SAFETY DATA SHEET

Zerex™ Heavy Duty Extended Life
50/50 Antifreeze Coolant

Version: 4.0 Revision Date: 01.06.2026 Print Date: 11/19/2026

SECTION 1: Identification of the hazardous chemical and of the supplier

Product identifier

Product name	:	Zerex™ Heavy Duty Extended Life 50/50 Antifreeze Coolant
Product code	:	896519

Recommended use of the chemical and restrictions on use

Recommended use	:	Antifreeze Coolant

Manufacturer or supplier's details

Company	:	Valvoline Global Operations
Address	:	100 Valvoline Way Lexington, KY 40509 United States of America (USA)
Telephone	:	1-800-TEAMVAL (1-800-832-6825)
Emergency telephone number	:	+1-800-VALVOLINE (+1-800-825-8654)
E-mail address	:	SDS@valvolineglobal.com

SECTION 2: Hazards identification

Classification of the hazardous chemical

Acute toxicity (Oral)	:	Category 4
Specific target organ toxicity - repeated exposure (Oral)	:	Category 2 (Kidney)

Label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H302 Harmful if swallowed.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.

Precautionary statements :

Prevention:

P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P314 Get medical advice/ attention if you feel unwell.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3: Composition and information of the ingredients of the hazardous chemical

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
ethanediol	107-21-1	>= 30 -< 60
2,2' -oxybisethanol	111-46-6	>= 1 -< 3
sodium nitrite	7632-00-0	>= 0.025 -< 0.25

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 : Keep respiratory tract clear.
Do NOT induce vomiting.
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	:	No symptoms known or expected. Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure if swallowed.
Notes to physician	:	No hazards which require special first aid measures. Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing media	:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	:	High volume water jet

Physicochemical hazards arising from the chemical

Hazardous combustion products	:	No hazardous combustion products are known

Special protective equipment and precautions for fire-fighters

Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Specific extinguishing methods	:	Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	:	Refer to protective measures listed in sections 7 and 8. 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 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

Handling

Precautions for safe handling

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

Advice on safe handling : Do not breathe vapours/dust.
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.

Storage

Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8: Exposure controls and personal protection

Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
ethanediol	107-21-1	CEIL (aerosol)	39.4 ppm 100 mg/m3	MY PEL
		TWA (Vapour)	25 ppm	ACGIH
		STEL (Vapour)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m3	ACGIH

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin protection : Impervious clothing
Choose body protection according to the amount and

concentration of the dangerous substance at the work place.

Hand protection		
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Respiratory protection	:	No personal respiratory protective equipment normally required.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Appearance	:	liquid
Colour	:	dark orange
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	8 - 10
Melting point/freezing point	:	< -37 °C
Boiling point/boiling range	:	107 °C
		No data available
Flash point	:	> 121.11 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	15.3 %(V)
Lower explosion limit / Lower flammability limit	:	1 %(V)
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1.0745 (15.6 °C)
Density	:	1.0745 g/cm3 (15.6 °C)

Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
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	:	excessive heat Do not allow evaporation to dryness.
Incompatible materials	:	Acids Aldehydes Alkali metals Alkaline earth metals Bases strong alkalis Strong oxidizing agents Sulphur compounds
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11: Toxicological information

Information on likely routes of exposure : None known.

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 992.76 mg/kg Method: Calculation method

Components:

ethanediol:

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' -oxybisethanol:

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: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): 13,300 mg/kg

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

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Result	:	No skin irritation
Remarks	:	Expected based on components.

Components:

ethanediol:

Species	:	Rabbit
Result	:	No skin irritation

2,2' -oxybisethanol:

Species	:	Human
Result	:	Slight, transient irritation

sodium nitrite:

Assessment	:	No skin irritation
Result	:	No skin irritation

Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

Result	:	No eye irritation
Remarks	:	Expected based on components.

Components:

ethanediol:

Result	:	Slight, transient irritation

2,2' -oxybisethanol:

Species	:	Rabbit
Result	:	Slight, transient irritation

sodium nitrite:

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

Respiratory or skin sensitisation

Skin sensitisation

Not classified due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

Components:

ethanediol:

Test Type	:	Maximisation Test

Species	:	Guinea pig
Assessment	:	Does not cause skin sensitisation.

2,2' -oxybisethanol:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	Directive 67/548/EEC, Annex V, B.6.
Result	:	Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

ethanediol:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Metabolic activation: with and without metabolic activation Result: negative

2,2' -oxybisethanol:

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 479 Result: negative GLP: yes
Genotoxicity in vivo	:	Test Type: In vivo micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative GLP: yes

Carcinogenicity

Not classified due to lack of data.

Components:

sodium nitrite:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

Reproductive toxicity

Not classified due to lack of data.

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

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

Components:

ethanediol:

Exposure routes	:	Ingestion
Target Organs	:	Kidney
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity

Not classified due to lack of data.

Experience with human exposure

Components:

ethanediol:

Ingestion	:	Target Organs: Kidney

2,2' -oxybisethanol:

General Information	:	Liver Kidney

Further information

Product:

Remarks	:	No data available

SECTION 12: Ecological information

Ecotoxicity

Components:

ethanediol:

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	:	LC50 (Daphnia magna (Water flea)): > 10,000 mg/l

aquatic invertebrates		Exposure time: 48 h Test Type: static test
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 - 13,000 mg/l End point: Growth inhibition Exposure time: 7 d
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

2,2' -oxybisethanol:

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

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/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
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 microorganisms	:	EC10 (activated sludge): 210 mg/l Exposure time: 3 h Test Type: Static Method: OECD Test Guideline 209

Persistence and degradability

Components:

ethanediol:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 90 - 100 % Exposure time: 10 d Method: OECD Test Guideline 301

2,2' -oxybisethanol:

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

Bioaccumulative potential

Components:

ethanediol:

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' -oxybisethanol:

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)

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : No data available

Global warming potential

Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) of the United Nations Framework Convention on Climate Change (UNFCCC)

Components:

octamethylcyclotetrasiloxane [D4]:

20-year global warming potential: 2.66
100-year global warming potential: 0.739
500-year global warming potential: 0.211
Atmospheric lifetime: 0.027 yr
Radiative efficiency: 0.12 Wm2ppb
Further information: Miscellaneous compounds

octamethyltrisiloxane:

20-year global warming potential: 1.17
100-year global warming potential: 0.325
500-year global warming potential: 0.093
Atmospheric lifetime: 0.019 yr
Radiative efficiency: 0.06 Wm2ppb
Further information: Miscellaneous compounds

decamethylcyclopentasiloxane:

20-year global warming potential: 1.04
100-year global warming potential: 0.289
500-year global warming potential: 0.082
Atmospheric lifetime: 0.016 yr
Radiative efficiency: 0.098 Wm2ppb
Further information: Miscellaneous compounds

dodecamethylcyclohexasiloxane:

20-year global warming potential: 0.51
100-year global warming potential: 0.142
500-year global warming potential: 0.04
Atmospheric lifetime: 0.011 yr
Radiative efficiency: 0.086 Wm2ppb
Further information: Miscellaneous compounds

Endocrine disrupting properties

No data available

SECTION 13: Disposal information

Disposal methods

Waste from residues	:	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. 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

UN number	:	Not applicable
Proper shipping name	:	Not applicable
Class	:	Not applicable
Subsidiary risk	:	Not applicable
Packing group	:	Not applicable
Labels	:	Not applicable

IATA-DGR

UN number	:	Not applicable
Proper shipping name	:	Not applicable
Class	:	Not applicable
Subsidiary risk	:	Not applicable
Packing group	:	Not applicable
Labels	:	Not applicable
EmS Code	:	Not applicable
Marine pollutant	:	Not applicable

IMDG-Code

UN number	:	Not applicable
Proper shipping name	:	Not applicable
Class	:	Not applicable
Subsidiary risk	:	Not applicable
Packing group	:	Not applicable
Labels	:	Not applicable
EmS Code	:	Not applicable
Marine pollutant	:	Not applicable

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

Not applicable for product as supplied.

Special precautions for user
Not applicable

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 specific for the hazardous chemical

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013.
Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

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

TW TCSI	:	On the inventory, or in compliance with the inventory
US TSCA	:	All substances listed as active on the TSCA inventory
AU AIIC	:	On the inventory, or in compliance with the inventory
CA. DSL	:	All components of this product are on the Canadian DSL
JP ENCS	:	Not in compliance with the inventory
KR KECI	:	On the inventory, or in compliance with the inventory
PH PICCS	:	On the inventory, or in compliance with the inventory
CN IECSC	:	On the inventory, or 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

Revision Date	:	01.06.2026
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
MY PEL	:	Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
MY PEL / CEIL	:	Ceiling limit airborne concentration

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

MY / EN

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