SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: VALVOLINE™ AW 46 HYDRAULIC OIL

Recommended use of the chemical and restrictions on use

Details of the supplier of the safety data sheet
Valvoline LLC
3499 Blazer Parkway
Lexington, KY 40509
United States of America
SDS@valvoline.com

Emergency telephone number
1-800-VALVOLINE

Regulatory Information Number
1-800-TEAMVAL

Product Information
1-800-TEAMVAL

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
Chemical nature: Static Accumulator

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-</td>
<td>72623-87-1</td>
<td>Asp. Tox. 1; H304</td>
<td>1.06</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
Foam
Carbon dioxide (CO2)
Dry chemical

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>Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based</td>
<td>72623-87-1</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_TRAINS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³ Mist.</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m³ Mist.</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ Inhalable fraction.</td>
<td>ACGIHLIS_P</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

Physical state: liquid

Odour: No data available
Odour Threshold : No data available
pH : No data available
Melting point/freezing point : No data available
Boiling point/boiling range : > 425 °F / 218 °C (1013.33 hPa)
Flash point : > 390 °F / > 199 °C
Method: Cleveland open cup
Evaporation rate : 1 Ethyl Ether
Flammability (solid, gas) : No data available
Flammability (liquids) : Static Accumulating liquid
Flammability (liquids) :
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 : 0.8686 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 : 42 - 50 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.
Incompatible materials : Strong oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity
Not classified based on available information.
Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Acute oral toxicity : LD 50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 5.58 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: Not classified as acutely toxic by inhalation under GHS.
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD 50 (Rabbit): > 5,000 mg/kg
Remarks: No mortality observed at this dose.

Skin corrosion/irritation
Not classified based on available information.
Product:
Result: Repeated exposure may cause skin dryness or cracking.

Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Species: Rabbit
Result: Not irritating to skin

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

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

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Species: Rabbit
Result: Not irritating to eyes

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

**Components:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
Test Type: Buehler Test
Species: Guinea pig
Assessment: Does not cause skin sensitisation.

**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:**
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:
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

Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:

Toxicity to fish
- LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l
  - Exposure time: 96 h
  - Test Type: static test
  - Test substance: WAF
  - Method: OECD Test Guideline 203
  - Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates
- EL50 (Daphnia magna (Water flea)): > 10,000 mg/l
  - Exposure time: 48 h
  - Test Type: static test
  - Test substance: WAF
  - Method: OECD Test Guideline 202

Toxicity to algae
- NOEL (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
  - End point: Growth inhibition
  - Exposure time: 72 h
  - Test Type: static test
  - Test substance: WAF
  - Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)
- NOELR (Oncorhynchus mykiss (rainbow trout)): Calculated >= 1,000 mg/l
  - Exposure time: 14 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
- NOEL (Daphnia (water flea)): 10 mg/l
  - Exposure time: 21 d
  - Test substance: WAF
  - Method: OECD Test Guideline 211

Persistence and degradability

Components:
Lubricating Oils (Petroleum), C20-50, Hydrotreated Neutral Oil-Based:

Biodegradability
- Result: Not readily biodegradable.
  - Biodegradation: 2 - 4 %
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301B
Bioaccumulative potential

**Components:**
No data available

**Mobility in soil**
**Components:**
No data available

**Other adverse effects**
No data available

**Product:**
Additional ecological information : No data available

**Components:**

---

**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**

**REGULATION**

<table>
<thead>
<tr>
<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><strong>U.S. DOT - ROAD</strong></td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CFR_RAIL_C</strong></td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>U.S. DOT - INLAND WATERWAYS</strong></td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TDG ROAD_C</strong></td>
<td></td>
<td>Not dangerous goods</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TDG_RAIL_C
Not dangerous goods

### TDG_INWT_C
Not dangerous goods

### INTERNATIONAL MARITIME DANGEROUS GOODS
Not dangerous goods

### INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO
Not dangerous goods

### INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER
Not dangerous goods

### MX_DG
Not dangerous goods

*ORM = ORM-D, CBL = COMBUSTIBLE LIQUID

<table>
<thead>
<tr>
<th>Marine pollutant</th>
<th>no</th>
</tr>
</thead>
</table>

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)**

<table>
<thead>
<tr>
<th>Component(s)</th>
<th>CAS Number</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAVY PARAFFINIC DISTILLATE</td>
<td>64742-54-7</td>
<td>90.00 - 100.00 %</td>
</tr>
</tbody>
</table>

**Pennsylvania Right To Know**

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

**New Jersey Right To Know**

| HEAVY PARAFFINIC DISTILLATE | 64742-54-7 | 90.00 - 100.00 % |
| Lubricating Oils (Petroleum), C20-50, | 72623-87-1 | 1.00 - 5.00 % |
Hydrotreated Neutral Oil-Based

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
- **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), KECL (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

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**SECTION 16. OTHER INFORMATION**

Further information
Revision Date: 07/31/2016

<table>
<thead>
<tr>
<th>NFPA:</th>
<th>HMIS III:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>HEALTH</td>
</tr>
<tr>
<td>Health</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
</tbody>
</table>

Special hazard.

NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class III B

Full text of H-Statements referred to under sections 2 and 3.
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.

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
PBT : 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