SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Zerex™ G-05™ Formula 50/50 Antifreeze Coolant

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

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

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.
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

<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>50.4318</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>2.5207</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT RE 2; H373</td>
<td></td>
</tr>
<tr>
<td>SODIUM BENZOATE</td>
<td>532-32-1</td>
<td>Eye Irrit. 2A; H319</td>
<td>1.395</td>
</tr>
<tr>
<td>DISODIUM TETRABORATE ANHYDROUS</td>
<td>1330-43-4</td>
<td>Repr. 1B; H360</td>
<td>0.8209</td>
</tr>
</tbody>
</table>

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 tachypnia, 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.
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.
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>100 mg/m3 Aerosol only</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C</td>
<td>50 ppm</td>
<td>OSHA P0</td>
</tr>
</tbody>
</table>
Hazardous components without workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>TWA</th>
<th>10 mg/m³</th>
<th>TWA</th>
<th>1 mg/m³</th>
<th>TWA</th>
<th>2 mg/m³</th>
<th>STEL</th>
<th>6 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIETHYLENE GLYCOL</td>
<td>111-46-6</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>STEL</td>
<td>6 mg/m³</td>
</tr>
<tr>
<td>DISODIUM TETRABORATE ANHYDROUS</td>
<td>1330-43-4</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>TWA</td>
<td>1 mg/m³</td>
<td>TWA</td>
<td>2 mg/m³</td>
<td>STEL</td>
<td>6 mg/m³</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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Average 8.0</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>225 °F / 107 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 250.0 °F / &gt; 121.1 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>15.3 %(V)</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>1.7 %(V)</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>1.800 mmHg (68.00 °F)</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>&gt; 1.000 AIR=1</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
| Density                                      | 1.0779 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 : 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
### 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**
  - 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

**SODIUM BENZOATE:**
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
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
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
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

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Ecotoxicology Assessment: 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 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:**
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
Partition coefficient: \( n\text{-octanol/water} \) : log Pow: -1.36

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

Partition coefficient: \( n\text{-octanol/water} \) : 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

<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>
</table>

15 / 19
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

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>
</tr>
</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>5000</td>
<td>9914</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:
- Chronic Health Hazard
- Acute Health Hazard

SARA 313

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>ETHYLENE GLYCOL</td>
<td>107-21-1</td>
<td>50.43 %</td>
</tr>
</tbody>
</table>

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: 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: 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)

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 05/22/2017

NFPA:        HMIS III:
SAFETY DATA SHEET

Zerex™ G-05™ Formula 50/50 Antifreeze Coolant

ZXG05RU1

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.
SAFETY DATA SHEET

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Zerex™ G-05™ Formula 50/50 Antifreeze Coolant
ZXG05RU1

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