



## MSDS

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

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone	1-800-ASHLAND (1-800-274-5263)
Product name	ETHYLENE GLYCOL	
Product code	20005	
Product Use Description	No data	
<b>2. HAZARDS IDENTIFICATION</b>		

#### Emergency Overview

Appearance: liquid,, colorless

WARNING! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA IF SWALLOWED. MAY CAUSE EYE IRRITATION.

#### Potential Health Effects

##### **Routes of exposure**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion - Industrial products are not meant to be swallowed

##### **Eye contact**

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

## **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. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

## **Ingestion**

Swallowing this material may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol.

## **Inhalation**

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

## **Aggravated Medical Condition**

Pre-existing disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions), Liver, kidney, Exposure to this material may aggravate any pre-existing condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemia's.

## **Carcinogenicity**

This material is not expected to cause cancer in humans since it did not cause cancer in laboratory animals. 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.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
ETHYLENE GLYCOL	107-21-1	<=100%

### 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, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

## 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 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.

**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

Carbon dioxide (CO<sub>2</sub>), Dry chemical, Water spray, Alcohol-resistant foam

### Hazardous combustion products

Alcohols, Aldehydes, ethers, toxic fumes, carbon dioxide and carbon monoxide

## **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). No special precautions necessary when fighting fires involving this product.

## **Flammability Class for Flammable Liquids**

Combustible Liquid Class IIIB

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions**

For personal protection see section 8.

### **Environmental precautions**

Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required, that a spill has occurred.

### **Methods for cleaning up**

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

## **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. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of

this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

## Storage

Store in a cool, dry, ventilated area. Do not store near extreme heat, open flame, or sources of ignition.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

ETHYLENE GLYCOL		107-21-1	
ACGIH	Ceiling Limit Value:	100	Aerosol.
		mg/m <sup>3</sup>	

### 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

General room ventilation should be adequate for normal conditions of use. However, if unusual operating conditions exist, 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.

### Eye protection

Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

## Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.

Wear resistant gloves such as:

Natural Rubber

polyvinyl chloride

polyvinyl alcohol

Polyethylene

neoprene -- unsupported

neoprene - supported

## Respiratory protection

Respiratory protection is not required under normal conditions of use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state</b>	liquid
<b>Form</b>	viscous
<b>Colour</b>	colourless
<b>Odour</b>	mild, sweet
<b>Boiling point/boiling range</b>	197.60 °C / 387.7 °F @ 101.32 kPa
<b>Melting point/range</b>	9 °F / -13 °C
<b>pH</b>	No data
<b>Flash point</b>	232 °F / 111 °C, Closed Cup
<b>Evaporation rate</b>	< 1.00 (N-Butyl Acetate)

<b>Explosion limits</b>	3.2 %(V) 15.3 %(V)
<b>Vapour pressure</b>	0.01 kPa @ 77 °F / 25 °C
<b>Vapour density</b>	2.14 (AIR=1)
<b>Density</b>	1.114 g/cm <sup>3</sup> @ 68.00 °F / 20.00 °C
	9.28 lb/gal @ 68 °F / 20 °C
<b>Solubility</b>	completely soluble in water
<b>Partition coefficient: n-octanol/water</b>	No data
<b>log Pow</b>	-1.36
<b>Autoignition temperature</b>	748 °F / 398 °C

## 10. STABILITY AND REACTIVITY

### Stability

Stable.

### Conditions to avoid

### Incompatible products

Alkaline earth metals, Alkali metals, Strong acids, Strong oxidizing agents, Sulphur compounds, strong alkalis

### Hazardous decomposition products

carbon dioxide and carbon monoxide

### 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

### Acute inhalation toxicity

ETHYLENE GLYCOL no data available

### Acute dermal toxicity

ETHYLENE GLYCOL LD 50 Rabbit: 10,611 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 in accordance with applicable regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

**14. TRANSPORT INFORMATION**

Dangerous goods descriptions (if indicated above) may not reflect package size, 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****California Prop. 65**

WARNING! This product contains a chemical known in the State of California to cause cancer.

ACETALDEHYDE

1,4-DIOXANE

**SARA Hazard  
Classification**

Acute Health Hazard

**SARA 313 Component(s)**

ETHYLENE GLYCOL                      107-21-1                      100%

**Reportable quantity - Product**

US. EPA CERCLA Hazardous Substances (40 CFR 302)                      5000 lbs

**Reportable quantity - Components**

ETHYLENE GLYCOL                      107-21-1                      5000 lbs

	Health	Flammability	Reactivity	Other
<b>HMIS</b>	2*	1	0	
<b>NFPA</b>	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).