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29 CFR 1910.1200 (OSHA HazCom 2012)

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier**

Trade name : Zerex™ Precharged Fully Formulated Heavy Duty RTU Antifreeze

<p><b>Details of the supplier of the safety data sheet</b>  Valvoline LLC  100 Valvoline Way  Lexington, KY 40509  United States of America (USA)  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 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 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.

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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

**Hazardous components**

Chemical name	CAS-No.	Classification	Concentration (%)
ETHYLENE GLYCOL	107-21-1	Acute Tox. 4; H302 STOT RE 2; H373	42.4917
DIETHYLENE GLYCOL	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	2.1313
SODIUM BENZOATE	532-32-1	Eye Irrit. 2A; H319	1.6177
DISODIUM TETRABORATE ANHYDROUS	1330-43-4	Repr. 1B; H360	0.9519

**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



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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 damage fertility or the unborn child.



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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  
Sodium oxides

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.



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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.

**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**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ETHYLENE GLYCOL	107-21-1	C	100 mg/m3 Aerosol only	ACGIH
		C	50 ppm	OSHA P0

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			125 mg/m3	
		C	40 ppm 100 mg/m3 Vapour	CAL PEL
DIETHYLENE GLYCOL	111-46-6	TWA	10 mg/m3	US WEEL
DISODIUM TETRABORATE ANHYDROUS	1330-43-4	TWA	1 mg/m3	NIOSH REL
		PEL	5 mg/m3	CAL PEL
		TWA	10 mg/m3	OSHA P0
		TWA	2 mg/m3 Inhalable fraction (Borate)	ACGIH
		STEL	6 mg/m3 Inhalable fraction (Borate)	ACGIH

**Hazardous components without workplace control parameters**

Components	CAS-No.
SODIUM BENZOATE	532-32-1
DISODIUM TETRABORATE ANHYDROUS	1330-43-4

**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:

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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 : pink
- Odour : No data available
- Odour Threshold : No data available
- pH : No data available
- Melting point/freezing point : No data available
- Boiling point/boiling range : > 212 °F / > 100 °C  
 (1,013.333333 hPa)  
 Calculated Phase Transition Liquid/Gas
- Flash point : > 232 °F / > 111 °C  
 Calculated Flash Point
- 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)  
 GLP: Calculated Explosive Limit
- Vapour pressure : 23.3333333 hPa (20 °C)  
 Calculated Vapor Pressure
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1.080 g/cm3

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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  
Exposure to moisture

Incompatible materials : Acids  
Aldehydes  
Alkali metals  
Alkaline earth metals  
Bases  
iron salts  
strong alkalis  
Strong oxidizing agents  
Sulphur compounds

Hazardous decomposition products : Alcohols  
Aldehydes  
carbon dioxide and carbon monoxide  
ethers  
Hydrocarbons  
Organic acids  
Sodium oxides  
ketones

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**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 dermal toxicity :

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

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

Acute oral toxicity :

LD<sub>0</sub> (Human): Estimated 1.56 g/kg

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

Acute inhalation toxicity :

LC<sub>50</sub> (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 :

LD<sub>50</sub> (Rabbit): 9,530 mg/kg**DIETHYLENE GLYCOL:**

Acute oral toxicity :

LD<sub>50</sub> (Human): Expected 1,120 mg/kg

Target Organs: Kidney

Acute inhalation toxicity :

LC<sub>50</sub> (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 :

LD<sub>50</sub> (Rabbit): 13,300 mg/kg**SODIUM BENZOATE:**

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Acute oral toxicity : LD50 (Rat, male and female): 3,450 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 12.2 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Remarks: Information given is based on data obtained from similar substances.

**DISODIUM TETRABORATE ANHYDROUS:**

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.

**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

**SODIUM BENZOATE:**

Result: Slight, transient irritation

**DISODIUM TETRABORATE ANHYDROUS:**

Species: Rabbit

Result: No skin irritation

**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

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**SODIUM BENZOATE:**

Species: Rabbit

Result: Irritating to eyes.

Method: OECD Test Guideline 405

**DISODIUM TETRABORATE ANHYDROUS:**

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:**

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.

**DISODIUM TETRABORATE ANHYDROUS:**

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 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



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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**

May damage fertility or the unborn child.

**Components:**

DISODIUM TETRABORATE ANHYDROUS:

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**

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.

**Experience with human exposure**

**Components:**

DIETHYLENE GLYCOL:

Liver

**Further information**

**Product:**

Remarks: No data available

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**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product:**

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

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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 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 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

**SODIUM BENZOATE:**

Toxicity to fish : LC50 (Fathead minnow (Pimephales promelas)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: Static  
Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : LC50 (Water flea (Daphnia magna)): > 100 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: Static  
Remarks: Mortality

**DISODIUM TETRABORATE ANHYDROUS:**

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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 toxicity) : NOEC (Danio rerio (zebra fish)): 5.6 mg/l  
 Exposure time: 34 d  
 Test Type: semi-static test  
 Method: OECD Test Guideline 210  
 Remarks: Information refers to the main component.

**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

**SODIUM BENZOATE:**

Biodegradability : Result: Readily biodegradable.  
 Biodegradation: 88 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301

**DISODIUM TETRABORATE ANHYDROUS:**

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



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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**

**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.



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**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**

Marine pollutant	no
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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.



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**SECTION 15. REGULATORY INFORMATION**

**EPCRA - Emergency Planning and Community Right-to-Know Act  
CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
ETHYLENE GLYCOL	107-21-1	5000	11767

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Chronic Health Hazard  
Acute Health Hazard

**SARA 313**

ETHYLENE GLYCOL 107-21-1 42.49 %

**California Prop 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**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 : Not in compliance with the inventory

KECI : Not 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

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)

**SECTION 16. OTHER INFORMATION**

**Further information**

Revision Date: 05/22/2017

<b>NFPA:</b>	<b>HMIS III:</b>
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**SAFETY DATA SHEET**

Revision Date: 05/22/2017

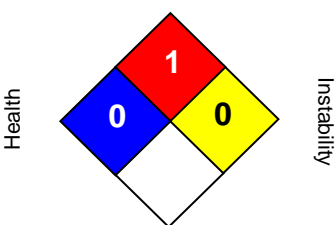
Print Date: 6/2/2017

SDS Number: 000000182623

Zerex™ Precharged Fully Formulated Heavy Duty RTU Antifreeze

Version: 1.3

813053

<p>Flammability</p>  <p>Health</p> <p>Instability</p> <p>Special hazard.</p>	<table border="1"> <tr> <td style="background-color: #0000FF; color: white;"><b>HEALTH</b></td> <td style="text-align: center;"><b>1*</b></td> </tr> <tr> <td style="background-color: #FF0000; color: white;"><b>FLAMMABILITY</b></td> <td style="text-align: center;"><b>1</b></td> </tr> <tr> <td style="background-color: #FFFF00; 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.
- H319 Causes serious eye irritation.
- 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
- GHS : Globally Harmonized System of Classification and Labeling of Chemicals.
- H-statement : Hazard Statement
- IATA : International Air Transport Association.

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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