



SAFETY DATA SHEET
ZEREX™ ORIGINAL Antifreeze Coolant

Version: 1.1

Revision Date: 2021/11/04

Print Date:
06/21/2023

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : ZEREX™ ORIGINAL
Antifreeze Coolant

Product code : ZX001

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)
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Reproductive toxicity : Category 1B

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

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.
H360 May damage fertility or the unborn child.
H373 May cause damage to organs (Kidney, Liver) through prolonged or repeated exposure if swallowed.



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Precautionary statements : **Prevention:**
P203 Obtain, read and follow all safety instructions before use.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.
Response:
P301 + P317 + P330 IF SWALLOWED: Get medical help. Rinse mouth.
P318 IF exposed or concerned, get medical advice.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
No information available.

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 Acute Tox. 4; H302 Acute Tox. 4; H302 Acute Tox. 4; H302 STOT RE 2; H373	>= 90.00 - <= 100.00
2,2'-oxybis-Ethanol	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	>= 1.00 - < 5.00
DISODIUM TETRABORATE	1330-43-4	Repr. 1B; H360 Aquatic Acute 3; H402	>= 0.10 - < 1.00



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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 eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- 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.
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No symptoms known or expected.

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.

No hazards which require special first aid measures.

Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- | | |
|---|--|
| 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 | : No hazardous combustion products are known |
| Specific extinguishing methods | : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus for firefighting if necessary. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | |
|---|---|
| Personal precautions, protective equipment and emergency procedures | : Use personal protective equipment. |
| 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 |



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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.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.

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

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Electrical installations / working materials must comply with 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	CMP-C (aerosol)	100 mg/m3 aerosol	AR OEL
		TWA	25 ppm Vapour	ACGIH
		STEL	50 ppm Vapour	ACGIH
		STEL	10 mg/m3 Inhalable fraction, Aerosol only	ACGIH
SODIUM BORATE	1303-96-4	CMP	5 mg/m3	AR OEL



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DECAHYDRATE				
		TWA	2 mg/m3 Inhalable particulate matter (Borate)	ACGIH
		STEL	6 mg/m3 Inhalable particulate matter (Borate)	ACGIH

Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.
- Hand protection
Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
- Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : 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 : 197.6 °C
(1,013.232 hPa)
Calculated Phase Transition Liquid/Gas
- Flash point : > 111 °C
- Evaporation rate : No data available



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Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
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	:	0.12265 hPa (25 °C) Calculated Vapor Pressure
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.1205 g/cm ³ (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	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	No data available
Incompatible materials	:	Aldehydes



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Alkali metals
Alkaline earth metals
Strong acids
strong alkalis
Strong oxidizing agents
Sulphur compounds

Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate : 522.35 mg/kg
Method: Calculation method

Acute dermal toxicity : 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 moderately toxic after single ingestion.

Acute inhalation toxicity : LC50 (Rat): 10.9 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 9,530 mg/kg

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

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

2,2'-oxybis-Ethanol:

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



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Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 13,300 mg/kg

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: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

ETHYLENE GLYCOL:

Species: Rabbit

Result: No skin irritation

2,2'-oxybis-Ethanol:

Species: Human

Result: Slight, transient irritation

DISODIUM TETRABORATE:

Species: Rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

ETHYLENE GLYCOL:

Result: Slight, transient irritation

2,2'-oxybis-Ethanol:

Species: Rabbit

Result: Slight, transient irritation

DISODIUM TETRABORATE:

Result: Slight, transient irritation

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.

Respiratory sensitisation: Not classified based on available information.



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Components:

ETHYLENE GLYCOL:

Test Type: Maximisation Test

Species: Guinea pig

Assessment: Does not cause skin sensitisation.

2,2'-oxybis-Ethanol:

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:

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

2,2'-oxybis-Ethanol:

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.



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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.

2,2'-oxybis-Ethanol:

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:

2,2'-oxybis-Ethanol:

Liver

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.

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



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	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
Ecotoxicology Assessment Short-term (acute) aquatic hazard	: Not classified based on available information.
Long-term (chronic) aquatic hazard	: Not classified based on available information.
2,2'-oxybis-Ethanol: 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
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 toxicity)	: NOEC (Danio rerio (zebra fish)): 5.6 mg/l Exposure time: 34 d Test Type: semi-static test Method: OECD Test Guideline 210



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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

2,2'-oxybis-Ethanol:

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

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

2,2'-oxybis-Ethanol:

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

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

No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

SECTION 13. DISPOSAL CONSIDERATIONS



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Disposal methods

- General advice : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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

Safety, health and environmental regulations/legislation specific for the substance or mixture

Control of precursors and essential chemicals for the preparation of drugs. : Contact your sales representative for additional information.

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

- TCSI : Not in compliance with the inventory
- TSCA : All substances listed as active on the TSCA inventory
- AIIC : Not in compliance with the inventory
- DSL : All components of this product are on the Canadian DSL
- ENCS : Not in compliance with the inventory



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ISHL	: 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
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

Inventories

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

SECTION 16. OTHER INFORMATION

Further information

Internal information : 000000139197

Full text of H-Statements

H302	Harmful if swallowed.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
H402	Harmful to aquatic life.

Other information : 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).

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.



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List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists

BEI : Biological Exposure Index

CAS : Chemical Abstracts Service (Division of the American Chemical Society).

CMR : Carcinogenic, Mutagenic or Toxic for Reproduction

FG : Food grade

GHS : Globally Harmonized System of Classification and Labeling of Chemicals.

H-statement : Hazard Statement

IATA : International Air Transport Association.

IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization

ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"

IMDG : International Maritime Code for Dangerous Goods

ISO : International Organization for Standardization

logPow : octanol-water partition coefficient

LCxx : Lethal Concentration, for xx percent of test population

LDxx : Lethal Dose, for xx percent of test population.

ICxx : Inhibitory Concentration for xx of a substance

Ecxx : Effective Concentration of xx

N.O.S.: Not Otherwise Specified

OECD : Organization for Economic Co-operation and Development

OEL : Occupational Exposure Limit

P-Statement : Precautionary Statement

PBT : Persistent , Bioaccumulative and Toxic

PPE : Personal Protective Equipment

STEL : Short-term exposure limit

STOT : Specific Target Organ Toxicity

TLV : Threshold Limit Value

TWA : Time-weighted average

vPvB : Very Persistent and Very Bioaccumulative

WEL : Workplace Exposure Level