SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier
Trade name: ZEREX™ ORIGINAL Antifreeze Coolant

Relevant identified uses of the substance or mixture and uses advised against
Recommended use: Coolant and antifreeze.

Details of the supplier of the safety data sheet
Valvoline LLC
100 Valvoline Way
Lexington, KY 40509
United States of America (USA)
1-800-TEAMVAL (1-800-832-6825)
SDS@valvoline.com

Emergency telephone number
1-800-VALVOLINE (1-800-825-8654)

Regulatory Information Number
1-800-TEAMVAL (1-800-832-6825)

Product Information
1-800-TEAMVAL (1-800-832-6825)

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity (Oral): Category 4
Carcinogenicity: Category 1B
Reproductive toxicity: Category 1B
Specific target organ systemic toxicity - repeated exposure (Oral): Category 2 (Kidney, Liver)

GHS label elements
Hazard pictograms:

Signal Word: Danger
Hazard Statements: Harmful if swallowed.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs (Kidney, Liver) through prolonged or repeated exposure if swallowed.

Precautionary Statements:
Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
IF exposed or concerned: Get medical advice/ attention.
Storage:
Store locked up.
Disposal:
Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture: Mixture

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;=90.00 - &lt;=100.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT RE 2; H373</td>
<td></td>
</tr>
<tr>
<td>DIETHYLENE GLYCOL</td>
<td>111-46-6</td>
<td>Acute Tox. 4; H302</td>
<td>&gt;=1.50 - &lt;5.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT RE 2; H373</td>
<td></td>
</tr>
<tr>
<td>DIPOTASSIUM PHOSPHATE</td>
<td>7758-11-4</td>
<td>Acute Tox. 3; H311</td>
<td>&gt;=0.50 - &lt;1.00</td>
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<tr>
<td>DISODIUM TETRABORATE</td>
<td>1330-43-4</td>
<td>Repr. 1B; H360</td>
<td>&gt;=0.50 - &lt;1.00</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

ZEREX™ ORIGINAL Antifreeze Coolant

SECTION 4. FIRST AID MEASURES

General advice
- Move out of dangerous area.
- Show this safety data sheet to the doctor in attendance.
- Do not leave the victim unattended.

If inhaled
- 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
- 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)
- acute kidney failure (sudden slowing or stopping of urine production)
- Convulsions

Harmful if swallowed.
May cause cancer.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure if swallowed.

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: Alcohols
products

- Aldehydes
- Carbon dioxide and carbon monoxide
- Ethers
- Toxic fumes
- Hydrocarbons

Specific extinguishing methods:

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.

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.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling:

- Do not breathe vapours/dust.
- Do not smoke.
- Container hazardous when empty.
- Avoid exposure - obtain special instructions before use.
- 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.

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>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>C</td>
<td>50 ppm 125 mg/m³</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>40 ppm 100 mg/m³ Vapour</td>
<td>CAL PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>25 ppm Vapour</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>50 ppm Vapour</td>
<td>ACGIH</td>
</tr>
<tr>
<td>ETHYLENE GLYCOL</td>
<td></td>
<td>STEL</td>
<td>10 mg/m³ Inhalable fraction, Aerosol only</td>
<td>ACGIH</td>
</tr>
<tr>
<td>DISODIUM TETRABORATE</td>
<td>1330-43-4</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>US WEEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PEL</td>
<td>5 mg/m³</td>
<td>CAL PEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>2 mg/m³ Inhalable fraction (Borate)</td>
<td>ACGIH</td>
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<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>6 mg/m³ Inhalable fraction (Borate)</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

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: In the case of vapour formation use a respirator with an approved filter.

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).

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: green
Odour: No data available
Odour Threshold: No data available
pH: 9 - < 11
Melting point/freezing point: No data available
Boiling point/boiling range: 387.7 °F / 197.6 °C
(1,013.232 hPa)
Calculated Phase Transition Liquid/Gas
Flash point: > 232 °F / > 111 °C
Evaporation rate: No data available
Flammability (solid, gas): No data available
Upper explosion limit: 15.3 % (V)
GLP: Calculated Explosive Limit

Lower explosion limit: 3.2 % (V)

Vapour pressure: 0.12265 hPa (25 °C)

Relative vapour density: No data available

Relative density: No data available

Density: 1.1205 g/cm³ (15.6 °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: 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 compounds

Hazardous decomposition products
- Alcohols
- Aldehydes
- carbon dioxide and carbon monoxide
- ethers
- Hydrocarbons
- Organic acids
- ketones

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Eye Contact
Ingestion

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 toxicity estimate: 510.95 mg/kg
Method: Calculation method

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

Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

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
Acute toxicity (other routes of administration):

**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

**DIPOTASSIUM PHOSPHATE:**
Acute oral toxicity : LD50 (Rat): > 500 mg/kg
LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: No adverse effect has been observed in acute oral toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): > 300 mg/kg
LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402

**DISODIUM TETRABORATE:**
Acute inhalation toxicity : LC50 (Rat): > 2.03 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: No adverse effect has been observed in acute dermal toxicity tests.

**SODIUM NITRATE:**
Acute oral toxicity : LD50 (Rat): ca. 3,430 mg/kg
Method: OECD Test Guideline 401

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

DIPOTASSIUM PHOSPHATE:
Species : Rabbit
Result  : Slight, transient irritation

DISODIUM TETRABORATE:
Species : Rabbit
Result  : No skin irritation

SODIUM NITRATE:
Species : Rabbit
Method  : OECD Test Guideline 404
Result  : No skin irritation
Remarks : Information given is based on data obtained from similar substances.

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

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

Components:
ETHYLENE GLYCOL:
Result  : Slight, transient irritation

DIETHYLENE GLYCOL:
Species : Rabbit
Result  : Slight, transient irritation

DIPOTASSIUM PHOSPHATE:
Species : Rabbit
Result  : Slight, transient irritation

DISODIUM TETRABORATE:
Result  : Slight, transient irritation

SODIUM NITRATE:
Species : Rabbit
Result  : Irritating to eyes.
Method  : OECD Test Guideline 405

Respiratory or skin sensitisation
Skin sensitisation
Not classified based on available information.
Respiratory sensitisation
Not classified based on available information.
Components:
**ETHYLENE GLYCOL:**
- Test Type: Maximisation Test
- Species: Guinea pig
- Assessment: Does not cause skin sensitisation.

**DIETHYLENE GLYCOL:**
- Test Type: Maximisation Test
- Species: Guinea pig
- Result: Did not cause sensitisation on laboratory animals.

**DIPOTASSIUM PHOSPHATE:**
- Test Type: Local lymph node assay
- Species: Mouse
- Assessment: Did not cause sensitisation on laboratory animals.
- Method: OECD Test Guideline 429
- Remarks: Information given is based on data obtained from similar substances.

**DISODIUM TETRABORATE:**
- Test Type: Buehler Test
- Species: Guinea pig
- Assessment: Does not cause skin sensitisation.
- Method: OECD Test Guideline 406

Germ cell mutagenicity
- Not classified based on available information.

Components:
**ETHYLENE GLYCOL:**
- Genotoxicity in vitro:
  - Test Type: Ames test
  - Test system: 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 system: 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
- Species: Mouse
- Method: OECD Test Guideline 474
Result: negative
GLP: yes

DIPOTASSIUM PHOSPHATE:
Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity
May cause cancer.

IARC
Group 2A: Probably carcinogenic to humans
Sodium nitrate Not Assigned
(nitrate (ingested) under conditions that result in endogenous nitrosation)

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

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.

Reproductive toxicity
May damage fertility or the unborn child.

Components:
DISODIUM TETRABORATE:
Reproductive toxicity - Assessment: Clear evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
May cause damage to organs (Kidney, Liver) through prolonged or repeated exposure if swallowed.

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.
Experience with human exposure
Components:
ETHYLENE GLYCOL:
Ingestion : Target Organs: Kidney
DIETHYLENE GLYCOL:
General Information : Liver
Kidney
Further information
Product:
Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Ecotoxicology Assessment
Short-term (acute) aquatic hazard : 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 test
LC50 (Pimephales promelas (fathead minnow)): 8,050 mg/l
Exposure time: 96 h
Toxicity 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 - 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 daphnia and other aquatic invertebrates: LC50 (Daphnia magna (Water flea)): > 10,000 mg/l
  Exposure time: 24 h
  Test Type: static test
  Method: DIN 38412

DIPOTASSIUM PHOSPHATE:
  Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  Exposure time: 96 h
  Test Type: semi-static test
  Method: OECD Test Guideline 203
  Remarks: Information given is based on data obtained from similar substances.

  Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 100 mg/l
  Exposure time: 48 h
  Test Type: static test
  Method: OECD Test Guideline 202
  Remarks: Information given is based on data obtained from similar substances.

  Toxicity to algae: EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
  End point: Growth inhibition
  Exposure time: 72 h
  Test Type: static test
  Method: OECD Test Guideline 201
  Remarks: Information given is based on data obtained from similar substances.

  NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
  End point: Growth inhibition
  Exposure time: 72 h
  Test Type: static test
  Method: OECD Test Guideline 201
  Remarks: Information given is based on data obtained from similar substances.

DISODIUM TETRABORATE:
  Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): 79.7 mg/l
  Exposure time: 96 h
  Remarks: Information refers to the main component.

  Toxicity to algae: NOEC (Pseudokirchneriella subcapitata (green algae)): 17.5 mg/l
  End point: Growth inhibition
  Exposure time: 72 h
  Test Type: static test
  Method: OECD Test Guideline 201
  Remarks: Information refers to the main component.

  Toxicity to fish (Chronic): NOEC (Danio rerio (zebra fish)): 5.6 mg/l
SODIUM NITRATE:
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): 1,355 - 2,063 mg/l
Exposure time: 96 h
Method: Static
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates: LC50 (Daphnia magna (Water flea)): 3,581 mg/l
Exposure time: 48 h
Method: Static

Persistence and degradability
Components:
ETHYLENE GLYCOL:
Biodegradability: Result: Readily biodegradable.
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

DIPOTASSIUM PHOSPHATE:
Biodegradability: Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

DISODIUM TETRABORATE:
Biodegradability: Result: The methods for determining biodegradability are not applicable to inorganic 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
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

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

<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>
</table>
### 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

### 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

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
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</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>5000</td>
<td>5224</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards:
- Acute toxicity (any route of exposure)
- Reproductive toxicity
- Specific target organ toxicity (single or repeated exposure)

California Prop. 65

⚠️ WARNING: Reproductive Harm - www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:
- DSL: All components of this product are on the Canadian DSL
- AICS: On the inventory, or in compliance with the inventory
- ENCS: Not in compliance with the inventory
- KECI: 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
- TCSI: On the inventory, or in compliance with the inventory
- TSCA: On TSCA Inventory

TSCA list
No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 08/30/2018

NFPA:                  HMIS III:
NFPA Flammable and Combustible Liquids Classification
Combustible Liquid Class IIIB

Full text of H-Statements
H272 May intensify fire; oxidizer.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H319 Causes serious eye irritation.
H350 May cause cancer.
H360 May damage 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).

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