

## 1. Product and Company Identification

<b>Material name</b>	<b>ETHYLENE GLYCOL</b>
<b>Version #</b>	02
<b>Revision date</b>	08-26-2011
<b>CAS #</b>	107-21-1
<b>Product Codes</b>	<b>J.T.Baker: 5387, 5845, 9298, 9300, 9346, 9356, L715</b> <b>Macron: 5001, 5037</b>
<b>Synonym(s)</b>	1,2-Ethanediol; glycol; 1,2-Dihydroxyethane; Ethylene Alcohol; Ethulene Dihydrate
<b>Manufacturer</b>	Avantor Performance Materials, Inc.
<b>Address</b>	3477 Corporate Parkway Suite #200 Center Valley, PA 18034 US
<b>Customer Service</b>	855-282-6867
<b>24 Hour Emergency</b>	908-859-2151
<b>Chemtrec</b>	800-424-9300

## 2. Hazards Identification

<b>Emergency overview</b>	<b>WARNING</b>  Harmful if swallowed. Causes eye irritation. Can cause kidney damage. Causes central nervous system effects. May cause reproductive effects.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.
<b>Eyes</b>	Causes eye irritation.
<b>Skin</b>	May cause skin irritation in susceptible persons.
<b>Inhalation</b>	High mist concentrations may cause irritation of respiratory tract.
<b>Ingestion</b>	Harmful if swallowed. Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, blindness, liver damage, irritation, reproductive effects, nerve damage, convulsions, edema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose for humans is about 100 ml. Inhalation of high levels of vapors or mists for prolonged periods of time may also result in toxic effects.
<b>Target organs</b>	Eyes. Central nervous system. Kidney. Reproductive organs.
<b>Chronic effects</b>	Can cause kidney damage. Causes central nervous system effects. May cause adverse reproductive effects - such as birth defects, miscarriages, or infertility based on animal data.
<b>Potential environmental effects</b>	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

## 3. Composition / Information on Ingredients

Components	CAS #	Percent
ETHYLENE GLYCOL	107-21-1	99 - 100

## 4. First Aid Measures

<b>First aid procedures</b>	
<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

<b>Skin contact</b>	Wash skin with soap and water. Get medical attention if irritation develops or persists.
<b>Inhalation</b>	Move to fresh air. Treat symptomatically. Get medical attention, if needed.
<b>Ingestion</b>	Call a physician or poison control center immediately. Only induce vomiting at the instruction of medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
<b>Notes to physician</b>	Keep victim under observation. Treat symptomatically. Symptoms may be delayed.
<b>General advice</b>	In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

## 5. Fire Fighting Measures

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<b>Flammable properties</b>	This product is not flammable. May burn, but does not ignite readily.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water. Carbon dioxide (CO2). Dry chemical powder. Foam.
<b>Unsuitable extinguishing media</b>	None known.
<b>Protection of firefighters</b>	
<b>Specific hazards arising from the chemical</b>	Fire may produce irritating, corrosive and/or toxic gases.
<b>Protective equipment and precautions for firefighters</b>	Use water spray to cool unopened containers. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Cool containers exposed to flames with water until well after the fire is out.
<b>Special protective equipment for fire-fighters</b>	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Wear self-contained breathing apparatus with a full facepiece operated in the positive pressure demand mode when fighting fires.
<b>Specific methods</b>	In the event of fire and/or explosion do not breathe fumes.
<b>Hazardous combustion products</b>	Carbon monoxide and carbon dioxide.

## 6. Accidental Release Measures

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<b>Personal precautions</b>	Wear appropriate protective equipment and clothing during clean-up. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
<b>Methods for containment</b>	Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewer, basements or confined areas.
<b>Methods for cleaning up</b>	<p>Large Spills: Dike far ahead of spill for later disposal. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.</p> <p>Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills in original containers for re-use. Clean up in accordance with all applicable regulations. Collect in a non-combustible container for prompt disposal.</p>

## 7. Handling and Storage

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<b>Handling</b>	Wear appropriate personal protective equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.
<b>Storage</b>	Keep container tightly closed.

## 8. Exposure Controls / Personal Protection

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### ACGIH

Material	Type	Value	Form
ETHYLENE GLYCOL (107-21-1)	TWA	100.0000 mg/m3	Aerosol.

**Engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

### Personal protective equipment

**Eye / face protection** Wear safety glasses with side shields (or goggles).

**Skin protection** Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

**Respiratory protection** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Respirator type: Chemical respirator with organic vapor cartridge, full facepiece, dust and mist filter.

**General hygiene considerations** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**General** Wear chemical protective equipment that is specifically recommended by the manufacturer. Launder contaminated clothing before reuse.

## 9. Physical & Chemical Properties

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<b>Appearance</b>	Clear.
<b>Color</b>	Colorless.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid.
<b>pH</b>	Not available.
<b>Melting point</b>	8.6 °F (-13 °C)
<b>Freezing point</b>	8.6 °F (-13 °C)
<b>Boiling point</b>	386.6 °F (197.3 °C)
<b>Flash point</b>	231.8 °F (111 °C) Closed Cup
<b>Evaporation rate</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	15.3
<b>Flammability limits in air, lower, % by volume</b>	3.2
<b>Vapor pressure</b>	0.012265 kPa at 25°C
<b>Vapor density</b>	2.14
<b>Specific gravity</b>	1.1135 @20°C
<b>Relative density</b>	Not available.
<b>Solubility (water)</b>	Miscible
<b>Partition coefficient (n-octanol/water)</b>	-1.36
<b>Auto-ignition temperature</b>	748 °F (397.8 °C)
<b>Decomposition temperature</b>	Not available.
<b>Molecular weight</b>	62.07 g/mol

Molecular formula C2-H6-O2

## 10. Chemical Stability & Reactivity Information

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<b>Chemical stability</b>	Stable under normal temperature conditions.
<b>Conditions to avoid</b>	Excessive heat.
<b>Incompatible materials</b>	Strong oxidizing agents. Acids.
<b>Hazardous decomposition products</b>	At thermal decomposition temperatures, carbon monoxide and carbon dioxide.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.

## 11. Toxicological Information

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### Toxicological data

Product	Test Results
ETHYLENE GLYCOL (107-21-1)	Acute Dermal LD50 Rabbit: 9530 mg/kg Acute Oral LD50 Rat: 5.89 g/kg
<b>Sensitization</b>	Not a skin sensitizer.
<b>Acute effects</b>	Harmful if swallowed. Can cause kidney damage. Causes central nervous system effects.
<b>Local effects</b>	Causes eye irritation.
<b>Chronic effects</b>	Prolonged exposure may cause chronic effects. Can cause kidney damage. Causes central nervous system effects.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>ACGIH Carcinogens</b>	
ETHYLENE GLYCOL (CAS 107-21-1)	A4 Not classifiable as a human carcinogen.
<b>Skin corrosion/irritation</b>	Defatting, drying and cracking of skin.
<b>Epidemiology</b>	No epidemiological data is available for this product.
<b>Mutagenicity</b>	Not classified.
<b>Neurological effects</b>	Central and/or peripheral nervous system damage. High vapor/aerosol concentrations (attainable only at elevated temperatures) may cause central nervous system effects such as dizziness, drowsiness or headaches.
<b>Reproductive effects</b>	Suspected of damaging the unborn child.
<b>Teratogenicity</b>	Components in this product have been shown to cause birth defects and reproductive disorders in laboratory animals.
<b>Symptoms and target organs</b>	Irritant effects. Drowsiness and dizziness. Decrease in motor functions. Unconsciousness. Birth defects. Renal injury.
<b>Further information</b>	Ingestion of ethylene glycol may result in nausea, vomiting, abdominal cramps, blindness, liver damage, irritation, reproductive effects, nerve damage, convulsions, edema of the lung, cardiopulmonary effects (metabolic acidosis), pneumonia and kidney failure which could result in death. The single lethal dose for humans is about 100 ml. Inhalation of high levels of vapors or mists for prolonged periods of time may also result in toxic effects.

## 12. Ecological Information

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### Ecotoxicological data

Product	Test Results
ETHYLENE GLYCOL (107-21-1)	LC50 Fathead minnow ( <i>Pimephales promelas</i> ): 8050 mg/l 96.00 hours
<b>Ecotoxicity</b>	This product has no known eco-toxicological effects. Not expected to be harmful to aquatic organisms.
<b>Environmental effects</b>	Ecological injuries are not known or expected under normal use. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

<b>Aquatic toxicity</b>	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
<b>Persistence and degradability</b>	The product is expected to be biodegradable.
<b>Partition coefficient (n-octanol/water)</b>	-1.36

### 13. Disposal Considerations

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<b>Disposal instructions</b>	Dispose of contents/container in accordance with local/regional/national/international regulations. Incinerate the material under controlled conditions in an approved incinerator.
<b>Contaminated packaging</b>	Offer rinsed packaging material to local recycling facilities. Since emptied containers retain product residue, follow label warnings even after container is emptied.

### 14. Transport Information

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#### DOT

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

### 15. Regulatory Information

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<b>US federal regulations</b>	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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#### US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

ETHYLENE GLYCOL (CAS 107-21-1)	1.0 %
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#### US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

ETHYLENE GLYCOL (CAS 107-21-1)	Listed.
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#### CERCLA (Superfund) reportable quantity

ETHYLENE GLYCOL: 5000.0000

#### Superfund Amendments and Reauthorization Act of 1986 (SARA)

<b>Hazard categories</b>	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
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<b>Section 311 hazardous chemical</b>	Yes
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<b>Clean Air Act (CAA)</b>	HAPS list
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#### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**State regulations** This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

**US - New Jersey Community RTK (EHS Survey): Reportable threshold**

ETHYLENE GLYCOL (CAS 107-21-1) 500 LBS

**US - Pennsylvania RTK - Hazardous Substances: Listed substance**

ETHYLENE GLYCOL (CAS 107-21-1) Listed.

**Saf-T-Data**  
 Health: 2 - Moderate (Life)  
 Flammability: 1 - Slight  
 Reactivity: 1 - Slight  
 Contact: 2 - Moderate  
 Lab Protective Equip: B - GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
 Storage Color Code: G - Green (General Storage)

**16. Labeling Info**

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**Label Hazard Warning** WARNING  
 Harmful if swallowed. Causes eye irritation. Can cause kidney damage. Causes central nervous system effects. May cause reproductive effects.

**Label Precautions** Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. Keep container closed.

**Label First Aid** Immediately flush eyes with plenty of water for at least 15 minutes. Flush skin thoroughly with water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation develops or persists. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting without advice from poison control center. Do not use mouth-to-mouth method if victim ingested the substance. Never give anything by mouth to a victim who is unconscious or is having convulsions.

**17. Other Information**

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**NFPA ratings**  
 Health: 2  
 Flammability: 1  
 Instability: 0

**Disclaimer**

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