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GHS classification in accordance with the Hazardous Products Regulations

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier**

Trade name : ZEREX™ DEX-COOL®  
Antifreeze Coolant

<p><b>Details of the supplier of the safety data sheet</b> Valvoline Canada Corp 905 Winston Churchill Blvd Mississauga ON L5J 4P2 Canada 1-800-TEAMVAL</p>	<p><b>Emergency telephone number</b> 1-800-VALVOLINE (1-800-825-8654)</p> <p><b>Regulatory Information Number</b> 1-800-TEAMVAL</p> <p><b>Product Information</b> 1-800-TEAMVAL</p>
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**SECTION 2. HAZARDS IDENTIFICATION**

**GHS Classification**

Acute toxicity (Oral) : Category 4  
Reproductive toxicity : Category 2  
Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Kidney, Liver)

**GHS label elements**

Hazard pictograms : 

Signal word : Warning

Hazard statements : H302 Harmful if swallowed.  
H361 Suspected of damaging fertility or the unborn child.  
H373 May cause damage to organs (Kidney, Liver) through prolonged or repeated exposure if swallowed.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

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P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/ protective clothing/ eye protection/  
face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON  
CENTER/doctor if you feel unwell. Rinse mouth.

P308 + P313 IF exposed or concerned: Get medical advice/  
attention.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste  
disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (%)
ETHYLENE GLYCOL	107-21-1	Acute Tox. 4; H302 STOT RE 2; H373	>=90.00 - <=100.00
DIETHYLENE GLYCOL	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	>=1.00 - < 5.00
POTASSIUM 2-ETHYLHEXANOATE	3164-85-0	Skin Irrit. 2; H315 Repr. 2; H361	>=1.00 - < 5.00

**SECTION 4. FIRST AID MEASURES**

General advice : Move out of dangerous area.  
Call a POISON CENTRE or doctor/physician if exposed or  
you feel unwell.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.



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- 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 : Remove contaminated clothing. If irritation develops, get medical attention.  
If on skin, rinse well with water.  
Wash contaminated clothing before re-use.
  
  - In case of eye contact : Flush eyes with water as a precaution.  
Remove contact lenses.  
Protect unharmed eye.  
If eye irritation persists, consult a specialist.
  
  - If swallowed : Obtain medical attention.  
Rinse mouth with water.  
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 : Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnea, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.
- 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)
  - Cough
  - pain in the abdomen and lower back
  - cyanosis (causes blue coloring of the skin and nails from lack of oxygen)
  - lung edema (fluid buildup in the lung tissue)



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acute kidney failure (sudden slowing or stopping of urine production)  
Convulsions  
Harmful if swallowed.  
Suspected of damaging fertility or the unborn child.

Notes to physician : This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

**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

Unsuitable extinguishing media : High volume water jet

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

Hazardous combustion products : Alcohols  
Aldehydes  
carbon dioxide and carbon monoxide  
ethers  
toxic fumes  
Hydrocarbons  
acetaldehyde  
formaldehyde-like  
potassium oxide

Specific extinguishing methods :

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Product is compatible with standard fire-fighting agents.

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.

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.

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**SECTION 7. HANDLING AND STORAGE**

Advice on safe handling : Do not breathe vapours/dust.  
Do not smoke.  
Container hazardous when empty.  
Avoid contact with skin and eyes.  
Smoking, eating and drinking should be prohibited in the application area.  
For personal protection see section 8.  
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Observe label precautions.

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**



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Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ETHYLENE GLYCOL	107-21-1	(c)	100 mg/m <sup>3</sup>	CA AB OEL
		TWA	10 mg/m <sup>3</sup> particulate	CA BC OEL
		STEL	20 mg/m <sup>3</sup> particulate	CA BC OEL
		C	100 mg/m <sup>3</sup> aerosol	CA BC OEL
		C	50 ppm Vapour	CA BC OEL
		C	50 ppm 127 mg/m <sup>3</sup> Vapour and mist	CA QC OEL

**Engineering measures** : 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 : A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

Hand protection  
Remarks

: The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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:  
Impervious clothing  
Safety shoes  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
Wear resistant gloves (consult your safety equipment supplier).

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Hygiene measures : Wash hands before breaks and at the end of workday.  
When using do not eat or drink.  
When using do not smoke.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state : liquid

Colour : orange

Odour : No data available

Odour Threshold : No data available

pH : Average 8.4

Melting point/freezing point : -34.6 °F / -37.0 °C

Boiling point/boiling range : 330 °F / 166 °C  
(1013 hPa)

Flash point : > 250.0 °F / > 121.1 °C  
Method: closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Upper explosion limit : 15.3 %(V)

Lower explosion limit : 3.2 %(V)

Vapour pressure : 17.5 mmHg

Relative vapour density : No data available

Relative density : No data available

Density : 1.1149 g/cm<sup>3</sup> (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

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Thermal decomposition : No data available

## Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

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 : Acids  
Aldehydes  
Alkali metals  
Alkaline earth metals  
Bases  
strong alkalis  
Strong oxidizing agents  
Sulphur compoundsHazardous decomposition products : Alcohols  
Aldehydes  
carbon dioxide and carbon monoxide  
ethers  
Hydrocarbons  
Organic acids  
potassium oxide  
ketones**SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure : Inhalation  
Skin contact  
Eye Contact  
Ingestion

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**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity

:  
Remarks: Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.

Acute dermal toxicity

: Remarks: Skin absorption of this material (or a component) may be increased through injured skin.

**Components:**

ETHYLENE GLYCOL:

Acute oral toxicity

: LD0 (Human): Estimated 1.56 g/kg

Assessment: The component/mixture is classified as acute oral toxicity, category 4.

Acute inhalation toxicity

: LC50 (Rat): 10.9 mg/l  
Exposure time: 1 h  
Test atmosphere: dust/mist  
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity

: LD50 (Rabbit): 9,530 mg/kg

DIETHYLENE GLYCOL:

Acute oral toxicity

: LD50 (Human): Expected 1,120 mg/kg  
Target Organs: Kidney

Acute inhalation toxicity

: LC50 (Rat): > 4.6 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity

: LD50 (Rabbit): 13,300 mg/kg

POTASSIUM 2-ETHYLHEXANOATE:

Acute oral toxicity

: LD50 (Rat): 3,640 mg/kg  
Remarks: Information given is based on data obtained from similar substances.

Acute inhalation toxicity

: LC50 (Rat): > 0.11 mg/l  
Exposure time: 8 h  
Test atmosphere: dust/mist

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Assessment: Not classified as acutely toxic by inhalation under GHS.

Remarks: No mortality observed at this dose.

Information given is based on data obtained from similar substances.

Acute dermal toxicity

: LD50 (Rat): > 2,000 mg/kg

Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Remarks: Information given is based on data obtained from similar substances.

**Skin corrosion/irritation**

Not classified based on available information.

**Components:**

ETHYLENE GLYCOL:

Species: Rabbit

Result: No skin irritation

DIETHYLENE GLYCOL:

Species: Human

Result: Slight, transient irritation

POTASSIUM 2-ETHYLHEXANOATE:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

GLP: yes

**Serious eye damage/eye irritation**

Not classified based on available information.

**Product:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

**Components:**

ETHYLENE GLYCOL:

Result: Slight, transient irritation

DIETHYLENE GLYCOL:

Species: Rabbit

Result: Slight, transient irritation

POTASSIUM 2-ETHYLHEXANOATE:

Result: Slight, transient irritation

**Respiratory or skin sensitisation**

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.

**Components:**

ETHYLENE GLYCOL:

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Test Type: Maximisation Test  
Species: Guinea pig  
Assessment: Does not cause skin sensitisation.

**DIETHYLENE GLYCOL:**

Test Type: Maximisation Test  
Species: Guinea pig  
Method: Directive 67/548/EEC, Annex V, B.6.  
Result: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity  
Not classified based on available information.

**Components:****ETHYLENE GLYCOL:**

Genotoxicity in vitro : Test Type: Ames test  
Test species: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Result: negative

**DIETHYLENE GLYCOL:**

Genotoxicity in vitro : Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

: Test species: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 479  
Result: negative  
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test  
Test species: Mouse  
Method: OECD Test Guideline 474  
Result: negative  
GLP: yes

**Carcinogenicity**

Not classified based on available information.

**Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

**Components:****POTASSIUM 2-ETHYLHEXANOATE:**

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

**STOT - single exposure**

Not classified based on available information.

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**STOT - repeated exposure**

Not classified based on available information.

**Components:**

ETHYLENE GLYCOL:

Exposure routes: Ingestion

Target Organs: Kidney, Liver

Assessment: May cause damage to organs through prolonged or repeated exposure.

DIETHYLENE GLYCOL:

Exposure routes: Ingestion

Target Organs: Kidney

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Aspiration toxicity**

Not classified based on available information.

**Product:**

No aspiration toxicity classification

**Experience with human exposure****Components:**

DIETHYLENE GLYCOL:

Liver

**Further information****Product:**

Remarks: No data available

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

**Components:**

ETHYLENE GLYCOL:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 27,540 mg/l  
Exposure time: 96 h  
Test Type: static testLC50 (Pimephales promelas (fathead minnow)): 8,050 mg/l  
Exposure time: 96 hToxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 10,000 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 -

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13,000 mg/l  
End point: Growth inhibition  
Exposure time: 7 Days

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 32,000 mg/l  
Exposure time: 7 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 24,000 mg/l  
Exposure time: 7 d

**DIETHYLENE GLYCOL:**

Toxicity to fish : LC50 (Fathead minnow (Pimephales promelas)): 75,210 mg/l  
Exposure time: 96 h  
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : LC50 (Water flea (Daphnia magna)): > 10,000 mg/l  
Exposure time: 24 h  
Test Type: static test  
Method: DIN 38412

**POTASSIUM 2-ETHYLHEXANOATE:**

Toxicity to fish : LC50 (Fish): > 100 mg/l  
Exposure time: 96 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 106 mg/l  
Exposure time: 48 h  
Test Type: static test  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 49.3 mg/l  
End point: Growth inhibition  
Exposure time: 72 h  
Test Type: static test  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 25 mg/l  
Exposure time: 21 d  
Test Type: static test  
Remarks: Information given is based on data obtained from similar substances.

**Persistence and degradability****Components:****ETHYLENE GLYCOL:**

Biodegradability : Result: Readily biodegradable.

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Biodegradation: 90 - 100 %  
Exposure time: 10 d  
Method: OECD Test Guideline 301

**DIETHYLENE GLYCOL:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 70 - 80 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**POTASSIUM 2-ETHYLHEXANOATE:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 99 %  
Exposure time: 28 d  
Remarks: Information given is based on data obtained from similar substances.

No data available

**Bioaccumulative potential****Components:****ETHYLENE GLYCOL:**

Bioaccumulation : Species: Crayfish (Procambarus)  
Bioconcentration factor (BCF): 0.27  
Exposure time: 61 d  
Concentration: 1000 mg/l  
Method: Flow through

Partition coefficient: n-octanol/water : log Pow: -1.36

**DIETHYLENE GLYCOL:**

Bioaccumulation : Species: Leuciscus idus (Golden orfe)  
Bioconcentration factor (BCF): 100

Partition coefficient: n-octanol/water : log Pow: -1.47

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**



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**Disposal methods**

General advice : Do not dispose of waste into sewer.  
 Do not contaminate ponds, waterways or ditches with chemical or used container.  
 Send to a licensed waste management company.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.  
 Dispose of as unused product.  
 Empty containers should be taken to an approved waste handling site for recycling or disposal.  
 Do not re-use empty containers.

**SECTION 14. TRANSPORT INFORMATION**

**International transport regulations**

**REGULATION**

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

**U.S. DOT - ROAD**

Not dangerous goods

**CFR\_RAIL\_C**

Not dangerous goods

**U.S. DOT - INLAND WATERWAYS**

Not dangerous goods

**TDG\_ROAD\_C**


Not dangerous goods

**TDG\_RAIL\_C**

Not dangerous goods

**TDG\_INWT\_C**

Not dangerous goods

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**INTERNATIONAL MARITIME DANGEROUS GOODS**

Not dangerous goods
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**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**

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**

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**The components of this product are reported in the following inventories:**

- DSL : This product contains one or several components that are not on the Canadian DSL and have annual quantity limits.
- AICS : Not in compliance with the inventory
- ENCS : q (quantity restricted)
- KECI : Not in compliance with the inventory
- PICCS : Not in compliance with the inventory
- IECSC : On the inventory, or in compliance with the inventory
- TSCA : On TSCA Inventory

**Inventories**

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



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**SECTION 16. OTHER INFORMATION**

**Further information**

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<p><b>NFPA:</b></p> <p>Health: 1, Flammability: 1, Instability: 0, Special hazard.</p>	<p><b>HMIS III:</b></p> <table border="1"> <tr> <td style="background-color: blue; color: white;"><b>HEALTH</b></td> <td style="text-align: center;"><b>1*</b></td> </tr> <tr> <td style="background-color: red; color: white;"><b>FLAMMABILITY</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: yellow; color: black;"><b>PHYSICAL HAZARD</b></td> <td style="text-align: center;"><b>0</b></td> </tr> </table> <p>0 = not significant, 1 = Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic</p>	<b>HEALTH</b>	<b>1*</b>	<b>FLAMMABILITY</b>	<b>1</b>	<b>PHYSICAL HAZARD</b>	<b>0</b>
<b>HEALTH</b>	<b>1*</b>						
<b>FLAMMABILITY</b>	<b>1</b>						
<b>PHYSICAL HAZARD</b>	<b>0</b>						

**NFPA Flammable and Combustible Liquids Classification**

Combustible Liquid Class IIIB


**Full text of H-Statements**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H361 Suspected of damaging fertility or the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

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-VALVOLINE).

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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