

ZEREX™ HD EXTENDED LIFE 50/50 Antifreeze Coolant

Version: 3.0 Revision Date: 19.06.2023 Print Date: 07/18/2023

1. PRODUCT AND COMPANY IDENTIFICATION

: ZEREX™ HD EXTENDED LIFE 50/50 Product name

Antifreeze Coolant

Product code : ZXEDRU1

Manufacturer or supplier's details

Company : Valvoline Pte. Ltd.

Address 8 Jurong Town Hall Road, #30-01

Singapore 609434

Singapore

Telephone : 1-800-TEAMVAL (1-800-832-6825)

Emergency telephone number: +1-800-VALVOLINE (+1-800-825-8654), or contact your local

emergency telephone number at 995

E-mail address SDS@valvolineglobal.com

Recommended use of the chemical and restrictions on use

Recommended use : Antifreeze Coolant

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

repeated exposure (Oral)

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

GHS label elements



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Hazard pictograms





Signal word : Warning

Hazard statements : H302 Harmful if swallowed.

H373 May cause damage to organs (Kidney, Liver) 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/ doctor 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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
ETHYLENE GLYCOL	107-21-1	>= 30 -< 50
POTASSIUM HYDROXIDE	1310-58-3	>= 1 -< 3
SODIUM NITRITE	7632-00-0	>= 0.1 -< 0.25

4. FIRST AID MEASURES

General advice : Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

If inhaled : If unconscious, place in recovery position and seek medical



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advice.

If symptoms persist, call a physician.

In case of 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.

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.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or

carbon dioxide.

Unsuitable extinguishing

media

High volume water jet

Hazardous combustion

products

No hazardous combustion products are known

Specific extinguishing

methods

Standard procedure for chemical fires.

Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Special protective equipment :

for firefighters

Wear self-contained breathing apparatus for firefighting if

necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and

Refer to protective measures listed in sections 7 and 8.

Use personal protective equipment.



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emergency procedures

Environmental precautions 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.

7. HANDLING AND STORAGE

fire and explosion

Advice on protection against : 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.

Conditions for safe storage Keep container tightly closed in a dry and well-ventilated

Electrical installations / working materials must comply with

the technological safety standards.

Further information on

storage stability

: No decomposition if stored and applied as directed.

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	PEL (short term)	50 ppm 127 mg/m3	SG OEL
		TWA (Vapour)	25 ppm	ACGIH
		STEL (Vapour)	50 ppm	ACGIH
		STEL	10 mg/m3	ACGIH



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		(Inhalable fraction, Aerosol only)		
POTASSIUM HYDROXIDE	1310-58-3	PEL (short term)	2 mg/m3	SG OEL
		С	2 mg/m3	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.

Hygiene measures : When using do not eat or drink.

When using do not smoke.

Wash hands before breaks and at the end of workday.

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 : < -36 °C

Boiling point/boiling range : 107 °C

Flash point : > 121.11 °C



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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 : 23.3333333 hPa (20 °C)

Calculated Vapor Pressure

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

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.

Valvoline, Global

SAFETY DATA SHEET

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Conditions to avoid : excessive heat

Exposure to moisture

Incompatible materials : Acids

Alcohols Aldehydes Alkali metals

Alkaline earth metals

aluminum Amines Bases

chlorinated solvents

Fluorine

Hydrogen fluoride

Lead lithium sodium strong bases

Strong oxidizing agents Sulphur compounds

Zinc Peroxides

Hazardous decomposition

products

No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 965.85 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



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inhalation toxicity

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

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

administration)

Application Route: Intraperitoneal

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

POTASSIUM HYDROXIDE:

Acute oral toxicity LD50 (Rat): 333 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

Not classified based on available information.

Product:

: No skin irritation Result

Remarks : Expected based on components.

Components:

ETHYLENE GLYCOL:

Species Rabbit

Result No skin irritation

POTASSIUM HYDROXIDE:

Species Rabbit

Result Corrosive after 3 minutes or less of exposure

SODIUM NITRITE:

Assessment No skin irritation Result No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.



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Product:

Result : No eye irritation

Remarks : Expected based on components.

Components:

ETHYLENE GLYCOL:

Result : Slight, transient irritation

POTASSIUM HYDROXIDE:

Species : Rabbit
Result : Corrosive

SODIUM NITRITE:

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

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.

POTASSIUM HYDROXIDE:

Test Type : Maximisation Test

Species : Guinea pig

Assessment : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

ETHYLENE GLYCOL:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella typhimurium



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Metabolic activation: with and without metabolic activation

Result: negative

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

Not classified based on available information.

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.

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Components:

ETHYLENE GLYCOL:

Ingestion : Target Organs: Kidney

Further information

Product:

Remarks : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.



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Chronic aquatic toxicity : Not classified based on available information.

Components:

ETHYLENE GLYCOL:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 27,540 mg/l

> Exposure time: 96 h Test Type: static test

LC50 (Pimephales promelas (fathead minnow)): 8,050 mg/l

Exposure time: 96 h

aquatic invertebrates

Toxicity to daphnia and other : LC50 (Daphnia magna (Water flea)): > 10,000 mg/l

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 Days

Toxicity to fish (Chronic

toxicity)

: NOEC (Pimephales promelas (fathead minnow)): 32,000 mg/l

Exposure time: 7 d

aquatic invertebrates

(Chronic toxicity)

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 24,000 mg/l

Exposure time: 7 d

Ecotoxicology Assessment

Acute aquatic toxicity : Not classified based on available information.

Chronic aquatic toxicity : Not classified based on available information.

POTASSIUM HYDROXIDE:

Toxicity to fish LC50 (Gambusia affinis (Mosquito fish)): 80 mg/l

Exposure time: 96 h Test Type: static test

Ecotoxicology Assessment

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

Chronic aquatic toxicity Not expected to cause long-term toxicity to fish., Not expected

to cause long-term toxicity to aquatic invertebrates., Not expected to cause long-term toxicity to aquatic plants.



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Chronic aquatic toxicity Category 3; Harmful to aquatic life

with long lasting effects.

SODIUM NITRITE:

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 2.35 - 3.81

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)

Toxicity to fish (Chronic

toxicity)

: NOEC (Ictalurus catus (catfish)): 6.16 mg/l

Exposure time: 31 d

Test Type: flow-through test

aquatic invertebrates (Chronic toxicity)

Toxicity to daphnia and other : 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

Ecotoxicology Assessment

Acute aquatic toxicity Acute aquatic toxicity Category 1; Very toxic to aquatic life.

Chronic aquatic toxicity : Not classified based on available information.



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Persistence and degradability

Components:

ETHYLENE GLYCOL:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 90 - 100 %

Exposure time: 10 d

Method: OECD Test Guideline 301

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

SODIUM NITRITE:

Partition coefficient: n- : log Pow: -3.

octanol/water

: log Pow: -3.700 (25 °C)

Mobility in soil

Components:

SODIUM NITRITE:

Stability in soil : Remarks: Not expected to adsorb on soil.

Other adverse effects

Product:

Additional ecological

information

: No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Do not dispose of waste into sewer.



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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.

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

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

IMDG-Code

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

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



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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.

15. REGULATORY INFORMATION

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

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and : Not applicable

Environmental Protection and Management (Hazardous Substances) Regulations

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

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

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)

16. OTHER INFORMATION

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Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

SG OEL : Singapore. Workplace Safety and Health (General Provisions)

Regulations - First Schedule Permissible Exposure Limits of

Toxic Substances.

ACGIH / TWA : 8-hour, time-weighted average ACGIH / STEL : Short-term exposure limit

ACGIH / C : Ceiling limit

SG OEL / PEL (short term) : Permissible Exposure Level (PEL) Short Term

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 Harmonized 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 Organization; ISHL - Industrial Safety and Health Law (Japan); ISO -International Organisation for Standardization; 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; 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 - Organization 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



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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.

SG / EN

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