | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not BeRegarded As A Carcinogen.                                                                                                                                  |              |          |
|                                                       |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          |                                  | No Known Significant Effects Or Critical Hazards.                                                                                                                                                                                                                    |              |          |
| Teratogenicity                                        |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Fertility Effects                                     |                                  | Not Available                                                                                                                                                                                                                                                        |              |          |
| Other Information Specific Hazard                     |                                  |                                                                                                                                                                                                                                                                      |              |          |
| Section 12: Ecological Information                    |                                  |                                                                                                                                                                                                                                                                      |              |          |
| 12.1 Toxicity                                         |                                  | Not Expected To Be Harmful To Aquatic Organisms.                                                                                                                                                                                                                     |              |          |
| 12.2 Persistence And Degradability                    |                                  | Not Inherently Biodegradable.                                                                                                                                                                                                                                        |              |          |

|                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------|----------------------------|
| 12.3 Bioaccumulative Potential                                                                                                                                                                                      | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                           |                            |
| 12.4 Mobility In Soil                                                                                                                                                                                               | Not Considered Mobile.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                           |                            |
| 12.5 Results Of PBT & Vpvh Assessment                                                                                                                                                                               | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| 12.6 Other Adverse Effects                                                                                                                                                                                          | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms.Oxygen Transfer Could Also Be Impaired.                                                                                                                                                                                                                                                                                                                                                                                                                                      |               |                           |                            |
| Section 13: Disposal Considerations                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| Product Methods Of Disposal                                                                                                                                                                                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. ContaminatedOr Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |               |                           |                            |
| Hazardous Waste                                                                                                                                                                                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |               |                           |                            |
| European Waste Catalogue (EWC) Waste Code 13 03 07*                                                                                                                                                                 | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |                           |                            |
| Packaging                                                                                                                                                                                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |                           |                            |
| Methods Of Disposal                                                                                                                                                                                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should BeRecycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| Section 14: Transport Information                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| International Transport Regulations                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
|                                                                                                                                                                                                                     | ADR / RID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
| 14.1 UN Number                                                                                                                                                                                                      | Not Regulated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Not Regulated | Not Regulated             | Not Regulated              |
| 14.2 UN Proper Shipping Name                                                                                                                                                                                        | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | —             | —                         | —                          |
| 14.3 Transport Hazard Class(Es)                                                                                                                                                                                     | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | —             | —                         | —                          |
| 14.4 Packing Group                                                                                                                                                                                                  | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | —             | —                         | —                          |
| 14.5 Environmental Hazards                                                                                                                                                                                          | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | No            | No                        | No                         |
| Additional Information                                                                                                                                                                                              | —                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | —             | —                         | —                          |
| 14.6 Special Precautions For User Oils                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| Section 15: Regulatory Information                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |                           |                            |
| Annex XIV – List Of Substances Subject To AuthorisationAnnex XIV Substances Of Very High Concern                                                                                                                    | None Of The Components Are Listed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |               |                           |                            |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles.                                                                                 | Not Applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| International Lists National Inventory                                                                                                                                                                              | Inventory Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |               |                           |                            |
| Australia                                                                                                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |               |                           |                            |
| Canada                                                                                                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                           |                            |
| China                                                                                                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |               |                           |                            |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# **ARKO Hydraulic Oil AW 22**

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                          |
|---------------------|--------------------------|
| Product Name        | ARKO Hydraulic Oil AW 22 |
| Product Description | Anti-Wear Hydraulic Oil  |
| Product Type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|            |              |   |
|------------|--------------|---|
| 4-Extrem   | Health       | 1 |
| e3-High    | Flammability | 1 |
| 2-Moderate | Reactivity   | 0 |
| 1-Slight   | Special      | — |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                               |                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters          | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
| Special Protective Equipment For Firefighters | Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive                                        |

Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment And Emergency Procedures

For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations. Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken. Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons. Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated. Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

### 6.2 Environmental Precautions

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations. In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents. If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

### 6.3 Methods And Material For Containment And Cleaning Up

Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

### 6.4 Reference To Other Sections

See Section 1: For Emergency Contact Information.  
See Section 8: For Information On Appropriate Personal

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Section 8: Exposure Controls / Personal Protection**

The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

**8.1 Control Parameters**

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Exposure Limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product / Ingredient Name                                        | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Exposure Limits Values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Recommended Monitoring Procedures                                | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance<br>For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b> | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Individual Protection Measures</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hygiene Measures                                                 | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                                                                                                                                                                  |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -9 °C (ASTM D 97)                                          |
| Flash Point                                     | > 180 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                  |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                       |
| Decomposition Temperature                                               | No Data                             |
| Auto-Ignition Temperature                                               | >300 °C                             |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 22 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                             |
| Oxidising Properties                                                    | No Data                             |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %               |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |
| <b>10.4 Conditions To Avoid</b>                | Keep Away From Extreme Heat And Oxidising Agents.                                                |

|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| 10.5 Incompatible Materials                           |                                                                                                                                     | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid AndUnidentified Organic And Inorganic Compounds. |              |          |
| 10.6 Hazardous Decomposition Products                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| SECTION 11: Toxicological Information                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 11.1 Information On Toxicological Effects             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Acute Toxicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             | Result                                                                                                                              | Species                                                                                                                                                                                                                                                              | Dose         | Exposure |
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists                                                                                                    | Rat                                                                                                                                                                                                                                                                  | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                                                                                                                        | Rabbit                                                                                                                                                                                                                                                               | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                                                                                                                          | Rat                                                                                                                                                                                                                                                                  | >15000 Mg/Kg | —        |
| Irritation / Corrosion                                |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Eye                                                   |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Sensation                                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % AreMultigene Or Genotoxic.                       |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                    |                                                                                                                                                                                                                                                                      |              |          |
| Reproductive Toxicity                                 | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                         |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Single Exposure      | Not Classified                                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Repeated Exposure    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Aspiration Hazard                                     | Aspiration Hazard – Category 1                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Information On Likely Routes Of Exposure              | Not Available                                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Acute Health Effects                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Eye Contact                                           | Eye Contact May Cause Redness And Transient Pain.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Inhalation                                            | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                        |                                                                                                                                                                                                                                                                      |              |          |
| Skin Contact                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Ingestion                                             | May Be Fatal If Swallowed And Enters Airways.                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Chronic Health Effects                      |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| General                                               | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not BeRegarded As A Carcinogen. |                                                                                                                                                                                                                                                                      |              |          |
|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Teratogenicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Fertility Effects                                     | Not Available                                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Other Information Specific Hazard                     |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Section 12: Ecological Information                    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 12.1 Toxicity                                         | Not Expected To Be Harmful To Aquatic Organisms.                                                                                    |                                                                                                                                                                                                                                                                      |              |          |
| 12.2 Persistence And Degradability                    | Not Inherently Biodegradable.                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |

|                                                  |                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                        |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                    |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                            |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms.Oxygen Transfer Could Also Be Impaired. |

**Section 13: Disposal Considerations**

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International Transport Regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special Precautions For User Oils****14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code****Section 15: Regulatory Information****15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation<br>Annex XIV Substances Of Very High Concern                                | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |
| Europe                                                                                                                              | European Inventory Of Existing Commercial Chemical Substances (EINECS) –         |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                        | Yes                                                                                                             |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# **ARKO Hydraulic Oil AW 32**

|                                                           |                                                                                                                                                                                                                                                                      |   |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Section 1: Identification Of The Substance / Mixture      |                                                                                                                                                                                                                                                                      |   |
| 1.1 Product Identifier                                    |                                                                                                                                                                                                                                                                      |   |
| Product Name                                              | ARKO Hydraulic Oil AW 32                                                                                                                                                                                                                                             |   |
| Product Description                                       | Anti-Wear Hydraulic Oil                                                                                                                                                                                                                                              |   |
| Product Type                                              | Industrial Oil                                                                                                                                                                                                                                                       |   |
| MARPOL Annex-1                                            | ****                                                                                                                                                                                                                                                                 |   |
| 1.2 Identified Uses                                       |                                                                                                                                                                                                                                                                      |   |
| Distribution Of Substance                                 | Industrial                                                                                                                                                                                                                                                           |   |
| Formulation & (Re)Packing Of Substance & Mixtures         | Industrial                                                                                                                                                                                                                                                           |   |
| Manufacture Of Substance                                  | Industrial                                                                                                                                                                                                                                                           |   |
| Functional Fluids                                         | Industrial                                                                                                                                                                                                                                                           |   |
| Section 2: Hazard Identification                          |                                                                                                                                                                                                                                                                      |   |
| 4-Extrem<br>e3-High<br>2-Moderate<br>1-Slight             | Health                                                                                                                                                                                                                                                               | 1 |
|                                                           | Flammability                                                                                                                                                                                                                                                         | 1 |
|                                                           | Reactivity                                                                                                                                                                                                                                                           | 0 |
|                                                           | Special                                                                                                                                                                                                                                                              | — |
| Section 3: Compostion / Information On Ingredients        |                                                                                                                                                                                                                                                                      |   |
| Product / Ingredient Name                                 | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons.                                                                                                                                                       |   |
| Section 4: First Aid Measures                             |                                                                                                                                                                                                                                                                      |   |
| Inhalation Exposure                                       | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                                                                                                                                   |   |
| Skin Contact                                              | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water.If Irritation Occurs, Call A Physician.                                                                                                                             |   |
| Swallowing Or Other                                       | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested.Get Medical Advice.                                                                                                                                                |   |
| Eye Contact                                               | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                                                                                                                                    |   |
| Protection First-Aiders                                   | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area IsAvailable Before Entry Into Confined Spaces.                                                                                                                 |   |
| Section 5: Fire Fighting Measures                         |                                                                                                                                                                                                                                                                      |   |
| 5.1 Extinguishing Media                                   |                                                                                                                                                                                                                                                                      |   |
| Unsuitable Extinguishing Media                            | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On TheBurning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface.                                                                                   |   |
| 5.2 Special Hazards Arising From The Substance Or Mixture |                                                                                                                                                                                                                                                                      |   |
| Hazards From The Substance Or Mixture                     | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A HighlyFlammable Vapour Cloud.                                                                                                                                           |   |
| Hazardous Thermal Decomposition Products                  | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid AndUnidentified Organic And Inorganic Compounds. |   |
| 5.3 Advice For Firefighters                               |                                                                                                                                                                                                                                                                      |   |
| Special Precautions For Firefighters                      | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. NoAction Shall Be Taken Involving Any Personal Risk Or Without Suitable Training.                                                                           |   |

## Special Protective Equipment For Firefighters

Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic LevelOf Protection For Chemical Incidents.

**Section 6: Accidental Release Measures****6.1 Personal Precautions, Protective Equipment And Emergency Procedures**

## For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations. Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

## For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken. Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons. Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated. Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

**6.2 Environmental Precautions**

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations. In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents. If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

**6.3 Methods And Material For Containment And Cleaning Up**

## Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

## Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference To Other Sections</b>                                 | See Section 1: For Emergency Contact Information.<br>See Section 8: For Information On Appropriate Personal Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control Parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational Exposure Limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                                                                                                     | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                                                                                             | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b>                                                                              | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene Measures               | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                       |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -9 °C (ASTM D 97)                                          |
| Flash Point                                     | > 195 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                  |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                       |
| Decomposition Temperature                                               | No Data                             |
| Auto-Ignition Temperature                                               | >300 °C                             |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 32 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                             |
| Oxidising Properties                                                    | No Data                             |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %               |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |

|                                              |                                                                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.4 Conditions To Avoid</b>              | Keep Away From Extreme Heat And Oxidising Agents.                                                                                                                                                |
| <b>10.5 Incompatible Materials</b>           | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of                                                                                                                             |
| <b>10.6 Hazardous Decomposition Products</b> | Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, SO <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

**SECTION 11: Toxicological Information****11.1 Information On Toxicological Effects****Acute Toxicity**

| Product / Ingredient Name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat     | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 Mg/Kg | —        |

**Irritation / Corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % Are Multigene Or Genotoxic.                       |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                     |
| Reproductive Toxicity                              | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                          |
| Specific Target Organ Toxicity – Single Exposure   | Not Classified                                                                                                                       |
| Specific Target Organ Toxicity – Repeated Exposure |                                                                                                                                      |
| Aspiration Hazard                                  | Aspiration Hazard – Category 1                                                                                                       |
| Information On Likely Routes Of Exposure           | Not Available                                                                                                                        |
| <b>Potential Acute Health Effects</b>              |                                                                                                                                      |
| Eye Contact                                        | Eye Contact May Cause Redness And Transient Pain.                                                                                    |
| Inhalation                                         | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                         |
| Skin Contact                                       | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Ingestion                                          | May Be Fatal If Swallowed And Enters Airways.                                                                                        |
| <b>Potential Chronic Health Effects</b>            |                                                                                                                                      |
| General                                            | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not Be Regarded As A Carcinogen. |

|                                           |                                                   |
|-------------------------------------------|---------------------------------------------------|
| Mutagenicity                              | No Known Significant Effects Or Critical Hazards. |
| Teratogenicity                            |                                                   |
| Product / Ingredient Name                 |                                                   |
| Fertility Effects                         |                                                   |
| Other Information Specific Hazard         | Not Available                                     |
| <b>Section 12: Ecological Information</b> |                                                   |
| <b>12.1 Toxicity</b>                      | Not Expected To Be Harmful To Aquatic Organisms.  |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.2 Persistence And Degradability</b>        | Not Inherently Biodegradable.                                                                                                              |
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                         |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                     |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                             |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired. |

### Section 13: Disposal Considerations

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International Transport Regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(ES)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special Precautions For User Oils

#### 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation Annex XIV Substances Of Very High Concern                                   | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# ARKO Hydraulic Oil AW 46

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                          |
|---------------------|--------------------------|
| Product Name        | ARKO Hydraulic Oil AW 46 |
| Product Description | Anti-Wear Hydraulic Oil  |
| Product Type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                               |                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters          | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
| Special Protective Equipment For Firefighters | Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive                                        |

Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment And Emergency Procedures

For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage.  
Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The  
Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas.  
Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations.  
Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken.  
Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate.  
Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons.  
Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated.  
Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

### 6.2 Environmental Precautions

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations.  
In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents.  
If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

### 6.3 Methods And Material For Containment And Cleaning Up

Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

### 6.4 Reference To Other Sections

See Section 1: For Emergency Contact Information.  
See Section 8: For Information On Appropriate Personal

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Section 8: Exposure Controls / Personal Protection**

The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

**8.1 Control Parameters**

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Exposure Limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                        | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b> | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene Measures                                                 | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                                                                                                                                                                  |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -6 °C (ASTM D 97)                                          |
| Flash Point                                     | > 210 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                  |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                       |
| Decomposition Temperature                                               | No Data                             |
| Auto-Ignition Temperature                                               | >300 °C                             |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 46 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                             |
| Oxidising Properties                                                    | No Data                             |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %               |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |
| <b>10.4 Conditions To Avoid</b>                | Keep Away From Extreme Heat And Oxidising Agents.                                                |

|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| 10.5 Incompatible Materials                           |                                                                                                                                     | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid AndUnidentified Organic And Inorganic Compounds. |              |          |
| 10.6 Hazardous Decomposition Products                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| SECTION 11: Toxicological Information                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 11.1 Information On Toxicological Effects             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Acute Toxicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             | Result                                                                                                                              | Species                                                                                                                                                                                                                                                              | Dose         | Exposure |
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists                                                                                                    | Rat                                                                                                                                                                                                                                                                  | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                                                                                                                        | Rabbit                                                                                                                                                                                                                                                               | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                                                                                                                          | Rat                                                                                                                                                                                                                                                                  | >15000 Mg/Kg | —        |
| Irritation / Corrosion                                |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Eye                                                   |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Sensation                                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % AreMultigene Or Genotoxic.                       |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                    |                                                                                                                                                                                                                                                                      |              |          |
| Reproductive Toxicity                                 | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                         |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Single Exposure      | Not Classified                                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Repeated Exposure    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Aspiration Hazard                                     | Aspiration Hazard – Category 1                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Information On Likely Routes Of Exposure              | Not Available                                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Acute Health Effects                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Eye Contact                                           | Eye Contact May Cause Redness And Transient Pain.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Inhalation                                            | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                        |                                                                                                                                                                                                                                                                      |              |          |
| Skin Contact                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Ingestion                                             | May Be Fatal If Swallowed And Enters Airways.                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Chronic Health Effects                      |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| General                                               | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not BeRegarded As A Carcinogen. |                                                                                                                                                                                                                                                                      |              |          |
|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Teratogenicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Fertility Effects                                     | Not Available                                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Other Information Specific Hazard                     |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Section 12: Ecological Information                    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 12.1 Toxicity                                         | Not Expected To Be Harmful To Aquatic Organisms.                                                                                    |                                                                                                                                                                                                                                                                      |              |          |
| 12.2 Persistence And Degradability                    | Not Inherently Biodegradable.                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |

|                                                  |                                                                                                                                           |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                        |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                    |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                            |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms.Oxygen Transfer Could Also Be Impaired. |

**Section 13: Disposal Considerations**

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International Transport Regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special Precautions For User Oils****14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code****Section 15: Regulatory Information****15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation<br>Annex XIV Substances Of Very High Concern                                | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |
| Europe                                                                                                                              | European Inventory Of Existing Commercial Chemical Substances (EINECS) –         |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                        | Yes                                                                                                             |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# **ARKO Hydraulic Oil AW 57**

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                          |
|---------------------|--------------------------|
| Product Name        | ARKO Hydraulic Oil AW 57 |
| Product Description | Anti-Wear Hydraulic Oil  |
| Product Type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|            |              |   |
|------------|--------------|---|
| 4          | Health       | 1 |
| Extrem     | Flammability | 1 |
| e3-        | Reactivity   | 0 |
| High       | Special      | — |
| 2-Moderate |              |   |
| 1-Slight   |              |   |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special Protective Equipment For Firefighters

Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

**Section 6: Accidental Release Measures****6.1 Personal Precautions, Protective Equipment And Emergency Procedures**

## For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations. Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

## For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken. Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons. Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated. Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

**6.2 Environmental Precautions**

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations. In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents. If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

**6.3 Methods And Material For Containment And Cleaning Up**

## Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

## Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference To Other Sections</b>                                 | See Section 1: For Emergency Contact Information.<br>See Section 8: For Information On Appropriate Personal Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control Parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational Exposure Limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                                                                                                     | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                                                                                             | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b>                                                                              | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene Measures               | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                       |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Yellow                                                       |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -3 °C (ASTM D 97)                                          |
| Flash Point                                     | > 215 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                  |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                       |
| Decomposition Temperature                                               | No Data                             |
| Auto-Ignition Temperature                                               | >300 °C                             |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 57 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                             |
| Oxidising Properties                                                    | No Data                             |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %               |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |

|                                              |                                                                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.4 Conditions To Avoid</b>              | Keep Away From Extreme Heat And Oxidising Agents.                                                                                                                                                |
| <b>10.5 Incompatible Materials</b>           | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of                                                                                                                             |
| <b>10.6 Hazardous Decomposition Products</b> | Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, SO <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

**SECTION 11: Toxicological Information****11.1 Information On Toxicological Effects****Acute Toxicity**

| Product / Ingredient Name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat     | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 Mg/Kg | —        |

**Irritation / Corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % Are Multigene Or Genotoxic.                       |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                     |
| Reproductive Toxicity                              | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                          |
| Specific Target Organ Toxicity – Single Exposure   | Not Classified                                                                                                                       |
| Specific Target Organ Toxicity – Repeated Exposure |                                                                                                                                      |
| Aspiration Hazard                                  | Aspiration Hazard – Category 1                                                                                                       |
| Information On Likely Routes Of Exposure           | Not Available                                                                                                                        |
| <b>Potential Acute Health Effects</b>              |                                                                                                                                      |
| Eye Contact                                        | Eye Contact May Cause Redness And Transient Pain.                                                                                    |
| Inhalation                                         | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                         |
| Skin Contact                                       | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Ingestion                                          | May Be Fatal If Swallowed And Enters Airways.                                                                                        |
| <b>Potential Chronic Health Effects</b>            |                                                                                                                                      |
| General                                            | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not Be Regarded As A Carcinogen. |

|                                           |                                                   |
|-------------------------------------------|---------------------------------------------------|
| Mutagenicity                              | No Known Significant Effects Or Critical Hazards. |
| Teratogenicity                            |                                                   |
| Product / Ingredient Name                 |                                                   |
| Fertility Effects                         |                                                   |
| Other Information Specific Hazard         | Not Available                                     |
| <b>Section 12: Ecological Information</b> |                                                   |
| <b>12.1 Toxicity</b>                      | Not Expected To Be Harmful To Aquatic Organisms.  |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.2 Persistence And Degradability</b>        | Not Inherently Biodegradable.                                                                                                              |
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                         |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                     |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                             |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired. |

### Section 13: Disposal Considerations

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International Transport Regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special Precautions For User Oils

#### 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation Annex XIV Substances Of Very High Concern                                   | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# ARKO Hydraulic Oil AW 68

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                          |
|---------------------|--------------------------|
| Product Name        | ARKO Hydraulic Oil AW 68 |
| Product Description | Anti-Wear Hydraulic Oil  |
| Product Type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                               |                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters          | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
| Special Protective Equipment For Firefighters | Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive                                        |

Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment And Emergency Procedures

|                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For Non-Emergency Personnel          | <p>Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations.</p> <p>Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.</p>                                                                                 |
| For Emergency Responders             | <p>For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken.</p> <p>Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons.</p> <p>Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated.</p> <p>Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.</p> |
| <b>6.2 Environmental Precautions</b> | <p>Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations.</p> <p>In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents.</p> <p>If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.</p>                                                                                                                                                                                                                      |

### 6.3 Methods And Material For Containment And Cleaning Up

|             |                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small Spill | Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.                                                                                                                                                                                                                         |
| Large Spill | Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal. |

### 6.4 Reference To Other Sections

See Section 1: For Emergency Contact Information.  
See Section 8: For Information On Appropriate Personal

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                        | Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

**Section 8: Exposure Controls / Personal Protection**

The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

**8.1 Control Parameters**

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational Exposure Limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Product / Ingredient Name                                        | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Exposure Limits Values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Recommended Monitoring Procedures                                | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance<br>For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b> | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Individual Protection Measures</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hygiene Measures                                                 | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                                                                                                                                                                      |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Yellow                                                       |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -6 °C (ASTM D 97)                                          |
| Flash Point                                     | > 220 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                  |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                       |
| Decomposition Temperature                                               | No Data                             |
| Auto-Ignition Temperature                                               | >300 °C                             |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 68 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                             |
| Oxidising Properties                                                    | No Data                             |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %               |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |
| <b>10.4 Conditions To Avoid</b>                | Keep Away From Extreme Heat And Oxidising Agents.                                                |

|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|
| 10.5 Incompatible Materials                           |                                                                                                                                     | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid AndUnidentified Organic And Inorganic Compounds. |              |          |
| 10.6 Hazardous Decomposition Products                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| SECTION 11: Toxicological Information                 |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 11.1 Information On Toxicological Effects             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Acute Toxicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             | Result                                                                                                                              | Species                                                                                                                                                                                                                                                              | Dose         | Exposure |
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists                                                                                                    | Rat                                                                                                                                                                                                                                                                  | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                                                                                                                        | Rabbit                                                                                                                                                                                                                                                               | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                                                                                                                          | Rat                                                                                                                                                                                                                                                                  | >15000 Mg/Kg | —        |
| Irritation / Corrosion                                |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Eye                                                   |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Sensation                                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Skin                                                  | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Respiratory                                           |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % AreMultigene Or Genotoxic.                       |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                    |                                                                                                                                                                                                                                                                      |              |          |
| Reproductive Toxicity                                 | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                         |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Single Exposure      | Not Classified                                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Specific Target Organ Toxicity – Repeated Exposure    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Aspiration Hazard                                     | Aspiration Hazard – Category 1                                                                                                      |                                                                                                                                                                                                                                                                      |              |          |
| Information On Likely Routes Of Exposure              | Not Available                                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Acute Health Effects                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Eye Contact                                           | Eye Contact May Cause Redness And Transient Pain.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Inhalation                                            | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                        |                                                                                                                                                                                                                                                                      |              |          |
| Skin Contact                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Ingestion                                             | May Be Fatal If Swallowed And Enters Airways.                                                                                       |                                                                                                                                                                                                                                                                      |              |          |
| Potential Chronic Health Effects                      |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| General                                               | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Carcinogenicity                                       | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not BeRegarded As A Carcinogen. |                                                                                                                                                                                                                                                                      |              |          |
|                                                       |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Mutagenicity                                          | No Known Significant Effects Or Critical Hazards.                                                                                   |                                                                                                                                                                                                                                                                      |              |          |
| Teratogenicity                                        |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Product / Ingredient Name                             |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Fertility Effects                                     |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Other Information Specific Hazard                     |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| Section 12: Ecological Information                    |                                                                                                                                     |                                                                                                                                                                                                                                                                      |              |          |
| 12.1 Toxicity                                         | Not Expected To Be Harmful To Aquatic Organisms.                                                                                    |                                                                                                                                                                                                                                                                      |              |          |
| 12.2 Persistence And Degradability                    | Not Inherently Biodegradable.                                                                                                       |                                                                                                                                                                                                                                                                      |              |          |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                         |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                     |
| <b>12.5 Results Of PBT &amp; Vpvh Assessment</b> | Not Applicable                                                                                                                             |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired. |

**Section 13: Disposal Considerations**

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International Transport Regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special Precautions For User Oils****14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code****Section 15: Regulatory Information****15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation Annex XIV Substances Of Very High Concern                                   | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) No 1907/2006, Annex II As Amended By Commission Regulation (EU) 2015/830

Disclaimer: Information Contained In This Material Data Sheet Is Believed To Be Reliable, But No Representation, Guarantee Or Warranties Of Any Kind Made As To Its Accuracy, Suitability For A Particular Application Or Results To Be Obtained From Them. It Is Up To The Manufacturer / Seller To Ensure That The Information Content In The Material Data Sheet Is Relevant To The Product Manufactured / Handled Or Sold By, As The Case May Be. R K PETROLEUMS Makes No Warranties Expressed Or Implied In Respect Of The Adequacy Of This Document For Any Particular Purpose.

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# **ARKO Hydraulic Oil AW 100**

## Section 1: Identification Of The Substance / Mixture

### 1.1 Product Identifier

|                     |                           |
|---------------------|---------------------------|
| Product Name        | ARKO Hydraulic Oil AW 100 |
| Product Description | Anti-Wear Hydraulic Oil   |
| Product Type        | Industrial Oil            |
| MARPOL Annex-1      | *****                     |

### 1.2 Identified Uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution Of Substance                         | Industrial |
| Formulation & (Re)Packing Of Substance & Mixtures | Industrial |
| Manufacture Of Substance                          | Industrial |
| Functional Fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information On Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient Name | CAS No.: Not Applicable For Blended Product.<br>Distillates (Petroleum) Mixture Of Hydro-Treated Hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation Exposure     | Remove To Fresh Air & Provide Oxygen, If Breathing Is Difficult. Contact Physician                                                                    |
| Skin Contact            | Remove Contaminated Clothing. Flush Skin With Water. Wash Skin Thoroughly With Mild Soap & Water. If Irritation Occurs, Call A Physician.             |
| Swallowing Or Other     | Do Not Induce Vomiting. In General No Treatment Is Necessary Unless Large Quantities Are Ingested. Get Medical Advice.                                |
| Eye Contact             | Rinse Continuously With Water For Several Minutes. Get Medical Attention, If Irritation Persists.                                                     |
| Protection First-Aiders | Disconnecting Electrical Supply. Ensure Adequate Ventilation And Check That A Safe And Breathing Area Is Available Before Entry Into Confined Spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing Media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable Extinguishing Media | Use Dry Powder, Foam, Carbon Dioxide. Do Not Use Direct Water And Wet Chemicals, Or Water On The Burning Product. They May Spread The Fire. Use Foam Simultaneously On The Surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special Hazards Arising From The Substance Or Mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards From The Substance Or Mixture    | Flammable Liquids In Pressurised Containers May Rupture And When Exposed To Heat, Creating A Highly Flammable Vapour Cloud.                                                                                                                                           |
| Hazardous Thermal Decomposition Products | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, So <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

### 5.3 Advice For Firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special Precautions For Firefighters | Promptly Isolate The Scene By Removing All Persons From The Vicinity Of The Incident If There Is A Fire. No Action Shall Be Taken Involving Any Personal Risk Or Without Suitable Training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special Protective Equipment For Firefighters

Firefighters Should Wear Appropriate Protective Equipment And Self-Contained Breathing Apparatus (SCBA) With A Full Face- Piece Operated In Positive Pressure Mode. Clothing For Firefighters (Including Helmets, Protective Boots And Gloves) Conforming To European Standard EN 469 Will Provide A Basic Level Of Protection For Chemical Incidents.

**Section 6: Accidental Release Measures****6.1 Personal Precautions, Protective Equipment And Emergency Procedures**

## For Non-Emergency Personnel

Keep Non-Involved Personnel Away From The Area Of Spillage. Alert Emergency Personnel. Except In Case Of Small Spillages, The Feasibility Of Any Actions Should Always Be Assessed And Advised, If Possible, By A Trained, Competent Person In Charge Of Managing The Emergency. Stop Leak If Safe To Do So. Avoid Direct Contact With The Product. Stay Upwind / Keep Distance From Source. In Case Of Large Spillages, Alert Occupants In Downwind Areas. Eliminate All Ignition Sources If Safe To Do So. Spillages Of Limited Amounts Of Product, Especially In The Open Air When Vapours Will Be Usually Quickly Dispersed, Are Dynamic Situations, Which Will Presumably Limit The Exposure To Dangerous Concentrations. Note : Recommended Measures Are Based On The Most Likely Spillage Scenarios For This Material; However, Local Conditions (Wind, Air Temperature, Wave / Current Direction And Speed) May Significantly Influence The Choice Of Appropriate Actions.

## For Emergency Responders

For This Reason, Local Experts Should Be Consulted When Necessary. Local Regulations May Also Prescribe Or Limit Actions To Be Taken. Small Spillages: Normal Antistatic Working Clothes Are Usually Adequate. Large Spillages: Full Body Suit Of Chemically Resistant And Thermal Resistant Material Should Be Used. Work Gloves Providing Adequate Chemical Resistance, Specifically To Aromatic Hydrocarbons. Note: Gloves Made Of PVA Are Not Water-Resistant, And Are Not Suitable For Emergency Use. Safety Helmet, Antistatic Non-Skid Safety Shoes Or Boots. Goggles And / Or Face Shield, If Splashes Or Contact With Eyes Is Possible Or Anticipated. Respiratory Protection : A Half Or Full-Face Respirator With Filter(S) For Organic Vapours (And When Applicable For H<sub>2</sub>S) A Self Contained Breathing Apparatus (SCBA) Can Be Used According To The Extent Of Spill And Predictable Amount Of Exposure. If The Situation Cannot Be Completely Assessed, Or If An Oxygen Deficiency Is Possible, Only SCBA's Should Be Used.

**6.2 Environmental Precautions**

Prevent Product From Entering Sewers, Rivers Or Other Bodies Of Water. If Necessary Dike The Product With Dry Earth, Sand Or Similar Non-Combustible Materials. In Case Of Soil Contamination, Remove Contaminated Soil And Treat In Accordance With Local Regulations. In Case Of Small Spillages In Closed Waters (I.E. Ports), Contain Product With Floating Barriers Or Other Equipment. Collect Spilled Product By Absorbing With Specific Floating Absorbents. If Possible, Large Spillages In Open Waters Should Be Contained With Floating Barriers Or Other Mechanical Means. If This Is Not Possible, Control The Spreading Of The Spillage, And Collect The Product By Skimming Or Other Suitable Mechanical Means. The Use Of Dispersants Should Be Advised By An Expert, And, If Required, Approved By Local Authorities.

**6.3 Methods And Material For Containment And Cleaning Up**

## Small Spill

Stop Leak If Without Risk. Absorb Spilled Product With Suitable Non-Combustible Materials.

## Large Spill

Large Spillages May Be Cautiously Covered With Foam, If Available, To Limit Vapour Cloud Formation. Do Not Use Water Jet. When Inside Buildings Or Confined Spaces, Ensure Adequate Ventilation. Transfer Collected Product And Other Contaminated Materials To Suitable Containers For Recovery Or Safe Disposal.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference To Other Sections</b>                                 | See Section 1: For Emergency Contact Information.<br>See Section 8: For Information On Appropriate Personal Protective Equipment. See Section 13: For Additional Waste Treatment Information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling And Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice On General Information – Hygiene, Storage</b>            | Obtain Special Instructions Before Use. Keep Away From Heat / Sparks / Open Flames/Hot Surfaces. No Smoking. Use And Store Only Outdoors Or In A Well-Ventilated Area. Hazard Of Slipping On Spilt Product. Avoid Release To The Environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions For Safe Storage Including Any Incompatibilities</b> | Storage Area Layout, Tank Design, Equipment And Operating Procedures Must Comply With The Relevant Regional, National Or Local Legislation. Storage Installations Should Be Designed With Adequate Bunds In Case Of Leaks Or Spills. Cleaning, Inspection And Maintenance Of Internal Structure Of Storage Tanks Must Be Done Only By Properly Equipped And Qualified Personnel As Defined By National, Local Or Company Regulations. Store Separately From Oxidising Agents.<br>Keep Only In The Original Container Or In A Suitable Container For This Kind Of Product. Keep Container Tightly Closed And Sealed Until Ready For Use. Do Not Store In Unlabelled Containers. Containers That Have Been Opened Must Be Carefully Resealed And Kept Upright To Prevent Leakage. Empty Containers May Contain Harmful, Flammable / Combustible Or Explosive Residue Or Vapours. Do Not Cut, Grind, Drill, Weld, Reuse Or Dispose Of Containers Unless Adequate Precautions Are Taken Against These Hazards.<br>Protect From Sunlight. |
| <b>7.3 Specific End Use(S) – Recommendations</b>                       | Not Available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control Parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational Exposure Limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient Name                                                                                                                     | Distillates, Mixture Of Hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure Limits Values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume [Air Contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 Mg/M <sup>3</sup> 8 Hours. Form: Mist And Fume<br>STEL: 3 Mg/M <sup>3</sup> 15 Minutes. Form: Mist And Fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Recommended Monitoring Procedures                                                                                                             | If This Product Contains Ingredients With Exposure Limits, Personal, Workplace Atmosphere Or Biological Monitoring May Be Required To Determine The Effectiveness Of The Ventilation Or Other Control Measures And/Or The Necessity To Use Respiratory Protective Equipment. Reference Should Be Made To Monitoring Standards, Such As The Following: European Standard EN 689 (Workplace Atmospheres – Guidance For The Assessment Of Exposure By Inhalation To Chemical Agents For Comparison With Limit Values And Measurement Strategy) European Standard EN 14042 (Workplace Atmospheres – Guide For The Application And Use Of Procedures For The Assessment Of Exposure To Chemical And Biological Agents) European Standard EN 482 (Workplace Atmospheres – General Requirements For The Performance Of Procedures For The Measurement Of Chemical Agents). Reference To National Guidance Documents For Methods For The Determination Of Hazardous Substances Will Also Be Required. |
| <b>8.2 Exposure Control<br/>Appropriate Engineering Controls</b>                                                                              | Mechanical Ventilation And Local Exhaust Will Reduce Exposure Via The Air. Use Oil Resistant Material In Construction Of Handling Equipment. Store Under Recommended Conditions And If Heated, Temperature Control Equipment Should Be Used To Avoid Overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual Protection Measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene Measures               | Wash Hands, Forearms And Face Thoroughly After Handling Chemical Products, Before Eating, Smoking And Using The Lavatory And At The End Of The Working Period. Ensure That Eyewash Stations And Safety Showers Are Close To The Workstation Location. Wash Contaminated Clothing Before Reuse.                       |
| Eye / Face Protection          | Recommended: Safety Glasses With Side Shields.                                                                                                                                                                                                                                                                       |
| <b>Skin Protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand Protection                | 4 – 8 Hours (Breakthrough Time): Nitrile Rubber.                                                                                                                                                                                                                                                                     |
| Body Protection                | Wear Protective Clothing If There Is A Risk Of Skin Contact. Change Contaminated Clothes At The End Of Working Shift.                                                                                                                                                                                                |
| Other Skin Protection          | Appropriate Footwear And Any Additional Skin Protection Measures Should Be Selected Based On The Task Being Performed And The Risks Involved And Should Be Approved By A Specialist Before Handling This Product.                                                                                                    |
| Respiratory Protection         | Respirator Selection Must Be Based On Known Or Anticipated Exposure Levels, The Hazards Of The Product And The Safe Working Limits Of The Selected Respirator. Use A Properly Fitted, Particulate Filter Respirator Complying With An Approved Standard If A Risk Assessment Indicates This Is Necessary.            |
| Environmental Exposure Control | Emissions From Ventilation Or Work Process Equipment Should Be Checked To Ensure They Comply With The Requirements Of Environmental Protection Legislation. In Some Cases, Fume Scrubbers, Filters Or Engineering Modifications To The Process Equipment Will Be Necessary To Reduce Emissions To Acceptable Levels. |

**Section 9: Physical And Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical State                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum Odor                                               |
| Odour Threshold                                 | Not Available                                                |
| Ph                                              | Not Applicable                                               |
| Pour Point                                      | < -3 °C (ASTM D 97)                                          |
| Flash Point                                     | > 230 °C                                                     |
| Evaporation Rate                                | Not Available                                                |
| Flammability (Solid, Gas)                       | Not Available                                                |
| Flammability Limits In Air (Lower), % By Volume | Not Available                                                |
| Flammability Limits In Air (Upper), % By Volume | Not Available                                                |
| Vapour Pressure                                 | ≤ 0,1 Hpa (20 °C) (Mineral Oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (Ies)                        | 0.88 Max At 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (Water)                                                      | Insoluble In Water                   |
| Partition Coefficient (N-Octanol/Water)                                 | Not Available                        |
| Decomposition Temperature                                               | No Data                              |
| Auto-Ignition Temperature                                               | >300 °C                              |
| Kinematic Viscosity At 40 °C (104 °F)                                   | 100 Cst (ASTM D 445) (Typical Value) |
| Explosive Properties                                                    | No Data                              |
| Oxidising Properties                                                    | No Data                              |
| DMSO Extractable Compounds For Base Oil Substance(S) According To IP346 | Not Available<br><3 %                |

**Section 10: Stability And Reactivity**

|                                                |                                                                                                  |
|------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No Specific Test Data Related To Reactivity Available For This Product Or Its Ingredients.       |
| <b>10.2 Chemical Stability</b>                 | Stable Under Normal Conditions                                                                   |
| <b>10.3 Possibility Of Hazardous Reactions</b> | Under Normal Conditions Of Storage And Use, Hazardous Reactions Will Not Occur. Oxidising Agent. |

|                                              |                                                                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.4 Conditions To Avoid</b>              | Keep Away From Extreme Heat And Oxidising Agents.                                                                                                                                                |
| <b>10.5 Incompatible Materials</b>           | Incomplete Combustion Is Likely To Give Rise To A Complex Mixture Of                                                                                                                             |
| <b>10.6 Hazardous Decomposition Products</b> | Airborne Solid And Liquid Particulates, Gases, Including Carbon Monoxide, H <sub>2</sub> S, SO <sub>x</sub> (Sulphur Oxides) Or Sulphuric Acid And Unidentified Organic And Inorganic Compounds. |

**SECTION 11: Toxicological Information****11.1 Information On Toxicological Effects****Acute Toxicity**

| Product / Ingredient Name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), HydroTreated Heavy Paraffinic | LC 50 Inhalation Dusts And Mists | Rat     | >2.18mg/L    | 4 Hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 Mg/Kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 Mg/Kg | —        |

**Irritation / Corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No Data Available To Indicate Product Or Any Components Present Greater Than 0.1 % Are Multigene Or Genotoxic.                       |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate.                                                     |
| Reproductive Toxicity                              | The Product Should Not Be Regarded As A Carcinogen. Contains No Ingredient Listed As Toxic To Reproduction.                          |
| Specific Target Organ Toxicity – Single Exposure   | Not Classified                                                                                                                       |
| Specific Target Organ Toxicity – Repeated Exposure |                                                                                                                                      |
| Aspiration Hazard                                  | Aspiration Hazard – Category 1                                                                                                       |
| Information On Likely Routes Of Exposure           | Not Available                                                                                                                        |
| <b>Potential Acute Health Effects</b>              |                                                                                                                                      |
| Eye Contact                                        | Eye Contact May Cause Redness And Transient Pain.                                                                                    |
| Inhalation                                         | Inhalation Of Oil Mist Or Vapours At Elevated Temperatures May Cause Respiratory Irritation.                                         |
| Skin Contact                                       | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Ingestion                                          | May Be Fatal If Swallowed And Enters Airways.                                                                                        |
| <b>Potential Chronic Health Effects</b>            |                                                                                                                                      |
| General                                            | No Known Significant Effects Or Critical Hazards.                                                                                    |
| Carcinogenicity                                    | The Base Oil(S) In This Product Is Based On An Severely Hydrotreated Distillate. The Product Should Not Be Regarded As A Carcinogen. |

|                                           |                                                   |
|-------------------------------------------|---------------------------------------------------|
| Mutagenicity                              | No Known Significant Effects Or Critical Hazards. |
| Teratogenicity                            |                                                   |
| Product / Ingredient Name                 |                                                   |
| Fertility Effects                         |                                                   |
| Other Information Specific Hazard         | Not Available                                     |
| <b>Section 12: Ecological Information</b> |                                                   |
| <b>12.1 Toxicity</b>                      | Not Expected To Be Harmful To Aquatic Organisms.  |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <b>12.2 Persistence And Degradability</b>        | Not Inherently Biodegradable.                                                                                                              |
| <b>12.3 Bioaccumulative Potential</b>            | Bioaccumulation Is Unlikely To Be Significant Because Of The Low Water Solubility Of This Product.                                         |
| <b>12.4 Mobility In Soil</b>                     | Not Considered Mobile.                                                                                                                     |
| <b>12.5 Results Of PBT &amp; Vpnb Assessment</b> | Not Applicable                                                                                                                             |
| <b>12.6 Other Adverse Effects</b>                | Insoluble In Water. Spills May Form A Film On Water Surfaces Causing Physical Damage To Organisms. Oxygen Transfer Could Also Be Impaired. |

### Section 13: Disposal Considerations

The Information In This Section Contains Generic Advice And Guidance. The List Of Identified Uses In Section 1 Should Be Consulted For Any Available Use-Specific Information Provided In The Exposure Scenario(S).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods Of Disposal                         | Where Possible (E.G. In The Absence Of Relevant Contamination), Recycling Of Used Substance Is Feasible And Recommended. This Substance Can Be Burned Or Incinerated, Subject To National/Local Authorisations, Relevant Contamination Limits, Safety Regulations And Air Quality Legislation. Contaminated Or Waste Substance (Not Directly Recyclable): Disposal Can Be Carried Out Directly, Or By Delivery To Qualified Waste Handlers. National Legislation May Identify A Specific Organisation, And/Or Prescribe Composition Limits And Methods For Recovery Or Disposal |
| Hazardous Waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European Waste Catalogue (EWC) Waste Code 13 03 07* | Waste Designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-Based Non-Chlorinated Insulating And Heat Transmission Oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods Of Disposal                                 | The Generation Of Waste Should Be Avoided Or Minimised Wherever Possible. Waste Packaging Should Be Recycled. Incineration Or Landfill Should Only Be Considered When Recycling Is Not Feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International Transport Regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN Number</b>                  | Not Regulated | Not Regulated | Not Regulated             | Not Regulated              |
| <b>14.2 UN Proper Shipping Name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport Hazard Class(Es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing Group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental Hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special Precautions For User Oils

#### 14.7 Transport In Bulk According To Annex I Of MARPOL 73/78 And The IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List Of Substances Subject To Authorisation Annex XIV Substances Of Very High Concern                                   | None Of The Components Are Listed                                                |
| Annex XVII – Restrictions On The Manufacture, Placing On The Market And Use Of Certain Dangerous Substances, Mixtures And Articles. | Not Applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory Name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory Of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory Of Existing Chemical Substances In China (IECSC) – Yes                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Europe                                                                                                                                                                                                                                                                                                 | European Inventory Of Existing Commercial Chemical Substances (EINECS) – Yes                                    |
|                                                                                                                                                                                                                                                                                                        | European List Of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory Of Existing And New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory Of Chemicals And Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” Indicates That All Components Of This Product Comply With The Inventory Requirements Administered By The Governing Country(S)<br>A “No” Indicates That One Or More Components Of The Product Are Not Listed Or Exempt From Listing On The Inventory Administered By The Governing Country(S). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision Comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend To Abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European Agreement Concerning The International Carriage Of Dangerous Good By Road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations Agreement Concerning The International Carriage Of Dangerous Good By Rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System Of Classification And Labeling Of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling And Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization And Restriction Of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median Lethal Concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median Lethal Dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio Accumulative And Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Hydraulic Oil AW 150

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                           |
|---------------------|---------------------------|
| Product name        | ARKO Hydraulic Oil AW 150 |
| Product description | Anti-Wear Hydraulic Oil   |
| Product type        | Industrial Oil            |
| MARPOL Annex-1      | ****                      |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 230 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                             |                                                                                                                                             |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea                       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand                 | New Zealand Inventory – Yes                                                                                                                 |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                                                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory – Yes                                                                                         |

\*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

### Section 16: Other Information

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| Revision comments       |                                                                                        |
| Legend to abbreviations |                                                                                        |
| ADR                     | European agreement concerning the international carriage of dangerous good by road.    |
| RID                     | Regulations agreement concerning the international carriage of dangerous good by rail. |
| IMDG Code               | International Maritime Dangerous Goods Code.                                           |
| ICAO                    | International Civil Aviation Organization.                                             |
| IATA                    | International Air Transport Association.                                               |

|       |                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------|
| GHS   | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP   | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA  | Self-Contained Breathing Apparatus.                                                                             |
| REACH | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50 | Median lethal concentration.                                                                                    |
| LD 50 | Median lethal dose.                                                                                             |
| PBT   | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Circulating Oil 220

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                          |
|---------------------|--------------------------|
| Product name        | ARKO Circulating Oil 220 |
| Product description | Circulating Oil          |
| Product type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|              |              |   |
|--------------|--------------|---|
| 4-<br>Extrem | Health       | 1 |
| e3-<br>High  | Flammability | 1 |
| 2-Moderate   | Reactivity   | 0 |
| 1-Slight     | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -3 °C (ASTM D 97)                                          |
| Flash point                                     | > 230 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | > 300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 220 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %               |

### Section 10: Stability and Reactivity

|                                         |                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1 Reactivity                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| 10.2 Chemical stability                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| 10.3 Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| 10.4 Conditions to avoid                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| 10.5 Incompatible materials             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| 10.6 Hazardous decomposition products   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                           |  |
|-------------------------------------------|--|
| 11.1 Information on toxicological effects |  |
|-------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity****Product / ingredient name****Fertility effects****Other information Specific hazard****Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| Revision comments                                                                                                                                                                                                                                                                                      |                                                                                                                 |
| Legend to abbreviations                                                                                                                                                                                                                                                                                |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Circulating Oil 320

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                          |
|---------------------|--------------------------|
| Product name        | ARKO Circulating Oil 320 |
| Product description | Circulating Oil          |
| Product type        | Industrial Oil           |
| MARPOL Annex-1      | *****                    |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                               |                                                                                                                                                                                             |
|-----------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters          | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
| Special protective equipment for firefighters | Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure                                |

mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## Section 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

### 6.2 Environmental precautions

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

### 6.3 Methods and material for containment and cleaning up

Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

### 6.4 Reference to other sections

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal protective equipment. See Section 13: For additional waste treatment information.

**Section 7: Handling and Storage**

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7.1 Advice on general information – hygiene, storage</b>            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>7.2 Conditions for safe storage including any incompatibilities</b> | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight. |
| <b>7.3 Specific end use(s) – Recommendations</b>                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Section 8: Exposure Controls / Personal Protection**

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**8.1 Control parameters**

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational exposure limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                        | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| <b>8.2 Exposure control<br/>Appropriate engineering controls</b> | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual protection measures</b>                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene measures                                                 | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Eye / face protection                                            | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Skin protection</b>                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hand protection                                                  | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

**Section 9: Physical and Chemical Properties**

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -3 °C (ASTM D 97)                                          |
| Flash point                                     | > 250 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | > 300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 320 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %               |

**Section 10: Stability and Reactivity**

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur. Oxidising agent.                                                                                                                                                                      |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

**SECTION 11: Toxicological Information**

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Circulating Oil 460

|                                                           |                                                                                                                                                                                                                                                                       |   |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Section 1: Identification of the Substance / Mixture      |                                                                                                                                                                                                                                                                       |   |
| 1.1 Product identifier                                    |                                                                                                                                                                                                                                                                       |   |
| Product name                                              | ARKO Circulating Oil 460                                                                                                                                                                                                                                              |   |
| Product description                                       | Circulating Oil                                                                                                                                                                                                                                                       |   |
| Product type                                              | Industrial Oil                                                                                                                                                                                                                                                        |   |
| MARPOL Annex-1                                            | ****                                                                                                                                                                                                                                                                  |   |
| 1.2 Identified uses                                       |                                                                                                                                                                                                                                                                       |   |
| Distribution of substance                                 | Industrial                                                                                                                                                                                                                                                            |   |
| Formulation & (re)packing of substance & mixtures         | Industrial                                                                                                                                                                                                                                                            |   |
| Manufacture of substance                                  | Industrial                                                                                                                                                                                                                                                            |   |
| Functional fluids                                         | Industrial                                                                                                                                                                                                                                                            |   |
| Section 2: Hazard Identification                          |                                                                                                                                                                                                                                                                       |   |
| 4-Extrem                                                  | Health                                                                                                                                                                                                                                                                | 1 |
| e3-High                                                   | Flammability                                                                                                                                                                                                                                                          | 1 |
| 2-Moderate                                                | Reactivity                                                                                                                                                                                                                                                            | 0 |
| 1-Slight                                                  | Special                                                                                                                                                                                                                                                               | — |
| Section 3: Compostion / Information on Ingredients        |                                                                                                                                                                                                                                                                       |   |
| Product / Ingredient name                                 | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons.                                                                                                                                                        |   |
| Section 4: First Aid Measures                             |                                                                                                                                                                                                                                                                       |   |
| Inhalation exposure                                       | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                                                                                                                                    |   |
| Skin contact                                              | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.                                                                                                                             |   |
| Swallowing or other                                       | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                                                                                                                                |   |
| Eye contact                                               | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                                                                                                                                     |   |
| Protection first-aiders                                   | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces.                                                                                                                 |   |
| Section 5: Fire Fighting Measures                         |                                                                                                                                                                                                                                                                       |   |
| 5.1 Extinguishing media                                   |                                                                                                                                                                                                                                                                       |   |
| Unsuitable extinguishing media                            | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface.                                                                                   |   |
| 5.2 Special hazards arising from the substance or mixture |                                                                                                                                                                                                                                                                       |   |
| Hazards from the substance or mixture                     | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |   |
| Hazardous thermal decomposition products                  | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |   |
| 5.3 Advice for firefighters                               |                                                                                                                                                                                                                                                                       |   |
| Special precautions for firefighters                      | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.                                                                           |   |

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 8: Exposure Controls / Personal Protection**

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

**8.1 Control parameters**

## Occupational exposure limits

## Product / Ingredient name

Distillates, mixture of hydrocarbons

## Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

## Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**8.2 Exposure control  
Appropriate engineering controls**

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

**Individual protection measures**

## Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

## Eye / face protection

Recommended: Safety glasses with side shields.

**Skin protection**

## Hand protection

4 – 8 hours (breakthrough time): nitrile rubber.

## Body protection

Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.

## Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

## Respiratory protection

Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.

## Environmental exposure control

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**Section 9: Physical and Chemical Properties**

## Appearance

Clear

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -3 °C (ASTM D 97)                                          |
| Flash point                                     | > 260 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | >300 °C                              |
| Kinematic viscosity at 40 °C (104 °F)                                   | 460 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br><3 %                |

#### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

#### SECTION 11: Toxicological Information

##### 11.1 Information on toxicological effects

###### Acute toxicity

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

###### Irritation / corrosion

|                  |                                                   |
|------------------|---------------------------------------------------|
| Skin             | No known significant effects or critical hazards. |
| Eye              |                                                   |
| Respiratory      |                                                   |
| <b>Sensation</b> |                                                   |
| Skin             |                                                   |

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Respiratory                                        | No known significant effects or critical hazards.                                                                                    |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Mutagenicity                                     | No known significant effects or critical hazards.                                                                                          |
| Teratogenicity                                   |                                                                                                                                            |
| Product / ingredient name                        |                                                                                                                                            |
| Fertility effects                                |                                                                                                                                            |
| Other information Specific hazard                | Not available                                                                                                                              |
| <b>Section 12: Ecological Information</b>        |                                                                                                                                            |
| <b>12.1 Toxicity</b>                             | Not expected to be harmful to aquatic organisms.                                                                                           |
| <b>12.2 Persistence and degradability</b>        | Not inherently biodegradable.                                                                                                              |
| <b>12.3 Bioaccumulative potential</b>            | Bioaccumulation is unlikely to be significant because of the low water solubility of this product.                                         |
| <b>12.4 Mobility in soil</b>                     | Not considered mobile.                                                                                                                     |
| <b>12.5 Results of PBT &amp; vPvB assessment</b> | Not applicable                                                                                                                             |
| <b>12.6 Other adverse effects</b>                | Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired. |

### Section 13: Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                     |                                                                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Methods of disposal | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| <b>Additional Information</b>          | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation<br>Annex XIV<br>Substances of very high concern                             | None of the components are listed                                                                                                           |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                                                                              |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                                                                                       |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                                                                                    |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No                                                            |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                                                                            |
| Europe                                                                                                                              | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan                                                                                                                               | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea                                                                                                                               | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand                                                                                                                         | New Zealand Inventory – Yes                                                                                                                 |
| Philippines                                                                                                                         | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                                                     |
| United States & Puerto Rico                                                                                                         | Toxic Substances Control Act (TSCA) Inventory – Yes                                                                                         |

\*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**Section 16: Other Information**

|                                |                                                                                        |
|--------------------------------|----------------------------------------------------------------------------------------|
| <b>Revision comments</b>       |                                                                                        |
| <b>Legend to abbreviations</b> |                                                                                        |
| ADR                            | European agreement concerning the international carriage of dangerous good by road.    |
| RID                            | Regulations agreement concerning the international carriage of dangerous good by rail. |
| IMDG Code                      | International Maritime Dangerous Goods Code.                                           |
| ICAO                           | International Civil Aviation Organization.                                             |

|       |                                                                                                                 |
|-------|-----------------------------------------------------------------------------------------------------------------|
| IATA  | International Air Transport Association.                                                                        |
| GHS   | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP   | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA  | Self-Contained Breathing Apparatus.                                                                             |
| REACH | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50 | Median lethal concentration.                                                                                    |
| LD 50 | Median lethal dose.                                                                                             |
| PBT   | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

Disclaimer: Information contained in this material data sheet is believed to be reliable, but no representation, guarantee or warranties of any kind made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information content in the material datasheet is relevant to the product manufactured / handled or sold by, as the case may be. R K PETROLEUMS makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.



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# ARKO Hydraulic Oil 32

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                       |
|---------------------|-----------------------|
| Product name        | ARKO Hydraulic Oil 32 |
| Product description | Hydraulic Oil         |
| Product type        | Industrial Oil        |
| MARPOL Annex-1      | *****                 |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|            |              |   |
|------------|--------------|---|
| 4-         | Health       | 1 |
| Extrem     | Flammability | 1 |
| e3-        | Reactivity   | 0 |
| High       | Special      | — |
| 2-Moderate |              |   |
| 1-Slight   |              |   |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference to other sections</b>                                 | See Section 1: For emergency contact information.<br>See Section 8: For information on appropriate personal protective equipment. See Section 13: For additional waste treatment information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Section 7: Handling and Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>7.1 Advice on general information – hygiene, storage</b>            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>7.2 Conditions for safe storage including any incompatibilities</b> | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight. |
| <b>7.3 Specific end use(s) – Recommendations</b>                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational exposure limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                                                                                                     | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                                                                                             | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| <b>8.2 Exposure control<br/>Appropriate engineering controls</b>                                                                              | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual protection measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene measures                                                                                                                              | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | workstation location. Wash contaminated clothing before reuse.                                                                                                                                                                                                                                                       |
| Eye / face protection          | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                                       |
| <b>Skin protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Yellow                                                       |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 190 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | > 300 °C                            |
| Kinematic viscosity at 40 °C (104 °F)                                   | 32 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %              |

### Section 10: Stability and Reactivity

|                                                |                                                                                                     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.          |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                      |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent. |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                   |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of                                |

**10.6 Hazardous decomposition products**

airborne solid and liquid particulates, gases, including carbon monoxide, H<sub>2</sub>S, SO<sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds.

**SECTION 11: Toxicological Information****11.1 Information on toxicological effects****Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       |                                                                                                                                      |
| Carcinogenicity                                    | No data available to indicate product or any components present greater than 0.1 % are mutagenic or genotoxic.                       |
| Reproductive toxicity                              | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Specific target organ toxicity – single exposure   | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – repeated exposure | Not classified                                                                                                                       |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

|                                           |                                                                                      |
|-------------------------------------------|--------------------------------------------------------------------------------------|
| Mutagenicity                              | No known significant effects or critical hazards.                                    |
| Teratogenicity                            |                                                                                      |
| Product / ingredient name                 |                                                                                      |
| Fertility effects                         |                                                                                      |
| Other information Specific hazard         | Not available                                                                        |
| <b>Section 12: Ecological Information</b> |                                                                                      |
| <b>12.1 Toxicity</b>                      | Not expected to be harmful to aquatic organisms.                                     |
| <b>12.2 Persistence and degradability</b> | Not inherently biodegradable.                                                        |
| <b>12.3 Bioaccumulative potential</b>     | Bioaccumulation is unlikely to be significant because of the low water solubility of |

|                                                  |                                                                                                                                            |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                                  | this product.                                                                                                                              |
| <b>12.4 Mobility in soil</b>                     | Not considered mobile.                                                                                                                     |
| <b>12.5 Results of PBT &amp; vPvB assessment</b> | Not applicable                                                                                                                             |
| <b>12.6 Other adverse effects</b>                | Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired. |

### Section 13: Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International transport regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special precautions for user oils

#### 14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|        |                                                                              |
|--------|------------------------------------------------------------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes |
|--------|------------------------------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                        | European List of Notified Chemical Substances (ELINCS) – No                                                     |
| Japan                                                                                                                                                                                                                                                                                                  | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                  |
| Korea                                                                                                                                                                                                                                                                                                  | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| Revision comments                                                                                                                                                                                                                                                                                      |                                                                                                                 |
| Legend to abbreviations                                                                                                                                                                                                                                                                                |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

Disclaimer: Information contained in this material data sheet is believed to be reliable, but no representation, guarantee or warranties of any kind made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information content in the material datasheet is relevant to the product manufactured / handled or sold by, as the case may be. R K PETROLEUMS makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

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# ARKO Hydraulic Oil 46

|                                                           |                                                                                                                                                                                                                                                                       |   |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Section 1: Identification of the Substance / Mixture      |                                                                                                                                                                                                                                                                       |   |
| 1.1 Product identifier                                    |                                                                                                                                                                                                                                                                       |   |
| Product name                                              | ARKO Hydraulic Oil 46                                                                                                                                                                                                                                                 |   |
| Product description                                       | Hydraulic Oil                                                                                                                                                                                                                                                         |   |
| Product type                                              | Industrial Oil                                                                                                                                                                                                                                                        |   |
| MARPOL Annex-1                                            | ****                                                                                                                                                                                                                                                                  |   |
| 1.2 Identified uses                                       |                                                                                                                                                                                                                                                                       |   |
| Distribution of substance                                 | Industrial                                                                                                                                                                                                                                                            |   |
| Formulation & (re)packing of substance & mixtures         | Industrial                                                                                                                                                                                                                                                            |   |
| Manufacture of substance                                  | Industrial                                                                                                                                                                                                                                                            |   |
| Functional fluids                                         | Industrial                                                                                                                                                                                                                                                            |   |
| Section 2: Hazard Identification                          |                                                                                                                                                                                                                                                                       |   |
| 4-Extrem<br>e3-High<br>2-Moderate<br>1-Slight             | Health                                                                                                                                                                                                                                                                | 1 |
|                                                           | Flammability                                                                                                                                                                                                                                                          | 1 |
|                                                           | Reactivity                                                                                                                                                                                                                                                            | 0 |
|                                                           | Special                                                                                                                                                                                                                                                               | — |
| Section 3: Compostion / Information on Ingredients        |                                                                                                                                                                                                                                                                       |   |
| Product / Ingredient name                                 | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons.                                                                                                                                                        |   |
| Section 4: First Aid Measures                             |                                                                                                                                                                                                                                                                       |   |
| Inhalation exposure                                       | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                                                                                                                                    |   |
| Skin contact                                              | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.                                                                                                                             |   |
| Swallowing or other                                       | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                                                                                                                                |   |
| Eye contact                                               | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                                                                                                                                     |   |
| Protection first-aiders                                   | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces.                                                                                                                 |   |
| Section 5: Fire Fighting Measures                         |                                                                                                                                                                                                                                                                       |   |
| 5.1 Extinguishing media                                   |                                                                                                                                                                                                                                                                       |   |
| Unsuitable extinguishing media                            | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface.                                                                                   |   |
| 5.2 Special hazards arising from the substance or mixture |                                                                                                                                                                                                                                                                       |   |
| Hazards from the substance or mixture                     | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |   |
| Hazardous thermal decomposition products                  | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |   |
| 5.3 Advice for firefighters                               |                                                                                                                                                                                                                                                                       |   |
| Special precautions for firefighters                      | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.                                                                           |   |

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face- piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## Section 6: Accidental Release Measures

## 6.1 Personal precautions, protective equipment and emergency procedures

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

## 6.2 Environmental precautions

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

## 6.3 Methods and material for containment and cleaning up

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

## 6.4 Reference to other sections

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

|                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                 | protective equipment. See Section 13: For additional waste treatment information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Section 7: Handling and Storage</b>                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7.1 Advice on general information – hygiene, storage            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 7.2 Conditions for safe storage including any incompatibilities | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight. |
| 7.3 Specific end use(s) – Recommendations                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational exposure limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                                                                                                     | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                                                                                             | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| 8.2 Exposure control<br>Appropriate engineering controls                                                                                      | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual protection measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene measures                                                                                                                              | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Eye / face protection                                                                                                                         | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Skin protection                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

## Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Yellow                                                       |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 200 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | > 300 °C                            |
| Kinematic viscosity at 40 °C (104 °F)                                   | 46 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %              |

## Section 10: Stability and Reactivity

|                                         |                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1 Reactivity                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| 10.2 Chemical stability                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| 10.3 Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| 10.4 Conditions to avoid                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| 10.5 Incompatible materials             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| 10.6 Hazardous decomposition products   |                                                                                                                                                                                                                                                                       |

## SECTION 11: Toxicological Information

## 11.1 Information on toxicological effects

## Acute toxicity

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

## Irritation / corrosion

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| Sensation                                          |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| Potential acute health effects                     |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| Potential chronic health effects                   |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

## Mutagenicity

## Teratogenicity

## Product / ingredient name

## Fertility effects

## Other information Specific hazard

## Section 12: Ecological Information

## 12.1 Toxicity

## 12.2 Persistence and degradability

## 12.3 Bioaccumulative potential

## 12.4 Mobility in soil

## 12.5 Results of PBT &amp; vPvB assessment

## 12.6 Other adverse effects

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical

damage to organisms. Oxygen transfer could also be impaired.

### Section 13: Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International transport regulations

|                                 | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|---------------------------------|---------------|---------------|---------------------------|----------------------------|
| 14.1 UN number                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| 14.2 UN proper shipping name    | —             | —             | —                         | —                          |
| 14.3 Transport hazard class(es) | —             | —             | —                         | —                          |
| 14.4 Packing group              | —             | —             | —                         | —                          |
| 14.5 Environmental hazards      | No            | No            | No                        | No                         |
| Additional Information          | —             | —             | —                         | —                          |

#### 14.6 Special precautions for user oils

#### 14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV<br>Substances of very high concern                                | None of the components are listed                                                                                                           |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                                                                              |
| International Lists National Inventory                                                                                              | Inventory name                                                                                                                              |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                                                                                    |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No                                                            |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                                                                            |
| Europe                                                                                                                              | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan                                                                                                                               | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea                                                                                                                               | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand                                                                                                                         | New Zealand Inventory – Yes                                                                                                                 |
| Philippines                                                                                                                         | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                                                     |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| Section 16: Other Information                                                                                                                                                                                                                                                                          |                                                                                                                 |
| Revision comments                                                                                                                                                                                                                                                                                      |                                                                                                                 |
| Legend to abbreviations                                                                                                                                                                                                                                                                                |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

Disclaimer: Information contained in this material data sheet is believed to be reliable, but no representation, guarantee or warranties of any kind made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information content in the material datasheet is relevant to the product manufactured / handled or sold by, as the case may be. R K PETROLEUMS makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

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# ARKO Hydraulic Oil 68

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                       |
|---------------------|-----------------------|
| Product name        | ARKO Hydraulic Oil 68 |
| Product description | Hydraulic Oil         |
| Product type        | Industrial Oil        |
| MARPOL Annex-1      | *****                 |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Yellow                                                       |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 210 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | > 300 °C                            |
| Kinematic viscosity at 40 °C (104 °F)                                   | 68 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %              |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|             |                                                   |
|-------------|---------------------------------------------------|
| Skin        | No known significant effects or critical hazards. |
| Eye         |                                                   |
| Respiratory |                                                   |

**Sensation**

|             |                                                   |
|-------------|---------------------------------------------------|
| Skin        | No known significant effects or critical hazards. |
| Respiratory |                                                   |

|              |                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------|
| Mutagenicity | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic. |
|--------------|----------------------------------------------------------------------------------------------------------------|

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| Carcinogenicity | The base oil(s) in this product is based on an severely hydrotreated distillate. |
|-----------------|----------------------------------------------------------------------------------|

|                       |                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------|
| Reproductive toxicity | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction. |
|-----------------------|-------------------------------------------------------------------------------------------------------------|

|                                                    |                |
|----------------------------------------------------|----------------|
| Specific target organ toxicity – single exposure   | Not classified |
| Specific target organ toxicity – repeated exposure |                |

|                   |                                |
|-------------------|--------------------------------|
| Aspiration hazard | Aspiration hazard – Category 1 |
|-------------------|--------------------------------|

|                                          |               |
|------------------------------------------|---------------|
| Information on likely routes of exposure | Not available |
|------------------------------------------|---------------|

|                                       |  |
|---------------------------------------|--|
| <b>Potential acute health effects</b> |  |
|---------------------------------------|--|

|             |                                                   |
|-------------|---------------------------------------------------|
| Eye contact | Eye contact may cause redness and transient pain. |
|-------------|---------------------------------------------------|

|            |                                                                                              |
|------------|----------------------------------------------------------------------------------------------|
| Inhalation | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation. |
|------------|----------------------------------------------------------------------------------------------|

|              |                                                   |
|--------------|---------------------------------------------------|
| Skin contact | No known significant effects or critical hazards. |
|--------------|---------------------------------------------------|

|           |                                               |
|-----------|-----------------------------------------------|
| Ingestion | May be fatal if swallowed and enters airways. |
|-----------|-----------------------------------------------|

|                                         |  |
|-----------------------------------------|--|
| <b>Potential chronic health effects</b> |  |
|-----------------------------------------|--|

|         |                                                   |
|---------|---------------------------------------------------|
| General | No known significant effects or critical hazards. |
|---------|---------------------------------------------------|

|                 |                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Carcinogenicity | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|

|                                   |                                                   |
|-----------------------------------|---------------------------------------------------|
| Mutagenicity                      | No known significant effects or critical hazards. |
| Teratogenicity                    |                                                   |
| Product / ingredient name         |                                                   |
| Fertility effects                 | Not available                                     |
| Other information Specific hazard |                                                   |

**Section 12: Ecological Information**

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>12.1 Toxicity</b> | Not expected to be harmful to aquatic organisms. |
|----------------------|--------------------------------------------------|

|                                           |                               |
|-------------------------------------------|-------------------------------|
| <b>12.2 Persistence and degradability</b> | Not inherently biodegradable. |
|-------------------------------------------|-------------------------------|

|                                       |                                                                                                    |
|---------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>12.3 Bioaccumulative potential</b> | Bioaccumulation is unlikely to be significant because of the low water solubility of this product. |
|---------------------------------------|----------------------------------------------------------------------------------------------------|

|                              |                        |
|------------------------------|------------------------|
| <b>12.4 Mobility in soil</b> | Not considered mobile. |
|------------------------------|------------------------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>12.5 Results of PBT &amp; vPvB assessment</b> | Not applicable |
|--------------------------------------------------|----------------|

|                                   |                                                                               |
|-----------------------------------|-------------------------------------------------------------------------------|
| <b>12.6 Other adverse effects</b> | Insoluble in water. Spills may form a film on water surfaces causing physical |
|-----------------------------------|-------------------------------------------------------------------------------|

damage to organisms. Oxygen transfer could also be impaired.

### Section 13: Disposal Considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

### Section 14: Transport Information

#### International transport regulations

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

#### 14.6 Special precautions for user oils

#### 14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code

### Section 15: Regulatory Information

#### 15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)

|                                                                                                                                     |                                   |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                    |

#### International Lists National Inventory

| Inventory name                                                               |
|------------------------------------------------------------------------------|
| Australia                                                                    |
| Australian Inventory of Chemical Substances (AICS) – Yes                     |
| Canada                                                                       |
| Domestic Substances List (DSL) – Yes                                         |
| Non-Domestic Substances List (NDSL) – No                                     |
| China                                                                        |
| Inventory of Existing Chemical Substances in China (IECSC) – Yes             |
| Europe                                                                       |
| European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes |
| European List of Notified Chemical Substances (ELINCS) – No                  |
| Japan                                                                        |
| Inventory of Existing and New Chemical Substances (ENCS) – Yes               |
| Korea                                                                        |
| Existing Chemicals List (ECL) – Yes                                          |
| New Zealand                                                                  |
| New Zealand Inventory – Yes                                                  |

|                                                                                                                                                                                                                                                                                                                   |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                                       | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                                       | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| <p>*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)</p> <p>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).</p> |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                              |                                                                                                                 |
| Revision comments                                                                                                                                                                                                                                                                                                 |                                                                                                                 |
| Legend to abbreviations                                                                                                                                                                                                                                                                                           |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                               | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                               | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                                         | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                              | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                              | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                               | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                               | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                              | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                             | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                             | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                             | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                               | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Hydraulic Oil 100

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                        |
|---------------------|------------------------|
| Product name        | ARKO Hydraulic Oil 100 |
| Product description | Hydraulic Oil          |
| Product type        | Industrial Oil         |

**MAR** \*\*\*\*\*

POL Annex-1

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                        |              |   |
|--------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e 3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                        | Flammability | 1 |
|                                                        | Reactivity   | 0 |
|                                                        | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                               |                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special protective equipment for firefighters | Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents. |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Section 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

|                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| For non-emergency personnel   | <p>Keep non-involved personnel away from the area of spillage.</p> <p>Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.</p> <p>Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.</p> <p>Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.</p>                                                                          |
| For emergency responders      | <p>For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.</p> <p>Small spillages: Normal antistatic working clothes are usually adequate.</p> <p>Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.</p> <p>Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.</p> <p>Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.</p> |
| 6.2 Environmental precautions | <p>Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.</p> <p>In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.</p> <p>If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.</p>                                                                                                                                                                                                                             |

### 6.3 Methods and material for containment and cleaning up

|             |                                                                                                                                                                                                                                                                                                                    |
|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Small spill | Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.                                                                                                                                                                                                                         |
| Large spill | Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal. |

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>6.4 Reference to other sections</b>                                 | See Section 1: For emergency contact information.<br>See Section 8: For information on appropriate personal protective equipment. See Section 13: For additional waste treatment information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Section 7: Handling and Storage</b>                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>7.1 Advice on general information – hygiene, storage</b>            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>7.2 Conditions for safe storage including any incompatibilities</b> | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents.<br>Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards.<br>Protect from sunlight. |
| <b>7.3 Specific end use(s) – Recommendations</b>                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Section 8: Exposure Controls / Personal Protection</b>                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational exposure limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                                                                                                     | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                                                                                             | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| <b>8.2 Exposure control<br/>Appropriate engineering controls</b>                                                                              | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual protection measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene measures                                                                                                                              | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye / face protection          | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                                       |
| <b>Skin protection</b>         |                                                                                                                                                                                                                                                                                                                      |
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 210 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | > 300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 100 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %               |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur. Oxidising agent.                                                                                                                                                                      |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

**SECTION 11: Toxicological Information****11.1 Information on toxicological effects****Acute toxicity**

| Product / ingredient name                                    | Result                              | Species | Dose            | Exposure |
|--------------------------------------------------------------|-------------------------------------|---------|-----------------|----------|
| Distillate (Petroleum),<br>hydro treated heavy<br>paraffinic | LC 50 Inhalation dusts<br>and mists | Rat     | >2.18mg/l       | 4 hours  |
|                                                              | LD 50 Dermal                        | Rabbit  | > 5000<br>mg/kg | —        |
|                                                              | LD 50 Oral                          | Rat     | >15000<br>mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are mutagenic or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

|                                                  |                                                                                                    |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------|
| Mutagenicity                                     | No known significant effects or critical hazards.                                                  |
| Teratogenicity                                   |                                                                                                    |
| Product / ingredient name                        |                                                                                                    |
| Fertility effects                                | Not available                                                                                      |
| Other information Specific hazard                |                                                                                                    |
| <b>Section 12: Ecological Information</b>        |                                                                                                    |
| <b>12.1 Toxicity</b>                             | Not expected to be harmful to aquatic organisms.                                                   |
| <b>12.2 Persistence and degradability</b>        | Not inherently biodegradable.                                                                      |
| <b>12.3 Bioaccumulative potential</b>            | Bioaccumulation is unlikely to be significant because of the low water solubility of this product. |
| <b>12.4 Mobility in soil</b>                     | Not considered mobile.                                                                             |
| <b>12.5 Results of PBT &amp; vPvB assessment</b> | Not applicable                                                                                     |

**12.6 Other adverse effects**

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation<br>Annex XIV<br>Substances of very high concern                             | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| Revision comments                                                                                                                                                                                                                                                                                      |                                                                                                                 |
| Legend to abbreviations                                                                                                                                                                                                                                                                                |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Hydraulic Oil 150

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                        |
|---------------------|------------------------|
| Product name        | ARKO Hydraulic Oil 150 |
| Product description | Hydraulic Oil          |
| Product type        | Industrial Oil         |
| MARPOL Annex-1      | *****                  |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -6 °C (ASTM D 97)                                          |
| Flash point                                     | > 230 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | > 300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 150 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %               |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                                   |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                                       | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                                       | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| <p>*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)</p> <p>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).</p> |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                              |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                                          |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                                    |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                               | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                               | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                                         | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                              | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                              | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                               | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                               | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                              | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                             | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                             | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                             | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                               | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# **ARKO Hydraulic Oil HLP 32 N**

|                                                           |                                                                                                                                                                                                                                                                       |   |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Section 1: Identification of the Substance / Mixture      |                                                                                                                                                                                                                                                                       |   |
| 1.1 Product identifier                                    |                                                                                                                                                                                                                                                                       |   |
| Product name                                              | ARKO Hydraulic Oil HLP 32 N                                                                                                                                                                                                                                           |   |
| Product description                                       | HLP Hydraulic Oil                                                                                                                                                                                                                                                     |   |
| Product type                                              | Industrial Oil                                                                                                                                                                                                                                                        |   |
| MARPOL Annex-1                                            | *****                                                                                                                                                                                                                                                                 |   |
| 1.2 Identified uses                                       |                                                                                                                                                                                                                                                                       |   |
| Distribution of substance                                 | Industrial                                                                                                                                                                                                                                                            |   |
| Formulation & (re)packing of substance & mixtures         | Industrial                                                                                                                                                                                                                                                            |   |
| Manufacture of substance                                  | Industrial                                                                                                                                                                                                                                                            |   |
| Functional fluids                                         | Industrial                                                                                                                                                                                                                                                            |   |
| Section 2: Hazard Identification                          |                                                                                                                                                                                                                                                                       |   |
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight     | Health                                                                                                                                                                                                                                                                | 1 |
|                                                           | Flammability                                                                                                                                                                                                                                                          | 1 |
|                                                           | Reactivity                                                                                                                                                                                                                                                            | 0 |
|                                                           | Special                                                                                                                                                                                                                                                               | — |
| Section 3: Compostion / Information on Ingredients        |                                                                                                                                                                                                                                                                       |   |
| Product / Ingredient name                                 | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons.                                                                                                                                                        |   |
| Section 4: First Aid Measures                             |                                                                                                                                                                                                                                                                       |   |
| Inhalation exposure                                       | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                                                                                                                                    |   |
| Skin contact                                              | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water.If irritation occurs, call a physician.                                                                                                                              |   |
| Swallowing or other                                       | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested.Get medical advice.                                                                                                                                                 |   |
| Eye contact                                               | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                                                                                                                                     |   |
| Protection first-aiders                                   | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces.                                                                                                                 |   |
| Section 5: Fire Fighting Measures                         |                                                                                                                                                                                                                                                                       |   |
| 5.1 Extinguishing media                                   |                                                                                                                                                                                                                                                                       |   |
| Unsuitable extinguishing media                            | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface.                                                                                   |   |
| 5.2 Special hazards arising from the substance or mixture |                                                                                                                                                                                                                                                                       |   |
| Hazards from the substance or mixture                     | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |   |
| Hazardous thermal decomposition products                  | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |   |
| 5.3 Advice for firefighters                               |                                                                                                                                                                                                                                                                       |   |
| Special precautions for firefighters                      | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.                                                                           |   |

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -12 °C (ASTM D 97)                                         |
| Flash point                                     | > 196 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | >300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 32 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br><3 %               |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# ARKO Hydraulic Oil HLP 46 N

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                             |
|---------------------|-----------------------------|
| Product name        | ARKO Hydraulic Oil HLP 46 N |
| Product description | HLP Hydraulic Oil           |
| Product type        | Industrial Oil              |
| MARPOL Annex-1      | *****                       |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|              |              |   |
|--------------|--------------|---|
| 4-<br>Extrem | Health       | 1 |
| e3-<br>High  | Flammability | 1 |
| 2-Moderate   | Reactivity   | 0 |
| 1-Slight     | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face- piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7.1 Advice on general information – hygiene, storage</b>            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>7.2 Conditions for safe storage including any incompatibilities</b> | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight. |
| <b>7.3 Specific end use(s) – Recommendations</b>                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Section 8: Exposure Controls / Personal Protection

|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s). |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>8.1 Control parameters</b>                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Occupational exposure limits                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                                                                                                     | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                                                                                                        | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                                                                                             | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| <b>8.2 Exposure control<br/>Appropriate engineering controls</b>                                                                              | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Individual protection measures</b>                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hygiene measures                                                                                                                              | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Eye / face protection                                                                                                                         | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Skin protection</b>                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -12 °C (ASTM D 97)                                         |
| Flash point                                     | > 200 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | >300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 46 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br><3 %               |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|             |                                                   |
|-------------|---------------------------------------------------|
| Skin        | No known significant effects or critical hazards. |
| Eye         |                                                   |
| Respiratory |                                                   |

**Sensation**

|             |                                                   |
|-------------|---------------------------------------------------|
| Skin        | No known significant effects or critical hazards. |
| Respiratory |                                                   |

|              |                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------|
| Mutagenicity | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic. |
|--------------|----------------------------------------------------------------------------------------------------------------|

|                 |                                                                                  |
|-----------------|----------------------------------------------------------------------------------|
| Carcinogenicity | The base oil(s) in this product is based on an severely hydrotreated distillate. |
|-----------------|----------------------------------------------------------------------------------|

|                       |                                                                                                             |
|-----------------------|-------------------------------------------------------------------------------------------------------------|
| Reproductive toxicity | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction. |
|-----------------------|-------------------------------------------------------------------------------------------------------------|

|                                                    |                |
|----------------------------------------------------|----------------|
| Specific target organ toxicity – single exposure   | Not classified |
| Specific target organ toxicity – repeated exposure |                |

|                   |                                |
|-------------------|--------------------------------|
| Aspiration hazard | Aspiration hazard – Category 1 |
|-------------------|--------------------------------|

|                                          |               |
|------------------------------------------|---------------|
| Information on likely routes of exposure | Not available |
|------------------------------------------|---------------|

|                                       |  |
|---------------------------------------|--|
| <b>Potential acute health effects</b> |  |
|---------------------------------------|--|

|             |                                                   |
|-------------|---------------------------------------------------|
| Eye contact | Eye contact may cause redness and transient pain. |
|-------------|---------------------------------------------------|

|            |                                                                                              |
|------------|----------------------------------------------------------------------------------------------|
| Inhalation | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation. |
|------------|----------------------------------------------------------------------------------------------|

|              |                                                   |
|--------------|---------------------------------------------------|
| Skin contact | No known significant effects or critical hazards. |
|--------------|---------------------------------------------------|

|           |                                               |
|-----------|-----------------------------------------------|
| Ingestion | May be fatal if swallowed and enters airways. |
|-----------|-----------------------------------------------|

|                                         |  |
|-----------------------------------------|--|
| <b>Potential chronic health effects</b> |  |
|-----------------------------------------|--|

|         |                                                   |
|---------|---------------------------------------------------|
| General | No known significant effects or critical hazards. |
|---------|---------------------------------------------------|

|                 |                                                                                                                                      |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Carcinogenicity | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------|

|                |                                                   |
|----------------|---------------------------------------------------|
| Mutagenicity   | No known significant effects or critical hazards. |
| Teratogenicity |                                                   |
|                |                                                   |

|                           |  |
|---------------------------|--|
| Product / ingredient name |  |
| Fertility effects         |  |

|                                   |               |
|-----------------------------------|---------------|
| Other information Specific hazard | Not available |
|-----------------------------------|---------------|

**Section 12: Ecological Information**

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>12.1 Toxicity</b> | Not expected to be harmful to aquatic organisms. |
|----------------------|--------------------------------------------------|

|                                           |                               |
|-------------------------------------------|-------------------------------|
| <b>12.2 Persistence and degradability</b> | Not inherently biodegradable. |
|-------------------------------------------|-------------------------------|

|                                       |                                                                                                    |
|---------------------------------------|----------------------------------------------------------------------------------------------------|
| <b>12.3 Bioaccumulative potential</b> | Bioaccumulation is unlikely to be significant because of the low water solubility of this product. |
|---------------------------------------|----------------------------------------------------------------------------------------------------|

|                              |                        |
|------------------------------|------------------------|
| <b>12.4 Mobility in soil</b> | Not considered mobile. |
|------------------------------|------------------------|

|                                                  |                |
|--------------------------------------------------|----------------|
| <b>12.5 Results of PBT &amp; vPvB assessment</b> | Not applicable |
|--------------------------------------------------|----------------|

**12.6 Other adverse effects**

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|        |                                                                                                                                             |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan  | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea  | Existing Chemicals List (ECL) – Yes                                                                                                         |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| New Zealand                                                                                                                                                                                                                                                                                            | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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# **ARKO Hydraulic Oil HLP 68 N**

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                             |
|---------------------|-----------------------------|
| Product name        | ARKO Hydraulic Oil HLP 68 N |
| Product description | HLP Hydraulic Oil           |
| Product type        | Industrial Oil              |
| MARPOL Annex-1      | *****                       |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -12 °C (ASTM D 97)                                         |
| Flash point                                     | > 204 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                     |
|-------------------------------------------------------------------------|-------------------------------------|
| Solubility (water)                                                      | Insoluble in water                  |
| Partition coefficient (n-octanol/water)                                 | Not available                       |
| Decomposition temperature                                               | No data                             |
| Auto-ignition temperature                                               | >300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 68 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                             |
| Oxidising properties                                                    | No data                             |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br><3 %               |

### Section 10: Stability and Reactivity

|                                                |                                                                                                                                                                                                                                                                       |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10.1 Reactivity</b>                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| <b>10.2 Chemical stability</b>                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| <b>10.3 Possibility of hazardous reactions</b> | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| <b>10.4 Conditions to avoid</b>                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| <b>10.5 Incompatible materials</b>             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| <b>10.6 Hazardous decomposition products</b>   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                                  |  |
|--------------------------------------------------|--|
| <b>11.1 Information on toxicological effects</b> |  |
|--------------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                                   |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                                       | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                                       | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| <p>*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)</p> <p>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).</p> |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                              |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                                          |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                                    |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                               | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                               | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                                         | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                              | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                              | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                               | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                               | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                              | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                             | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                             | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                             | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                               | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

Disclaimer: Information contained in this material data sheet is believed to be reliable, but no representation, guarantee or warranties of any kind made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information content in the material datasheet is relevant to the product manufactured / handled or sold by, as the case may be, R K PETROLEUMS makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

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# **ARKO Hydraulic Oil HLP 100 N**

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                              |
|---------------------|------------------------------|
| Product name        | ARKO Hydraulic Oil HLP 100 N |
| Product description | HLP Hydraulic Oil            |
| Product type        | Industrial Oil               |
| MARPOL Annex-1      | *****                        |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|                                                       |              |   |
|-------------------------------------------------------|--------------|---|
| 4-<br>Extrem<br>e3-<br>High<br>2-Moderate<br>1-Slight | Health       | 1 |
|                                                       | Flammability | 1 |
|                                                       | Reactivity   | 0 |
|                                                       | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

|                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7.1 Advice on general information – hygiene, storage</b>            | Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>7.2 Conditions for safe storage including any incompatibilities</b> | Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight. |
| <b>7.3 Specific end use(s) – Recommendations</b>                       | Not available                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

|                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Occupational exposure limits                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Product / Ingredient name                                        | Distillates, mixture of hydrocarbons                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Exposure limits values                                           | AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].<br>AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m <sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m <sup>3</sup> 15 minutes. Form: mist and fume.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Recommended monitoring procedures                                | If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required. |
| <b>8.2 Exposure control<br/>Appropriate engineering controls</b> | Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

### Individual protection measures

|                       |                                                                                                                                                                                                                                                                                                |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hygiene measures      | Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse. |
| Eye / face protection | Recommended: Safety glasses with side shields.                                                                                                                                                                                                                                                 |

|                                                                         |                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Skin protection</b>                                                  |                                                                                                                                                                                                                                                                                                                      |
| Hand protection                                                         | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                                                         | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection                                                   | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection                                                  | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control                                          | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |
| <b>Section 9: Physical and Chemical Properties</b>                      |                                                                                                                                                                                                                                                                                                                      |
| Appearance                                                              | Clear                                                                                                                                                                                                                                                                                                                |
| Physical state                                                          | Liquid                                                                                                                                                                                                                                                                                                               |
| Colour                                                                  | Brownish                                                                                                                                                                                                                                                                                                             |
| Odor                                                                    | Petroleum odor                                                                                                                                                                                                                                                                                                       |
| Odour threshold                                                         | Not available                                                                                                                                                                                                                                                                                                        |
| pH                                                                      | Not applicable                                                                                                                                                                                                                                                                                                       |
| Pour point                                                              | < -9 °C (ASTM D 97)                                                                                                                                                                                                                                                                                                  |
| Flash point                                                             | > 210 °C                                                                                                                                                                                                                                                                                                             |
| Evaporation rate                                                        | Not available                                                                                                                                                                                                                                                                                                        |
| Flammability (solid, gas)                                               | Not available                                                                                                                                                                                                                                                                                                        |
| Flammability limits in air (lower), % by volume                         | Not available                                                                                                                                                                                                                                                                                                        |
| Flammability limits in air (upper), % by volume                         | Not available                                                                                                                                                                                                                                                                                                        |
| Vapour pressure                                                         | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010)                                                                                                                                                                                                                                                         |
| Density Solubility (ies)                                                | 0.88 max at 15 °C                                                                                                                                                                                                                                                                                                    |
| D                                                                       | Insoluble in water                                                                                                                                                                                                                                                                                                   |
| Partition coefficient (n-octanol/water)                                 | Not available                                                                                                                                                                                                                                                                                                        |
| Decomposition temperature                                               | No data                                                                                                                                                                                                                                                                                                              |
| Auto-ignition temperature                                               | > 300 °C                                                                                                                                                                                                                                                                                                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 100 cSt (ASTM D 445) (Typical Value)                                                                                                                                                                                                                                                                                 |
| Explosive properties                                                    | No data                                                                                                                                                                                                                                                                                                              |
| Oxidising properties                                                    | No data                                                                                                                                                                                                                                                                                                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %                                                                                                                                                                                                                                                                                               |
|                                                                         |                                                                                                                                                                                                                                                                                                                      |
|                                                                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                                                                           |
| <b>10.2 Chemical stability</b>                                          | Stable under normal conditions                                                                                                                                                                                                                                                                                       |
| <b>10.3 Possibility of hazardous reactions</b>                          | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                                                                  |
| <b>10.4 Conditions to avoid</b>                                         | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                                                                    |
| <b>10.5 Incompatible materials</b>                                      | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide,                                                                                                                                                                       |
| <b>10.6 Hazardous decomposition products</b>                            | H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds.                                                                                                                                                                                               |
| <b>SECTION 11: Toxicological Information</b>                            |                                                                                                                                                                                                                                                                                                                      |
| <b>11.1 Information on toxicological effects</b>                        |                                                                                                                                                                                                                                                                                                                      |

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                           |                                                                                                                                      |
|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                                      | No known significant effects or critical hazards.                                                                                    |
| Eye                                                       |                                                                                                                                      |
| Respiratory                                               |                                                                                                                                      |
| <b>Sensation</b>                                          |                                                                                                                                      |
| Skin                                                      | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                               |                                                                                                                                      |
| <b>Mutagenicity</b>                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| <b>Carcinogenicity</b>                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| <b>Reproductive toxicity</b>                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| <b>Specific target organ toxicity – single exposure</b>   | Not classified                                                                                                                       |
| <b>Specific target organ toxicity – repeated exposure</b> |                                                                                                                                      |
| <b>Aspiration hazard</b>                                  | Aspiration hazard – Category 1                                                                                                       |
| <b>Information on likely routes of exposure</b>           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>                     |                                                                                                                                      |
| Eye contact                                               | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                                | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                              | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                                 | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>                   |                                                                                                                                      |
| General                                                   | No known significant effects or critical hazards.                                                                                    |
| <b>Carcinogenicity</b>                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|        |                                                                                                                                             |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan  | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |

|                                                                                                                                                                                                                                                                                                                   |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Korea                                                                                                                                                                                                                                                                                                             | Existing Chemicals List (ECL) – Yes                                                                             |
| New Zealand                                                                                                                                                                                                                                                                                                       | New Zealand Inventory – Yes                                                                                     |
| Philippines                                                                                                                                                                                                                                                                                                       | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                                       | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| <p>*A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)</p> <p>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).</p> |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                              |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                                          |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                                    |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                               | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                               | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                                         | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                              | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                              | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                               | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                               | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                              | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                             | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                             | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                             | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                               | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

Disclaimer: Information contained in this material data sheet is believed to be reliable, but no representation, guarantee or warranties of any kind made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer / seller to ensure that the information content in the material datasheet is relevant to the product manufactured / handled or sold by, as the case may be. R K PETROLEUMS makes no warranties expressed or implied in respect of the adequacy of this document for any particular purpose.

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# **ARKO Hydraulic Oil HLP 150 N**

## Section 1: Identification of the Substance / Mixture

### 1.1 Product identifier

|                     |                              |
|---------------------|------------------------------|
| Product name        | ARKO Hydraulic Oil HLP 150 N |
| Product description | HLP Hydraulic Oil            |
| Product type        | Industrial Oil               |
| MARPOL Annex-1      | *****                        |

### 1.2 Identified uses

|                                                   |            |
|---------------------------------------------------|------------|
| Distribution of substance                         | Industrial |
| Formulation & (re)packing of substance & mixtures | Industrial |
| Manufacture of substance                          | Industrial |
| Functional fluids                                 | Industrial |

## Section 2: Hazard Identification

|              |              |   |
|--------------|--------------|---|
| 4-<br>Extrem | Health       | 1 |
| e3-<br>High  | Flammability | 1 |
| 2-Moderate   | Reactivity   | 0 |
| 1-Slight     | Special      | — |

## Section 3: Composition / Information on Ingredients

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| Product / Ingredient name | CAS No.: Not applicable for blended product.<br>Distillates (Petroleum) mixture of hydro-treated hydrocarbons. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

## Section 4: First Aid Measures

|                         |                                                                                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation exposure     | Remove to fresh air & provide oxygen, if breathing is difficult. Contact physician                                                                    |
| Skin contact            | Remove contaminated clothing. Flush skin with water. Wash skin thoroughly with mild soap & water. If irritation occurs, call a physician.             |
| Swallowing or other     | Do not induce vomiting. In general no treatment is necessary unless large quantities are ingested. Get medical advice.                                |
| Eye contact             | Rinse continuously with water for several minutes. Get medical attention, if irritation persists.                                                     |
| Protection first-aiders | Disconnecting electrical supply. Ensure adequate ventilation and check that a safe and breathing area is available before entry into confined spaces. |

## Section 5: Fire Fighting Measures

### 5.1 Extinguishing media

|                                |                                                                                                                                                                                     |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unsuitable extinguishing media | Use dry powder, foam, carbon dioxide. Do not use direct water and wet chemicals, or water on the burning product. They may spread the fire. Use foam simultaneously on the surface. |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### 5.2 Special hazards arising from the substance or mixture

|                                          |                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hazards from the substance or mixture    | Flammable liquids in pressurised containers may rupture and when exposed to heat, creating a highly flammable vapour cloud.                                                                                                                                           |
| Hazardous thermal decomposition products | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |

### 5.3 Advice for firefighters

|                                      |                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Special precautions for firefighters | Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Special protective equipment for firefighters

Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

**Section 6: Accidental Release Measures****6.1 Personal precautions, protective equipment and emergency procedures**

## For non-emergency personnel

Keep non-involved personnel away from the area of spillage.  
Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Stop leak if safe to do so. Avoid direct contact with the product. Stay upwind / keep distance from source. In case of large spillages, alert occupants in downwind areas.  
Eliminate all ignition sources if safe to do so. Spillages of limited amounts of product, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which will presumably limit the exposure to dangerous concentrations.  
Note : Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave / current direction and speed) may significantly influence the choice of appropriate actions.

## For emergency responders

For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.  
Small spillages: Normal antistatic working clothes are usually adequate.  
Large spillages: Full body suit of chemically resistant and thermal resistant material should be used. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.  
Note: Gloves made of PVA are not water-resistant, and are not suitable for emergency use. Safety helmet, antistatic non-skid safety shoes or boots. Goggles and / or face shield, if splashes or contact with eyes is possible or anticipated.  
Respiratory Protection : A half or full-face respirator with filter(s) for organic vapours (and when applicable for H<sub>2</sub>S) a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

**6.2 Environmental precautions**

Prevent product from entering sewers, rivers or other bodies of water. If necessary dike the product with dry earth, sand or similar non-combustible materials. In case of soil contamination, remove contaminated soil and treat in accordance with local regulations.  
In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. Collect spilled product by absorbing with specific floating absorbents.  
If possible, large spillages in open waters should be contained with floating barriers or other mechanical means. If this is not possible, control the spreading of the spillage, and collect the product by skimming or other suitable mechanical means. The use of dispersants should be advised by an expert, and, if required, approved by local authorities.

**6.3 Methods and material for containment and cleaning up**

## Small spill

Stop leak if without risk. Absorb spilled product with suitable non-combustible materials.

## Large spill

Large spillages may be cautiously covered with foam, if available, to limit vapour cloud formation. Do not use water jet. When inside buildings or confined spaces, ensure adequate ventilation. Transfer collected product and other contaminated materials to suitable containers for recovery or safe disposal.

**6.4 Reference to other sections**

See Section 1: For emergency contact information.  
See Section 8: For information on appropriate personal

protective equipment. See Section 13: For additional waste treatment information.

## Section 7: Handling and Storage

### 7.1 Advice on general information – hygiene, storage

Obtain special instructions before use. Keep away from heat / sparks / open flames/hot surfaces. No smoking. Use and store only outdoors or in a well-ventilated area. Hazard of slipping on spilt product. Avoid release to the environment.

### 7.2 Conditions for safe storage including any incompatibilities

Storage area layout, tank design, equipment and operating procedures must comply with the relevant regional, national or local legislation. Storage installations should be designed with adequate bunds in case of leaks or spills. Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Store separately from oxidising agents. Keep only in the original container or in a suitable container for this kind of product. Keep container tightly closed and sealed until ready for use. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Empty containers may contain harmful, flammable / combustible or explosive residue or vapours. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Protect from sunlight.

### 7.3 Specific end use(s) – Recommendations

Not available

## Section 8: Exposure Controls / Personal Protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

#### Occupational exposure limits

#### Product / Ingredient name

Distillates, mixture of hydrocarbons

#### Exposure limits values

AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume [Air contaminant].  
AFS 2015:7 (Sweden, 12/2015). TWA: 1 mg/m<sup>3</sup> 8 hours. Form: mist and fume STEL: 3 mg/m<sup>3</sup> 15 minutes. Form: mist and fume.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres – Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres – Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres – General requirements for the performance of procedures for the measurement of chemical agents). Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

### 8.2 Exposure control Appropriate engineering controls

Mechanical ventilation and local exhaust will reduce exposure via the air. Use oil resistant material in construction of handling equipment. Store under recommended conditions and if heated, temperature control equipment should be used to avoid overheating.

## Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location. Wash contaminated clothing before reuse.

#### Eye / face protection

Recommended: Safety glasses with side shields.

#### Skin protection

|                                |                                                                                                                                                                                                                                                                                                                      |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hand protection                | 4 – 8 hours (breakthrough time): nitrile rubber.                                                                                                                                                                                                                                                                     |
| Body protection                | Wear protective clothing if there is a risk of skin contact. Change contaminated clothes at the end of working shift.                                                                                                                                                                                                |
| Other skin protection          | Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.                                                                                                    |
| Respiratory protection         | Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.            |
| Environmental exposure control | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

### Section 9: Physical and Chemical Properties

|                                                 |                                                              |
|-------------------------------------------------|--------------------------------------------------------------|
| Appearance                                      | Clear                                                        |
| Physical state                                  | Liquid                                                       |
| Colour                                          | Brownish                                                     |
| Odor                                            | Petroleum odor                                               |
| Odour threshold                                 | Not available                                                |
| pH                                              | Not applicable                                               |
| Pour point                                      | < -9 °C (ASTM D 97)                                          |
| Flash point                                     | > 210 °C                                                     |
| Evaporation rate                                | Not available                                                |
| Flammability (solid, gas)                       | Not available                                                |
| Flammability limits in air (lower), % by volume | Not available                                                |
| Flammability limits in air (upper), % by volume | Not available                                                |
| Vapour pressure                                 | ≤ 0,1 hPa (20 °C) (Mineral oil, ASTM D 5191) (CONCAWE, 2010) |
| Density Solubility (ies)                        | 0.88 max at 15 °C                                            |

|                                                                         |                                      |
|-------------------------------------------------------------------------|--------------------------------------|
| Solubility (water)                                                      | Insoluble in water                   |
| Partition coefficient (n-octanol/water)                                 | Not available                        |
| Decomposition temperature                                               | No data                              |
| Auto-ignition temperature                                               | > 300 °C                             |
| Kinematic viscosity at 40 °C (104 °F)                                   | 150 cSt (ASTM D 445) (Typical Value) |
| Explosive properties                                                    | No data                              |
| Oxidising properties                                                    | No data                              |
| DMSO extractable compounds for base oil substance(s) according to IP346 | Not available<br>< 3 %               |

### Section 10: Stability and Reactivity

|                                         |                                                                                                                                                                                                                                                                       |
|-----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1 Reactivity                         | No specific test data related to reactivity available for this product or its ingredients.                                                                                                                                                                            |
| 10.2 Chemical stability                 | Stable under normal conditions                                                                                                                                                                                                                                        |
| 10.3 Possibility of hazardous reactions | Under normal conditions of storage and use, hazardous reactions will not occur.<br>Oxidising agent.                                                                                                                                                                   |
| 10.4 Conditions to avoid                | Keep away from extreme heat and oxidising agents.                                                                                                                                                                                                                     |
| 10.5 Incompatible materials             | Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates, gases, including carbon monoxide, H <sub>2</sub> S, SO <sub>x</sub> (sulphur oxides) or sulphuric acid and unidentified organic and inorganic compounds. |
| 10.6 Hazardous decomposition products   |                                                                                                                                                                                                                                                                       |

### SECTION 11: Toxicological Information

|                                           |  |
|-------------------------------------------|--|
| 11.1 Information on toxicological effects |  |
|-------------------------------------------|--|

**Acute toxicity**

| Product / ingredient name                             | Result                           | Species | Dose         | Exposure |
|-------------------------------------------------------|----------------------------------|---------|--------------|----------|
| Distillate (Petroleum), hydrotreated heavy paraffinic | LC 50 Inhalation dusts and mists | Rat     | >2.18mg/l    | 4 hours  |
|                                                       | LD 50 Dermal                     | Rabbit  | > 5000 mg/kg | —        |
|                                                       | LD 50 Oral                       | Rat     | >15000 mg/kg | —        |

**Irritation / corrosion**

|                                                    |                                                                                                                                      |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Eye                                                |                                                                                                                                      |
| Respiratory                                        |                                                                                                                                      |
| <b>Sensation</b>                                   |                                                                                                                                      |
| Skin                                               | No known significant effects or critical hazards.                                                                                    |
| Respiratory                                        |                                                                                                                                      |
| Mutagenicity                                       | No data available to indicate product or any components present greater than 0.1 % are multigene or genotoxic.                       |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate.                                                     |
| Reproductive toxicity                              | The product should not be regarded as a carcinogen. Contains no ingredient listed as toxic to reproduction.                          |
| Specific target organ toxicity – single exposure   | Not classified                                                                                                                       |
| Specific target organ toxicity – repeated exposure |                                                                                                                                      |
| Aspiration hazard                                  | Aspiration hazard – Category 1                                                                                                       |
| Information on likely routes of exposure           | Not available                                                                                                                        |
| <b>Potential acute health effects</b>              |                                                                                                                                      |
| Eye contact                                        | Eye contact may cause redness and transient pain.                                                                                    |
| Inhalation                                         | Inhalation of oil mist or vapours at elevated temperatures may cause respiratory irritation.                                         |
| Skin contact                                       | No known significant effects or critical hazards.                                                                                    |
| Ingestion                                          | May be fatal if swallowed and enters airways.                                                                                        |
| <b>Potential chronic health effects</b>            |                                                                                                                                      |
| General                                            | No known significant effects or critical hazards.                                                                                    |
| Carcinogenicity                                    | The base oil(s) in this product is based on an severely hydrotreated distillate. The product should not be regarded as a carcinogen. |

**Mutagenicity****Teratogenicity**

Product / ingredient name

**Fertility effects**

Other information Specific hazard

**Section 12: Ecological Information****12.1 Toxicity****12.2 Persistence and degradability****12.3 Bioaccumulative potential****12.4 Mobility in soil****12.5 Results of PBT & vPvB assessment****12.6 Other adverse effects**

No known significant effects or critical hazards.

Not available

Not expected to be harmful to aquatic organisms.

Not inherently biodegradable.

Bioaccumulation is unlikely to be significant because of the low water solubility of this product.

Not considered mobile.

Not applicable

Insoluble in water. Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

**Section 13: Disposal Considerations**

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Methods of disposal                         | Where possible (e.g. in the absence of relevant contamination), recycling of used substance is feasible and recommended. This substance can be burned or incinerated, subject to national/local authorisations, relevant contamination limits, safety regulations and air quality legislation. Contaminated or waste substance (not directly recyclable): Disposal can be carried out directly, or by delivery to qualified waste handlers. National legislation may identify a specific organisation, and/or prescribe composition limits and methods for recovery or disposal |
| Hazardous waste                                     | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| European waste catalogue (EWC) Waste Code 13 03 07* | Waste designation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Packaging                                           | Mineral-based non-chlorinated insulating and heat transmission oils.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Methods of disposal                                 | The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.                                                                                                                                                                                                                                                                                                                                                                                |

**Section 14: Transport Information****International transport regulations**

|                                        | ADR / RID     | ADN           | IMO / IMDG Classification | ICAO / IATA Classification |
|----------------------------------------|---------------|---------------|---------------------------|----------------------------|
| <b>14.1 UN number</b>                  | Not regulated | Not regulated | Not regulated             | Not regulated              |
| <b>14.2 UN proper shipping name</b>    | —             | —             | —                         | —                          |
| <b>14.3 Transport hazard class(es)</b> | —             | —             | —                         | —                          |
| <b>14.4 Packing group</b>              | —             | —             | —                         | —                          |
| <b>14.5 Environmental hazards</b>      | No            | No            | No                        | No                         |
| Additional Information                 | —             | —             | —                         | —                          |

**14.6 Special precautions for user oils****14.7 Transport in bulk according to Annex I of MARPOL 73/78 and the IBC Code****Section 15: Regulatory Information****15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)**

|                                                                                                                                     |                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
| Annex XIV – List of substances subject to authorisation Annex XIV Substances of very high concern                                   | None of the components are listed                                                |
| Annex XVII – Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles. | Not applicable                                                                   |
| <b>International Lists National Inventory</b>                                                                                       | <b>Inventory name</b>                                                            |
| Australia                                                                                                                           | Australian Inventory of Chemical Substances (AICS) – Yes                         |
| Canada                                                                                                                              | Domestic Substances List (DSL) – Yes<br>Non-Domestic Substances List (NDSL) – No |
| China                                                                                                                               | Inventory of Existing Chemical Substances in China (IECSC) – Yes                 |

|             |                                                                                                                                             |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| Europe      | European Inventory of Existing Commercial Chemical Substances (EINECS) – Yes<br>European List of Notified Chemical Substances (ELINCS) – No |
| Japan       | Inventory of Existing and New Chemical Substances (ENCS) – Yes                                                                              |
| Korea       | Existing Chemicals List (ECL) – Yes                                                                                                         |
| New Zealand | New Zealand Inventory – Yes                                                                                                                 |

|                                                                                                                                                                                                                                                                                                        |                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Philippines                                                                                                                                                                                                                                                                                            | Philippine Inventory of Chemicals and Chemical Substances (PICCS) – Yes                                         |
| United States & Puerto Rico                                                                                                                                                                                                                                                                            | Toxic Substances Control Act (TSCA) Inventory – Yes                                                             |
| *A “Yes” indicates that all components of this product comply with the inventory requirements administered by the governing country(s)<br>A “No” indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s). |                                                                                                                 |
| <b>Section 16: Other Information</b>                                                                                                                                                                                                                                                                   |                                                                                                                 |
| <b>Revision comments</b>                                                                                                                                                                                                                                                                               |                                                                                                                 |
| <b>Legend to abbreviations</b>                                                                                                                                                                                                                                                                         |                                                                                                                 |
| ADR                                                                                                                                                                                                                                                                                                    | European agreement concerning the international carriage of dangerous good by road.                             |
| RID                                                                                                                                                                                                                                                                                                    | Regulations agreement concerning the international carriage of dangerous good by rail.                          |
| IMDG Code                                                                                                                                                                                                                                                                                              | International Maritime Dangerous Goods Code.                                                                    |
| ICAO                                                                                                                                                                                                                                                                                                   | International Civil Aviation Organization.                                                                      |
| IATA                                                                                                                                                                                                                                                                                                   | International Air Transport Association.                                                                        |
| GHS                                                                                                                                                                                                                                                                                                    | Globally Harmonized System of Classification and Labeling of Chemicals.                                         |
| CLP                                                                                                                                                                                                                                                                                                    | Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008].                              |
| SCBA                                                                                                                                                                                                                                                                                                   | Self-Contained Breathing Apparatus.                                                                             |
| REACH                                                                                                                                                                                                                                                                                                  | Registration, Evaluation, Authorization and Restriction of Chemicals Regulation[Regulation (EC) No. 1907/2006]. |
| LC 50                                                                                                                                                                                                                                                                                                  | Median lethal concentration.                                                                                    |
| LD 50                                                                                                                                                                                                                                                                                                  | Median lethal dose.                                                                                             |
| PBT                                                                                                                                                                                                                                                                                                    | Persistent, Bio accumulative and Toxic.                                                                         |

Regulation (EC) no 1907/2006, Annex II as Amended by Commission Regulation (EU) 2015/830

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- |                           |                       |
|---------------------------|-----------------------|
| ❖ LUBRICATING OILS        | ❖ PETROLEUM JELLY     |
| ❖ L.D.O & FURNACE OIL     | ❖ WAXES               |
| ❖ RUBBER PROCESS OILS     | ❖ INDUSTRIAL SOLVENTS |
| ❖ BASE OILS               | ❖ PLASTISIZERS        |
| ❖ ALL TYPES OF RAW RUBBER |                       |

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