

## Triethylene Glycol

MSDS Number: 7208, 7218

Revision Date: May 10, 2010

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### 1 PRODUCT AND COMPANY IDENTIFICATION

#### Manufacturer

KOST USA, Inc  
1000 Tennessee Ave.

Cincinnati, OH 45229

**Contact:** Customer Service  
**Telephone Number:** (800) 661-9391  
**FAX Number:** (513) 492-5555  
**E-Mail:** sales@kostusa.com  
**Web:** www.kostusa.com

**Product Name:** Triethylene Glycol  
**Revision Date:** May 10, 2010  
**Version:** 1  
**MSDS Number:** 7208, 7218  
**Common Name:** 2-(2-(2-Hydroxyethoxy)ethoxy)ethanol  
**CAS Number:** 112-27-6  
**Product Code:** 7208, 7218  
**Chemical Family:** Glycol  
**Chemical Formula:** C<sub>6</sub>H<sub>14</sub>O<sub>4</sub>  
**Synonyms:** TEG, Triglycol  
**Product Use:** Chemical Intermediate; Glycol

**Emergency Telephone Number: 800-424-9300 (Chemtrec)**

### 2 HAZARDS IDENTIFICATION

**Route of Entry:** Eyes; Skin; Ingestion;  
**Target Organs:** Kidneys  
**Inhalation:** Vapours expected to be slightly irritating.  
**Skin Contact:** May cause irritation.  
**Eye Contact:** Moderately irritating. Vapour or mist may cause irritation  
**Ingestion:** Harmful if swallowed. May cause drowsiness and dizziness.

HMIS® Rating H\*1/F1/PH0  
NFPA-ratings (scale 0-4): Health = 1, Fire = 1, Reactivity = 0

This is not a WHMIS Controlled substance.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

Cas #	Perc.	Chemical Name
112276	>99.0%	Triethylene glycol
111466	<1.0%	Diethylene glycol

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### 4 FIRST AID MEASURES

- Inhalation:** If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.
- Skin Contact:** Remove contaminated clothing and wash before reuse. Promptly flush skin with water until all chemical is removed. Wash with soap and water. Get medical attention if needed.
- Eye Contact:** Immediately flush eyes with large amounts of water for at least 15 minutes, lifting eyelids occasionally to facilitate irrigation. Remove contact lenses after initial 1-2 minutes of flushing and continue flushing. Get immediate medical attention.
- Ingestion:** Do not induce vomiting. For spontaneous vomiting, keep head below hips. Dilute with 1 glass of water. Do NOT give liquids to a drowsy, convulsing or unconscious person. Seek immediate medical attention.

Notes to Physician: May cause significant renal, respiratory and CNS toxicity. May cause significant acidosis. Consider: Gastric lavage with protective airway, administration of ethanol or alcohol dehydrogenase inhibitors, such as fomepizole, as antidotal treatments. Call a doctor or poison control center for guidance.

### 5 FIRE FIGHTING MEASURES

- Flash Point:** 166°C (331°F)
- Flash Point Method:** PMCC
- Autoignition Temperature:** 323°C (613°F)
- LEL:** 0.9% volume
- UEL:** 9.2% volume
- Flammability Classification:** OSHA/NFPA Class IIIB combustible liquid

Extinguishing Media: Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only. Do not use direct water stream.

Specific Hazards: Material will not burn unless preheated. Containers exposed to intense heat from fires should be cooled with large quantities of water.

Protective Equipment: Wear full protective clothing and self-contained breathing apparatus (SCBA).

Hazardous Combustion Products: Smoke may contain the original material in addition but not limited to: Carbon Monoxide, Carbon Dioxide.

### 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Isolate area. Avoid contact with spilled material. Watch out for slippery conditions when spillage. Refer to Section 8 of this Material Safety Data Sheet for personal protective equipment.

Clean Up Methods: Contain spilled material if possible. Collect in suitable and properly labeled containers. Small spills: Pick up excess with inert absorbent material and place into separate waste container. Large Spills: Dike material. Keep away from drains and ground water. Pump into suitable and properly containers or salvage truck for recovery or safe disposal. See Section 13 for disposal considerations.

Additional Advice: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

### 7 HANDLING AND STORAGE

- Handling Precautions:** Do not swallow. Avoid contact with eyes, skin, or clothing. Consider normal working hygiene. Wash thoroughly after handling. Wash clothing before reuse and decontaminate or discard contaminated shoes. Do not expose containers to open flame, excessive heat,

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### Storage Requirements:

or direct sunlight. Do not puncture or drop containers. Handle with care and avoid spillage on the floor (slippage). Keep material out of reach of children. Use local exhaust over processing area.

Keep away from heat, sparks, and flames. Protect container and its fittings from physical damage. Store in cool/dry area. Suitable packing materials. Do not store near food, foodstuffs, drugs or potable water supplies.

## 8

### EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Engineering Controls:

Use mechanical (general) ventilation to control airborne levels below exposure guidelines.

#### Protective Equipment:

HMIS PP, J | Spash Goggles, Gloves, Apron, Dust and Vapor Resp

Eyes/Face Protection: Usage of safety glasses/ goggles is recommended.

Skin Protection: Chemical resistant gloves; Apron; Boots; Face shield or Full suit selection will depend on task. Launder contaminated clothing before use.

Hand Protection: Use of gloves approved to relevant standards made from the following materials may provide suitable protection: PVC, Neoprene rubber or nitrile rubber. Personal hygiene is a key element of effective hand care.

Respiratory Protection: If ventilation does not control airborne concentrations, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.

Ingestion: Use good personal hygiene. do not consume food in the work area. Wash hands before eating, drinking or smoking.

#### Exposure Guidelines/Other:

##### Exposure Limits:

Component	List	Type	Value
Triethylene Glycol	ACGIH	Ceiling Aerosol	100 mg/m <sup>3</sup>

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### PHYSICAL AND CHEMICAL PROPERTIES

#### Appearance:

Colorless

#### Physical State:

Liquid

#### Odor:

Slight to no odor

#### pH:

8.0 estimate

#### Vapor Pressure:

<0.01 mmHg @ 20°C

#### Vapor Density:

5.2 estimate

#### Boiling Point:

>280°C (>538°F)

#### Freezing/Melting Pt.:

-7°C (19°F)

#### Solubility:

Completely

#### Spec Grav./Density:

1.125 @ 20°C

#### Evap. Rate:

0.01

#### Octanol:

-1.24

#### Molecular Weight:

62.068

#### Viscosity:

48.2 mPa.s

#### Molecular Formula:

C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>

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### STABILITY AND REACTIVITY

#### Stability:

Product is stable under normal conditions.

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<b>Conditions to avoid:</b>	High Temperature.
<b>Materials to avoid (incompatibility):</b>	Strong Oxidizing Agents. Strong Acids; Strong Bases.
<b>Hazardous Decomposition products:</b>	Combustion will produce carbon dioxide and, possibly toxic chemicals such as carbon monoxide. Aldehydes; Keytones; Other Organic Acids
<b>Hazardous Polymerization:</b>	Will not occur.

### 11 TOXICOLOGICAL INFORMATION

#### Acute Toxicity:

**Oral ( LD 50):** Rat >2000 mg/kg.

**Inhalation ( LC 50):** 4h, Aersol, Rat >4.95 mg/l. Inhalation of vapours may cause irritation to the respiratory system

**Skin irritation:** May cause moderate skin irritation but insufficient to classify.

**Dermal Toxicity (LD 50):** Rabbit >2000 mg/kg (Low)

**Eye irritation:** Moderately irritating to eyes but insufficient to classify.

**Sensitation:** Not a skin sensitiser

**Chronic Toxicity and Carcinogenicity:** Did not cause cancer in long term animal studies

**Repeated Dose Toxicity:** Shown effects on: Kidney (Diethylenen Glycol)

**Mutagenicity:** No evidence

**Reproductive and Developmental Toxicity:** Affects reproductive system in animals; considered to be secondary to other toxic effects (Diethylene Glycol). Causes foetotoxicity in animals at doses which are maternally toxic.

### 12 ECOLOGICAL INFORMATION

#### Acute Toxicity:

**Fish:** Low toxicity: LC/EC/IC50 > 1000 mg/l

**Aquatic Invertebrates:** Low toxicity: LC/EC/IC >1000 mg/l

**Algae:** Expected Low Toxicity: LC/EC/IC >1000 mg/l

**Microorganisms:** Low Toxicity: LC/EC/IC >100 mg/l

**Mobility:** Dissolves in water. If product enters soil, it will be highly mobile and may contaminate ground water.

**Persistence/degradability:** Inherently biodegradable. Oxidises rapidly by photo-chemical reactions in air.

**Bioaccumulation:** Does not bioaccumulate significantly.

### 13 DISPOSAL CONSIDERATIONS

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This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for toxicity and possible reactivity prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

### 14 TRANSPORT INFORMATION

**US DOT Classification (49CFR)**  
NOT REGULATED

**Canadian Road and Rail Shipping Classification**  
NOT REGULATED

**IMDG**  
NOT REGULATED

**IATA/CAO**  
NOT REGULATED

### 15 REGULATORY INFORMATION

**OSHA Hazard Communication Standard:**  
This product is a "Hazardous Chemical" as defined by the OSHA 29CFR 1910.1200

**SARA Hazardous Categories Section 311/312 (EPCRA):**  
Immediate (Acute): yes  
Delayed (Chronic): yes  
Fire: no  
Reactive: no  
Sudden Release: no

**SARA Toxic Release Inventory Section 313 (TRI):**  
NONE

**California Safe Water Drinking and Toxic Enforcement Act (Proposition 65)**  
This material does not contain any chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

#### Notification Status

AICS (AU)	Listed	
DSL (CA)	Listed	
IECS (CN)	Listed	
ENCS/ISHL (JP)	Listed	(2)-429
TSCA (US)	Listed	
EINECS (EU)	Listed	203-953-2
KECI (KR)	Listed	KE-13201
PICCS (PH)	Listed	



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NZIoC (NZ)      Listed

### COMPONENT / (CAS/PERC) / CODES

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\*Diethylene glycol (111466 <1.0%) HAP, PA, TSCA

\*Triethylene glycol (112276 >99.0%) HAP, PA, TSCA

### REGULATORY KEY DESCRIPTIONS

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HAP = Hazardous Air Pollutants

PA = PA Right-To-Know List of Hazardous Substances

TSCA = Toxic Substances Control Act

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### OTHER INFORMATION

#### Disclaimer:

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained herein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequences of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

END OF MSDS DOCUMENT