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29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : ZEREX™ GREEN HD PRE-CHARGED Antifreeze Coolant

<p>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)</p> <p>SDS@valvoline.com</p>	<p>Emergency telephone number 1-800-VALVOLINE (1-800-825-8654)</p> <p>Regulatory Information Number 1-800-TEAMVAL (1-800-832-6825)</p> <p>Product Information 1-800-TEAMVAL (1-800-832-6825)</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:**

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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

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	>=1.50 - < 5.00
DIPOTASSIUM PHOSPHATE	7758-11-4	Acute Tox. 3; H311	>=0.50 - < 1.00
DISODIUM TETRABORATE	1330-43-4	Repr. 1B; H360	>=0.50 - < 1.00
SODIUM NITRITE	7632-00-0	Ox. Sol. 2; H272 Acute Tox. 3; H301 Eye Irrit. 2A; H319	>=0.10 - < 0.50

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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.
- 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)



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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.
 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 products : Alcohols
 Aldehydes
 carbon dioxide and carbon monoxide
 ethers
 toxic fumes
 Hydrocarbons

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- 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.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Observe label precautions.
 Electrical installations / working materials must comply with

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the technological safety standards.

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	50 ppm 125 mg/m ³	OSHA P0
		C	40 ppm 100 mg/m ³ Vapour	CAL PEL
		TWA	25 ppm Vapour	ACGIH
		STEL	50 ppm Vapour	ACGIH
		STEL	10 mg/m ³ Inhalable fraction, Aerosol only	ACGIH
DIETHYLENE GLYCOL	111-46-6	TWA	10 mg/m ³	US WEEL
DISODIUM TETRABORATE	1330-43-4	TWA	1 mg/m ³	NIOSH REL
		PEL	5 mg/m ³	CAL PEL
		TWA	10 mg/m ³	OSHA P0
		TWA	2 mg/m ³ Inhalable fraction (Borate)	ACGIH
		STEL	6 mg/m ³ Inhalable fraction (Borate)	ACGIH

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

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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

- Appearance : liquid
- Odour : No data available
- Odour Threshold : No data available
- pH : 10 - 11.2
Concentration: 100 %
- 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 : > 482 °F / > 250 °C
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Self-ignition : No data available

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- Upper explosion limit / Upper flammability limit : 15.3 %(V)
GLP: Calculated Explosive Limit
- Lower explosion limit / Lower flammability limit : 3.2 %(V)
GLP: Calculated Explosive Limit
- Vapour pressure : 23.3333333 hPa (68 °F / 20 °C)
Calculated Vapor Pressure
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1.1229 g/cm3 (60.1 °F / 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
- Decomposition temperature : 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

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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: 508.24 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

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Acute toxicity (other routes of administration) : LD50 (Rat): 5,010 mg/kg
Application Route: Intraperitoneal

LD50 (Rat): 3,260 mg/kg
Application Route: Intravenous

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 NITRITE:

Acute oral toxicity : LD50 (Rat): 180 mg/kg

Acute inhalation toxicity : LC50 (Rat): 5.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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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 NITRITE:

Assessment : No skin irritation
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

DIPOTASSIUM PHOSPHATE:

Species : Rabbit
Result : Slight, transient irritation

DISODIUM TETRABORATE:

Result : Slight, transient irritation

SODIUM NITRITE:

Result : Irritating to eyes.
Assessment : Irritating to eyes.

Respiratory or skin sensitisation**Skin sensitisation**

Not classified based on available information.

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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.

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

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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

Not classified based on available information.

IARC No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is 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.

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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 : Acute aquatic toxicity Category 3; Harmful to aquatic life.

Long-term (chronic) 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 : NOEC (Daphnia magna (Water flea)): 24,000 mg/l
Exposure time: 7 d

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(Chronic toxicity)

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.

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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.

SODIUM NITRITE:
 Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2.35 - 3.81 mg/l
 Exposure time: 96 h
 Test Type: flow-through test
 LC50 (Oncorhynchus mykiss (rainbow trout)): 0.54 - 26.3 mg/l
 Exposure time: 96 h
 Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 15.4 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
 Exposure time: 72 h
 Test Type: Growth inhibition
 Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Ictalurus catus (catfish)): 6.16 mg/l
 Exposure time: 31 d
 Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Aquatic invertebrates): 9.86 mg/l
 Exposure time: 80 d
 Test Type: static test

Toxicity to bacteria : EC10 (activated sludge): 210 mg/l
 Exposure time: 3 h
 Test Type: Static
 Method: OECD Test Guideline 209

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 %

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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.

SODIUM NITRITE:
 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-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

SODIUM NITRITE:
 Partition coefficient: n-octanol/water : log Pow: -3.700 (25 °C)

No data available
Mobility in soil

Components:
SODIUM NITRITE:
 Stability in soil : Remarks: Not expected to adsorb on soil.

No data available
Other adverse effects
 No data available

Product:
 Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.



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Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.
 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



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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.

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	5251

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)

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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

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:
 SODIUM NITRITE 7632-00-0

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

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NFPA:	HMIS III:
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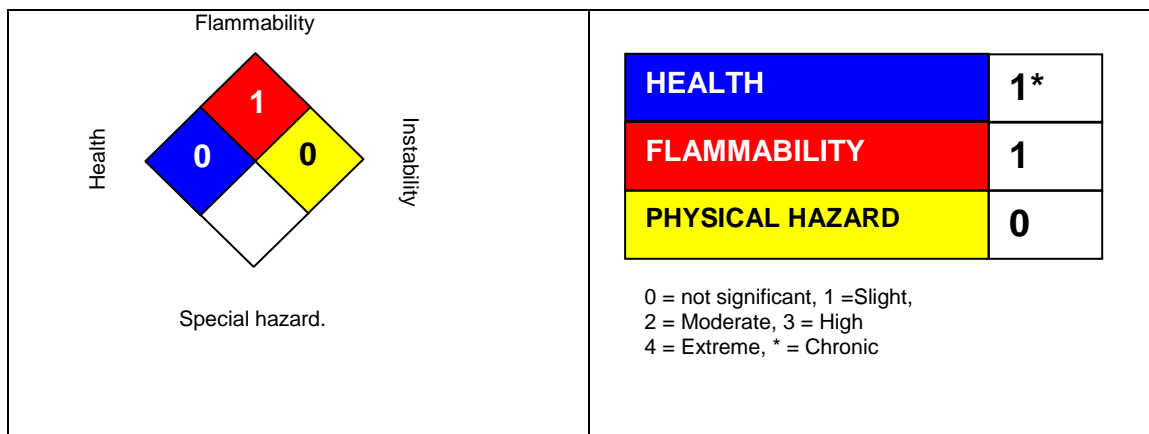
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NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

Full text of H-Statements

- H272 May intensify fire; oxidizer.
- H301 Toxic if swallowed.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- 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

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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