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GHS classification in accordance with the Hazardous Products Regulations

### **SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

**Product identifier** 

Trade name : ZEREX™ G48® 50/50

Antifreeze Coolant

Product code : 875537

Details of the supplier of the safety data sheet

Valvoline Canada Corp 905 Winston Churchill Blvd Mississauga ON L5J 4P2

Canada

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

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)

SDS@valvoline.com

### **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.

Precautionary statements : **Prevention:** 



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P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

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.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON

CENTER/ doctor if you feel unwell. Rinse mouth.

P308 + P313 IF exposed or concerned: Get medical advice/

attention. **Storage:** 

P405 Store locked up.

Disposal:

P501 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	>=30.00 - < 60.00
		STOT RE 2; H373	
0 ETI IV ( LIEV ( A LIEV )	1070000		4.00 7.00
2-ETHYLHEXANOIC ACID,	19766-89-3	Repr. 2; H361	>=1.00 - < 5.00
SODIUM SALT			
000000000000000000000000000000000000000	1000 00 1	E 1 % 0A 11040	0.40
SODIUM BORATE	1303-96-4	Eye Irrit. 2A; H319	>=0.10 - < 1.00
DECAHYDRATE		D 45 11000	
		Repr. 1B; H360	

Actual concentration or concentration range is withheld as a trade secret

### **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.

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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 tachypnia, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The

most significant laboratory finding in ethylene glycol

intoxication is severe metabolic acidosis. No symptoms known or expected.

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

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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

:

Further information : 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

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**

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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.

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	(c)	100 mg/m3	CA AB OEL
		TWA	10 mg/m3 particulate	CA BC OEL
		STEL	20 mg/m3 particulate	CA BC OEL
		С	100 mg/m3 aerosol	CA BC OEL
		С	50 ppm Vapour	CA BC OEL
		С	50 ppm 127 mg/m3 Vapour and mist	CA QC OEL
SODIUM BORATE DECAHYDRATE	1303-96-4	TWA	1 mg/m3	CA AB OEL
		STEL	3 ppm	CA AB OEL
		TWA	2 mg/m3 Inhalable (Borate)	CA BC OEL
		STEL	6 mg/m3 Inhalable (Borate)	CA BC OEL
		TWAEV	2 mg/m3 inhalable dust	CA QC OEL
		STEV	6 mg/m3 inhalable dust	CA QC OEL



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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.

### **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid

Colour : blue

Odour : No data available

Odour Threshold : No data available

pH : 7.5 - 11

Melting point/freezing point : No data available

Boiling point/boiling range : 100 °C

(1,013.333333 hPa)

Calculated Phase Transition Liquid/Gas

Flash point : > 121 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper : 15.3 %(V)



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flammability limit GLP: Calculated Explosive Limit

Lower explosion limit / Lower

flammability limit

: 1.2 %(V)

GLP: Calculated Explosive Limit

Vapour pressure : 23.3333333 hPa (20 °C)

Calculated Vapor Pressure

Relative vapour density : No data available

Relative density : No data available

Density : 1.0738 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

No data available

Incompatible materials : Aldehydes

Alkali metals

Alkaline earth metals

aluminum Lead sodium



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> Strong acids strong alkalis Strong bases

Strong oxidizing agents Sulphur compounds

Zinc Peroxides

Not applicable

Hazardous decomposition

No hazardous decomposition products are known. products

### **SECTION 11. TOXICOLOGICAL INFORMATION**

**Acute toxicity** 

Harmful if swallowed.

**Product:** 

: Acute toxicity estimate: 1,043 mg/kg Acute oral toxicity

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.

LC50 (Rat): 10.9 mg/l Acute inhalation toxicity

Exposure time: 1 h

Test atmosphere: dust/mist

Assessment: The substance or mixture has no acute

inhalation toxicity

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

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

administration)

Application Route: Intraperitoneal

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

2-ETHYLHEXANOIC ACID, SODIUM SALT:

: LD50 (Rat): 2,043 mg/kg Acute oral toxicity

Remarks: The toxicological data has been taken from

products of similar composition.

Acute inhalation toxicity Assessment: The substance or mixture has no acute

inhalation toxicity



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Remarks: The toxicological data has been taken from

products of similar composition.

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: The toxicological data has been taken from

products of similar composition.

**SODIUM BORATE DECAHYDRATE:** 

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg

Assessment: The substance or mixture has no acute oral

toxicity

Remarks: The toxicological data has been taken from

products of similar composition. No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat): > 2.04 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

GLP: yes

Assessment: The substance or mixture has no acute

inhalation toxicity

Remarks: The toxicological data has been taken from

products of similar composition. No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

GLP: yes

Assessment: The substance or mixture has no acute dermal

toxicity

Remarks: The toxicological data has been taken from

products of similar composition. No mortality observed at this dose.

Skin corrosion/irritation

Not classified based on available information.

Product:

Result : Repeated exposure may cause skin dryness or cracking.

**Components:** 

**ETHYLENE GLYCOL:** 

Species : Rabbit

Result : No skin irritation

2-ETHYLHEXANOIC ACID, SODIUM SALT:

Species : Rabbit

Result : Slight, transient irritation

Remarks : The toxicological data has been taken from products of similar

composition.



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**SODIUM BORATE DECAHYDRATE:** 

Species : Rabbit

Result : Slight, transient irritation

Serious eye damage/eye irritation

Not classified based on available information.

**Components:** 

**ETHYLENE GLYCOL:** 

Result : Slight, transient irritation

2-ETHYLHEXANOIC ACID, SODIUM SALT:

Species : Rabbit

Result : Slight, transient irritation

Remarks : The toxicological data has been taken from products of similar

composition.

**SODIUM BORATE DECAHYDRATE:** 

Species : Rabbit

Result : 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.

2-ETHYLHEXANOIC ACID, SODIUM SALT:

Test Type : Maximisation Test

Species : Guinea pig

Assessment : Does not cause skin sensitisation.

Method : OECD Test Guideline 406

Result : Does not cause skin sensitisation.

Remarks : The toxicological data has been taken from products of similar

composition.

**SODIUM BORATE DECAHYDRATE:** 

Test Type : Buehler Test Species : Guinea pig

Assessment : Does not cause skin sensitisation.

Remarks : The toxicological data has been taken from products of similar

composition.

Germ cell mutagenicity

Not classified based on available information.



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**Components:** 

**ETHYLENE GLYCOL**:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

2-ETHYLHEXANOIC ACID, SODIUM SALT:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

Remarks: The toxicological data has been taken from

products of similar composition.

Carcinogenicity

Not classified based on available information.

Reproductive toxicity

May damage fertility or the unborn child.

**Components:** 

2-ETHYLHEXANOIC ACID, SODIUM SALT:

Reproductive toxicity - : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

**SODIUM BORATE DECAHYDRATE:** 

Reproductive toxicity - : 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.

**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



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#### **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

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-ETHYLHEXANOIC ACID, SODIUM SALT:

Toxicity to fish : LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l

Exposure time: 96 h
Test Type: semi-static test

Method: OECD Test Guideline 203



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Toxicity to daphnia and other

aquatic invertebrates

: EC50 (Daphnia magna (Water flea)): 910 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 49.3 mg/l

End point: Growth inhibition

Exposure time: 72 h Test Type: static test

Remarks: The toxicological data has been taken from

products of similar composition.

SODIUM BORATE DECAHYDRATE:

Toxicity to fish : LC50 (Fish): > 100 mg/l

Exposure time: 96 h

Remarks: The toxicological data has been taken from

products of similar composition.

Toxicity to daphnia and other

aquatic invertebrates

: LC50 (Daphnia magna (Water flea)): 133 mg/l

Exposure time: 48 h Test Type: static test

Remarks: The toxicological data has been taken from

products of similar composition.

Toxicity to algae : NOEC (Dunaliella tertiolecta (marine algae)): 50 mg/l

> End point: Growth inhibition Exposure time: 240 h Test Type: static test

Remarks: Information refers to the main component.

Toxicity to fish (Chronic

toxicity)

: NOEC (Danio rerio (zebra fish)): 13 mg/l

Exposure time: 4 d

Remarks: Information refers to the main component.

Toxicity to daphnia and other

aquatic invertebrates (Chronic toxicity)

: NOEC (Aquatic invertebrates): 16.6 mg/l

Exposure time: 28 d

Test Type: flow-through test

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-ETHYLHEXANOIC ACID, SODIUM SALT:

Biodegradability : Result: Readily biodegradable.

Biodegradation: > 70 %

Exposure time: 28 d

Method: OECD Test Guideline 301E



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Remarks: The toxicological data has been taken from

products of similar composition.

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-ETHYLHEXANOIC ACID, SODIUM SALT: Partition coefficient: n- : log Pow: 1.3

octanol/water

No data available
Mobility in soil
Components:
No data available
Other adverse effects
No data available

**Product:** 

Additional ecological

information

: No data available

# Components:

#### **SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods** 

General advice : Do not dispose of waste into sewer.

Do not contaminate ponds, waterways or ditches with

chemical or used container.

Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.

Dispose of as unused product. Do not re-use empty containers.

### **SECTION 14. TRANSPORT INFORMATION**

### **International Regulations**



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#### **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.

#### **National Regulations**

#### **TDG**

Not regulated as a dangerous good

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**

Canadian PBT Chemicals : This product contains the following components on the DSL

that are classified as Persistent, Bioaccumulative and/or Toxic

(PBT) under CEPA:

OCTAMETHYLCYCLOTETRASILOXANE

NPRI Components : ETHYLENE GLYCOL

METHANOL TOLUENE

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

TCSI : On the inventory, or 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

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

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TECI: Not in compliance with the inventory

#### **Canadian lists**

No substances are subject to a Significant New Activity Notification.

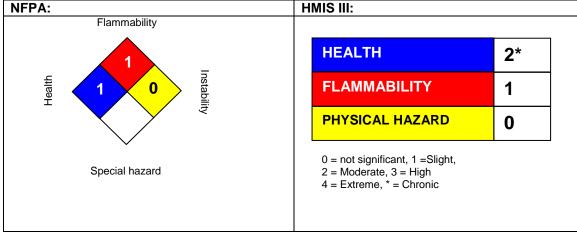
#### **Inventories**

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: 000000091712



NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

### **Full text of H-Statements**

H319 Causes serious eye irritation. H360 May damage fertility or the unborn child. H361 Suspected of damaging fertility or the unborn child. H373 May cause damage to organs through prolonged or repeated exposure if swallowed.	H302	Harmful if swallowed.
H361 Suspected of damaging fertility or the unborn child. H373 May cause damage to organs through prolonged or repeated exposure	H319	Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure	H360	May damage fertility or the unborn child.
may among a angula angu	H361	Suspected of damaging fertility or the unborn child.
if swallowed.	H373	May cause damage to organs through prolonged or repeated exposure
		if swallowed.



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Sources of key data used to compile the Safety Data Sheet Valvoline internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Valvoline's Environmental Health and Safety Department (1-800-VALVOLINE).

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

ACGIH: American Conference of Industrial Hygienists

BEI: Biological Exposure Index

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

CMR: Carcinogenic, Mutagenic or Toxic for Reproduction

FG: Food grade

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

H-statement : Hazard Statement

IATA: International Air Transport Association.

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



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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