1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274-5263)

Product name	Zerex® ORIGINAL ANTIFREEZE COOLANT
Product code	ZX002
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid
CAUTION! Skin sensitizer, Moderate skin irritant, Moderate eye irritant.

Potential Health Effects

Routes of exposure

Skin absorption, Skin contact, Eye Contact

Eye contact

May cause mild eye irritation. Symptoms include stinging, tearing, and redness.

Skin contact

May cause mild skin irritation. Symptoms may include redness and burning of skin. Although rare, skin contact with ethylene glycol may cause allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects). Passage of this material into the body through the skin is possible, and may add to toxic effects from breathing or swallowing.

Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful.

Inhalation

Breathing of vapor or fume is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful.

Aggravated Medical Condition

No data

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include:, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, involuntary eye movement, kidney damage

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, kidney damage, Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans:, central nervous system effects, liver abnormalities, kidney damage, liver damage

Carcinogenicity

Based on the available information, this material cannot be classified with regard to carcinogenicity., This material is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive hazard.

Ethylene glycol has caused birth defects in animal studies at high oral doses. However, it did not cause harm to the pregnant animal or to the fetus when applied to the skin of the pregnant animal.

Other information

No data

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
ETHYLENE GLYCOL	107-21-1	>=90-<=100%
INORGANIC SALT	NJTS# 254504001-5237	>=1.5-<5%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

Notes to physician

Hazards: 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.

Treatment: 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.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

dry chemical, alcohol-resistant foam, carbon dioxide (CO2)

Hazardous combustion products

May form:, carbon dioxide and carbon monoxide, various hydrocarbons

Precautions for fire-fighting

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA).

Flammability Class for Flammable Liquids

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

No data

Environmental precautions

No data

Methods for cleaning up

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed.

Storage

No data

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

ETHYLENE GLYCOL		**107-21-1**	
ACGIH	Ceiling Limit Value:	100 mg/m3	Aerosol.

General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Eye protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and body protection

To prevent repeated or prolonged skin contact, wear impervious clothing.Wear resistant gloves such as:

Respiratory protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	No data

Colour	No data
Odour	No data
Boiling point/range	330 °F / 166 °C@ 760 mmHg
pH	10.7
Flash point	250 °F / 121 °C
Evaporation rate	No data
Explosion limits	3.2 %(V) 15.3 %(V)
Vapour pressure	23.3333333 hPa @ 68 °F / 20 °C
Vapour density	No data
Density	1.1294 g/cm3 @ 60.01 °F / 15.56 °C 9.388 lb/gal @ 60.1 °F / 15.6 °C
Solubility	No data
Partition coefficient (n-octanol/water)	No data
Autoignition temperature	No data

10. STABILITY AND REACTIVITY

Stability

Stable

Conditions to avoid

None known.

Incompatible products

Avoid contact with:, strong oxidizing agents

Hazardous decomposition products

May form:, carbon dioxide and carbon monoxide, various hydrocarbons

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

ETHYLENE GLYCOL	LD 50 Rat: 6,140 mg/kg LD 50 Mouse: 14,600 mg/kg

INORGANIC SALT	LD 50 Rat: 500 mg/kg

Acute inhalation toxicity

ETHYLENE GLYCOL	LC 50 Rat: 10.9 mg/l, 1 h

Acute dermal toxicity

ETHYLENE GLYCOL	LD 50 Rabbit: 10,611 mg/kg
INORGANIC SALT	LD 50 Rabbit: 300 mg/kg

12. ECOLOGICAL INFORMATION

Aquatic toxicity

Acute and Prolonged Toxicity to Fish
No data

Acute Toxicity to Aquatic Invertebrates
No data

Environmental fate and pathways
No data

13. DISPOSAL CONSIDERATIONS

Waste disposal methods
Destroy by liquid incineration. Dispose of in accordance with all applicable local, state and federal regulations.

14. TRANSPORT INFORMATION

Dangerous goods descriptions may not reflect package size, quantity, end-use or region-specific exceptions that can be applied to shipments. Consult shipping documents for material-specific descriptions.

15. REGULATORY INFORMATION

California Prop. 65
This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other harm.

SARA Hazard Classification Acute Health Hazard

SARA 313 Component(s)

ETHYLENE GLYCOL	107-21-1	90%

OSHA Hazards
Skin sensitizer
Moderate skin irritant
Moderate eye irritant

	Health	Flammability	Reactivity	Other
HMIS	1*	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances.

This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).