SAFETY DATA SHEET

Valvoline™ AW 32 HYDRAULIC OIL
VV041

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: VALVOLINE™ AW 32 HYDRAULIC OIL

Recommended use of the chemical and restrictions on use

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

GHS Label element
This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture
Chemical nature: Defatter

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATE</td>
<td>64742-55-8</td>
<td>Asp. Tox. 1; H304</td>
<td>4.64</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : No hazards which require special first aid measures.

If inhaled : If breathed in, move person into fresh air. If unconscious place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is recommended that exposed areas be cleaned by washing with soap and water.

In case of eye contact : Remove contact lenses. Protect unharmed eye.

If swallowed : Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Acute aspiration of large amounts of oil-laden material may produce a serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Repeated aspiration of small quantities of mineral oil can produce chronic inflammation of the lungs (i.e. lipoid pneumonia) that may progress to pulmonary fibrosis. Symptoms are often subtle and radiological changes appear worse than clinical abnormalities. Occasionally, persistent cough, irritation of the upper respiratory tract, shortness of breath with exertion, fever, and bloody sputum occur. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea) irritation (nose, throat, airways)

Notes to physician : No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray
Valvoline™ AW 32 Hydraulic Oil

**Specific hazards during firefighting:**
Do not allow run-off from fire fighting to enter drains or water courses.

**Hazardous combustion products:**
carbon dioxide and carbon monoxide
hydrocarbons

**Specific extinguishing methods:**
Product is compatible with standard fire-fighting agents.

**Further information:**
Standard procedure for chemical fires.

**Special protective equipment for firefighters:**
In the event of fire, wear self-contained breathing apparatus.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:**
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

**Environmental precautions:**
Prevent further leakage or spillage if safe to do so.

**Methods and materials for containment and cleaning up:**
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

**Other information:**
Comply with all applicable federal, state, and local regulations.

### SECTION 7. HANDLING AND STORAGE

**Advice on safe handling:**
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.

**Conditions for safe storage:**
Electrical installations / working materials must comply with the technological safety standards.

**Materials to avoid:**
No materials to be especially mentioned.
SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYDROTREATED LIGHT PARAFFINIC DISTILLATE</td>
<td>64742-55-8</td>
<td>REL</td>
<td>5 mg/m3 Mist.</td>
<td>NIOSH/GUIDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m3 Mist.</td>
<td>NIOSH/GUIDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>5 mg/m3 Mist.</td>
<td>OSHA_TRA</td>
</tr>
</tbody>
</table>

Engineering measures: General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection: No personal respiratory protective equipment normally required.

Eye protection: Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection: Wear as appropriate:
- Safety shoes
- Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures: General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Colour</th>
<th>Odour</th>
<th>Odour Threshold</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>liquid</td>
<td>amber</td>
<td>oily</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Melting point/freezing point : No data available

Boiling point/boiling range : > 425 °F / 218 °C (1013 hPa)

Flash point : > 390 °F / > 199 °C
Method: Cleveland open cup

Evaporation rate : > 1
Ethyl Ether

Flammability (solid, gas) : No data available

Upper explosion limit : 6 % (V)
Calculated Explosive Limit

Lower explosion limit : 1 % (V)
Calculated Explosive Limit

Vapour pressure : 0.0133333 hPa (21.11 °C)
Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : No data available

Density : 0.863 g/cm³ (15.56 °C)

Solubility(ies)
Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : 30 - 35 mm²/s (40 °C)

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.
Possibility of hazardous reactions: Product will not undergo hazardous polymerization.

Conditions to avoid: excessive heat

Incompatible materials: Strong oxidizing agents

Hazardous decomposition products: carbon dioxide and carbon monoxide, Hydrocarbons

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:
- Inhalation
- Skin contact
- Eye Contact
- Ingestion

Acute toxicity:
Not classified based on available information.

Skin corrosion/irritation:
Not classified based on available information.

Product:
Result: Repeated exposure may cause skin dryness or cracking.

Components:
HYDROTREATED LIGHT PARAFFINIC DISTILLATE:
Result: Mildly irritating to skin

Serious eye damage/eye irritation:
Not classified based on available information.

Product:
Remarks: Unlikely to cause eye irritation or injury.

Components:
HYDROTREATED LIGHT PARAFFINIC DISTILLATE:
Result: Mildly irritating to eyes

Respiratory or skin sensitisation:
Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Germ cell mutagenicity:
Not classified based on available information.

Carcinogenicity:
Not classified based on available information.

Reproductive toxicity:
Not classified based on available information.

STOT - single exposure:
Not classified based on available information.
STOT - repeated exposure
Not classified based on available information.
Aspiration toxicity
Not classified based on available information.
Product:
No aspiration toxicity classification

Components:
HYDROTREATED LIGHT PARAFFINIC DISTILLATE:
May be fatal if swallowed and enters airways.

Further information
Product:
Remarks: No data available

Carcinogenicity:
IARC
No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available
Persistence and degradability
No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Other adverse effects
No data available

Product:
Additional ecological information: No data available
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
General advice: Dispose of in accordance with all applicable local, state and federal regulations.
Contaminated packaging: Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International transport regulations

<table>
<thead>
<tr>
<th>REGULATION</th>
<th>ID NUMBER</th>
<th>PROPER SHIPPING NAME</th>
<th>*HAZARD CLASS</th>
<th>SUBSIDIARY HAZARDS</th>
<th>PACKING GROUP</th>
<th>MARINE POLLUTANT / LTD. QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. DOT - ROAD</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFR_RAIL_C</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S. DOT - INLAND WATERWAYS</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG ROAD_C</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG_RAIL_C</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TDG_INWT_C</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL MARITIME DANGEROUS GOODS</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO</td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

MX_DG

Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

| Marine pollutant | no |

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

SECTION 15. REGULATORY INFORMATION

SARA 311/312 Hazards : No SARA Hazards

SARA 313 Component(s) SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know
HEAVY PARAFFINIC DISTILLATE 64742-54-7

HEAVY PARAFFINIC DISTILLATE 64742-54-7 90.00 - 100.00 %

HYDROTREATED LIGHT PARAFFINIC DISTILLATE 64742-55-8 1.00 - 5.00 %

New Jersey Right To Know
HEAVY PARAFFINIC DISTILLATE 64742-54-7

HEAVY PARAFFINIC DISTILLATE 64742-54-7 90.00 - 100.00 %

HYDROTREATED LIGHT PARAFFINIC DISTILLATE 64742-55-8 1.00 - 5.00 %

California Prop 65

Proposition 65 warnings are not required for this product based on the results of a risk assessment.

The components of this product are reported in the following inventories:
TSCA : On TSCA Inventory
SAFETY DATA SHEET

Revision Date: 07/31/2016
Print Date: 11/1/2016
SDS Number: R0074103

VALVOLINE™ AW 32 HYDRAULIC OIL
VV041

Version: 1.1

DSL : All components of this product are on the Canadian DSL.
AUSTR : On the inventory, or in compliance with the inventory
ENCS : On the inventory, or in compliance with the inventory
KECL : On the inventory, or in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory

Inventories
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 07/31/2016

NFPA:          HMIS III:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Health</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Special hazard.

0 = not significant, 1 = Slight, 2 = Moderate, 3 = High, 4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification
 Combustible Liquid Class IIIICombustible Liquid Class IIIB

Full text of H-Statements referred to under sections 2 and 3.
H304 May be fatal if swallowed and enters airways.

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

10 / 11
The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-825-8654).

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet:
- ACGIH : American Conference of Industrial Hygienists
- BEI : Biological Exposure Index
- CAS : Chemical Abstracts Service (Division of the American Chemical Society).
- CMR : Carcinogenic, Mutagenic or Toxic for Reproduction
- FG : Food grade
- GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
- H-statement : Hazard Statement
- IATA : International Air Transport Association.
- IATA-DGR : Dangerous Goods Regulation by the “International Air Transport Association” (IATA).
- ICAO : International Civil Aviation Organization
- ICAO-TI (ICAO) : Technical Instructions by the “International Civil Aviation Organization”
- IMDG : International Maritime Code for Dangerous Goods
- ISO : International Organization for Standardization
- logPow : octanol-water partition coefficient
- LCxx : Lethal Concentration, for xx percent of test population
- LDxx : Lethal Dose, for xx percent of test population.
- ICxx : Inhibitory Concentration for xx of a substance
- Ecxx : Effective Concentration of xx
- N.O.S.: Not Otherwise Specified
- OECD : Organization for Economic Co-operation and Development
- OEL : Occupational Exposure Limit
- P-Statement : Precautionary Statement
- PBTK : Persistent, Bioaccumulative and Toxic
- PPE : Personal Protective Equipment
- STEL : Short-term exposure limit
- STOT : Specific Target Organ Toxicity
- TLV : Threshold Limit Value
- TWA : Time-weighted average
- vPvB : Very Persistent and Very Bioaccumulative
- WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act
DOT : Department of Transportation
FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act
HMIRC : Hazardous Materials Information Review Commission
HMIS : Hazardous Materials Identification System
NFPA : National Fire Protection Association
NIOSH : National Institute for Occupational Safety and Health
OSHA : Occupational Safety and Health Administration
PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System