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GHS classification in accordance with the Hazardous Products Regulations

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : ZEREX™ HD NITRITE FREE EXTENDED LIFE 50/50 Antifreeze Coolant

Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Coolant and antifreeze.

<p>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)</p> <p>SDS@valvoline.com</p>	<p>Emergency telephone number 1-800-VALVOLINE (1-800-825-8654)</p> <p>Regulatory Information Number 1-800-TEAMVAL (1-800-832-6825)</p> <p>Product Information 1-800-TEAMVAL (1-800-832-6825)</p>
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SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

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

GHS label elements

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:**

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P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.

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

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components


Chemical name	CAS-No.	Classification	Concentration (%)
ETHYLENE GLYCOL	107-21-1	Acute Tox. 4; H302 STOT RE 2; H373	>=30.00 - < 50.00
DIETHYLENE GLYCOL	111-46-6	Acute Tox. 4; H302 STOT RE 2; H373	>=1.00 - < 5.00
DIPOTASSIUM PHOSPHATE	7758-11-4	Acute Tox. 3; H311	>=0.10 - < 1.00

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 breathed in, move person into fresh air.
If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : First aid is not normally required. However, it is

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recommended that exposed areas be cleaned by washing with soap and water.

- In case of eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Obtain medical attention.
Rinse mouth with water.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnea, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.
Harmful if swallowed.
May cause damage to organs through prolonged or repeated exposure if swallowed.
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.

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No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Water spray
Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Alcohols
Aldehydes
carbon dioxide and carbon monoxide
ethers
toxic fumes
Sodium oxides
Hydrocarbons
- Specific extinguishing methods :

Product is compatible with standard fire-fighting agents.
- Further information : Standard procedure for chemical fires.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
- Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.



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Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

Other information : Comply with all applicable federal, state, and local regulations.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling : Do not breathe vapours/dust.
Do not smoke.
Container hazardous when empty.
Smoking, eating and drinking should be prohibited in the application area.
For personal protection see section 8.
Dispose of rinse water in accordance with local and national regulations.

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

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
		C	100 mg/m3 aerosol	CA BC OEL
		C	50 ppm Vapour	CA BC OEL
		C	50 ppm 127 mg/m3 Vapour and mist	CA QC OEL

Engineering measures : Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

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Personal protective equipment

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Not required under normal conditions of use. Wear splash-proof safety goggles if material could be misted or splashed into eyes.

Skin and body protection : Wear as appropriate:
Impervious clothing
Safety shoes
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Wear resistant gloves (consult your safety equipment supplier).

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Odour : No data available

Odour Threshold : No data available

pH : 9.0

Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : > 121 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower : No data available

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flammability limit

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : 1.076 g/cm³ (15.6 °C)

Solubility(ies)

Water solubility : soluble

Solubility in other solvents : No data available

Partition coefficient: n-
octanol/water : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous
reactions : Product will not undergo hazardous polymerization.

Conditions to avoid : excessive heat

Incompatible materials : Acids
Aldehydes
Alkali metals
Alkaline earth metals
Bases
strong alkalis
Strong oxidizing agents
Sulphur compounds

Hazardous decomposition

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products

No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**Inhalation
Skin contact
Eye Contact
Ingestion**Acute toxicity**

Harmful if swallowed.

Product:

Acute oral toxicity : Remarks: Ingestion of medications contaminated with diethylene glycol has caused kidney failure and death in humans. Products containing diethylene glycol should be considered toxic by ingestion.

Acute toxicity estimate: 1,051 mg/kg
Method: Calculation method

Acute dermal toxicity : Remarks: Skin absorption of this material (or a component) may be increased through injured skin.

Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method**Components:****ETHYLENE GLYCOL:**

Acute oral toxicity : LD0 (Human): estimated 1.56 g/kg

Assessment: The component/mixture is classified as acute oral toxicity, category 4.

Acute inhalation toxicity : LC50 (Rat): 10.9 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

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

Acute toxicity (other routes of administration) : LD50 (Rat): 5,010 mg/kg
Application Route: IntraperitonealLD50 (Rat): 3,260 mg/kg
Application Route: Intravenous

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DIETHYLENE GLYCOL:Acute oral toxicity : LD50 (Human): Expected 1,120 mg/kg
Target Organs: KidneyAcute inhalation toxicity : LC50 (Rat): > 4.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: No adverse effect has been observed in acute
inhalation toxicity tests.

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

DIPOTASSIUM PHOSPHATE:

Acute oral toxicity : LD50 (Rat): > 500 mg/kg

LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 420
Assessment: No adverse effect has been observed in acute
oral toxicity tests.

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

LD50 (Rabbit): > 5,000 mg/kg
Method: OECD Test Guideline 402**Skin corrosion/irritation**

Not classified based on available information.

Components:**ETHYLENE GLYCOL:**Species : Rabbit
Result : No skin irritation**DIETHYLENE GLYCOL:**Species : Human
Result : Slight, transient irritation**DIPOTASSIUM PHOSPHATE:**Species : Rabbit
Result : Slight, transient irritation**Serious eye damage/eye irritation**

Not classified based on available information.

Product:

Remarks : Unlikely to cause eye irritation or injury.

Components:**ETHYLENE GLYCOL:**

Result : Slight, transient irritation

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DIETHYLENE GLYCOL:

Species : Rabbit
Result : Slight, transient irritation

DIPOTASSIUM PHOSPHATE:

Species : Rabbit
Result : Slight, transient irritation

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.

DIETHYLENE GLYCOL:

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

DIPOTASSIUM PHOSPHATE:

Test Type : Local lymph node assay
Species : Mouse
Assessment : Did not cause sensitisation on laboratory animals.
Method : OECD Test Guideline 429
Remarks : Information given is based on data obtained from similar substances.

Germ cell mutagenicity

Not classified based on available information.

Components:**ETHYLENE GLYCOL:**

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

DIETHYLENE GLYCOL:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
GLP: yes

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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

DIPOTASSIUM PHOSPHATE:

Genotoxicity in vitro : Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity

Not classified based on available information.

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.

DIETHYLENE GLYCOL:

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:****ETHYLENE GLYCOL:**

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Ingestion : Target Organs: Kidney

DIETHYLENE GLYCOL:General Information : Liver
Kidney**Further information****Product:**

Remarks : No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : 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 testLC50 (Pimephales promelas (fathead minnow)): 8,050 mg/l
Exposure time: 96 hToxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 10,000 mg/l
Exposure time: 48 h
Test Type: static testToxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 6,500 - 13,000 mg/l
End point: Growth inhibition
Exposure time: 7 DaysToxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 32,000 mg/l
Exposure time: 7 dToxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 24,000 mg/l
Exposure time: 7 d**DIETHYLENE GLYCOL:**

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

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aquatic invertebrates

Exposure time: 24 h
Test Type: static test
Method: DIN 38412**DIPOTASSIUM PHOSPHATE:**

Toxicity to fish

: LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
Remarks: Information given is based on data obtained from similar substances.Toxicity to daphnia and other
aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae

: EC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.NOEC (Desmodesmus subspicatus (green algae)): > 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Information given is based on data obtained from similar substances.**Persistence and degradability****Components:****ETHYLENE GLYCOL:**

Biodegradability

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

Biodegradability

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

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DIPOTASSIUM PHOSPHATE:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

No data available

Bioaccumulative potential**Components:****ETHYLENE GLYCOL:**Bioaccumulation : Species: Crayfish (Procambarus)
Bioconcentration factor (BCF): 0.27
Exposure time: 61 d
Concentration: 1000 mg/l
Method: Flow through

Partition coefficient: n-octanol/water : log Pow: -1.36

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

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

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.

Dispose of in accordance with all applicable local, state and federal regulations.

Contaminated packaging : Empty remaining contents.

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Dispose of as unused product.
Empty containers should be taken to an approved waste
handling site for recycling or disposal.
Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**International 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.

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

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory



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TSCA : On TSCA Inventory

Inventories

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

SECTION 16. OTHER INFORMATION

Further information

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<p>NFPA:</p> <p style="text-align: center;">Flammability</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">Health 0</div> <div style="text-align: center;">1</div> <div style="text-align: center;">0 Instability</div> </div> <p style="text-align: center;">Special hazard.</p>	<p>HMIS III:</p> <table border="1" style="width: 100%;"> <tr> <td style="background-color: blue; color: white;">HEALTH</td> <td style="text-align: center;">1*</td> </tr> <tr> <td style="background-color: red; color: white;">FLAMMABILITY</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="background-color: yellow;">PHYSICAL HAZARD</td> <td style="text-align: center;">0</td> </tr> </table> <p>0 = not significant, 1 =Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic</p>	HEALTH	1*	FLAMMABILITY	1	PHYSICAL HAZARD	0
HEALTH	1*						
FLAMMABILITY	1						
PHYSICAL HAZARD	0						

NFPA Flammable and Combustible Liquids Classification

Combustible Liquid Class IIIB

Full text of H-Statements

- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Sources of key data used to compile the Safety Data Sheet
Valvoline internal data including own and sponsored test reports
The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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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

NFPA : National Fire Protection Association

NIOSH : National Institute for Occupational Safety and Health

OSHA : Occupational Safety and Health Administration

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PMRA : Health Canada Pest Management Regulatory Agency
RTK : Right to Know
WHMIS : Workplace Hazardous Materials Information System