PRODUCT NAME: **DIPROPYLENE GLYCOL FRAGRANCE GRADE**

1. PRODUCT AND COMPANY IDENTIFICATION

Monument Chemical Kentucky, LLC  
2450 Olin Road  
Brandenburg, KY 40108  
USA

| REVISION DATE: | 07/30/2013 |
| SUPERCEDES: | 03/04/2009 |

| MSDS Number: | 000000000611 |
| SYNONYMS: | 2,2-dihydroxypropyl ether, 2,2'-dihydroxyisopropyl ether, 2-propanol, 1,1'-oxybis- |
| CHEMICAL FAMILY: | Glycol ether |
| DESCRIPTION / USE | Solvent |
| FORMULA: | HOC3H6OC3H6OH |

2. HAZARDS IDENTIFICATION

| OSHA Hazard Classification: | Mild eye irritant |

Routes of Entry: Inhalation, skin, eyes, ingestion  
Chemical Interactions: No known interactions  
Medical Conditions Aggravated: No data available

Human Threshold Response Data

| Odor Threshold | Not established. |
| Irritation Threshold | Not established. |
Hazardous Materials Identification System / National Fire Protection Association Classifications

<table>
<thead>
<tr>
<th>Hazard Ratings</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical / Instability</th>
<th>PPI / Special hazard</th>
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</thead>
<tbody>
<tr>
<td>HMIS</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>NFPA</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Immediate (Acute) Health Effects

Inhalation Toxicity: Not expected to be toxic by inhalation. Not expected to be an inhalation hazard at ambient conditions. Inhalation of mist or vapor may cause irritation to the mucous membranes of the respiratory tract.

Skin Toxicity: Not expected to be irritating to the skin. Not expected to be toxic from dermal contact.

Eye Toxicity: Contact would be expected to cause minor irritation, consisting of transient redness and swelling. No corneal involvement or visual impairment is expected.

Ingestion Toxicity: Ingestion may cause mild irritation of the gastrointestinal tract and may also cause gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting or diarrhea. Not expected to be toxic by ingestion.

Acute Target Organ Toxicity: May cause mild eye irritation. Ingestion may cause mild gastrointestinal discomfort.

Prolonged (Chronic) Health Effects

Carcinogenicity: The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic.

Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.

Inhalation: There are no known or reported effects from chronic exposure except for effects similar to those experienced from acute exposure.

Skin Contact: There are no known or reported effects from chronic exposure.

Skin Absorption: No significant adverse effects to health would be expected to occur.

Ingestion: There are no known or reported effects from chronic ingestion except for effects similar to those experienced from single exposure.

Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.

Chronic Target Organ Toxicity: This product has not been tested. However, chronic (repeated) exposures to this product would be expected to produce similar effects as seen from acute exposures.

Supplemental Health Hazard Information: No additional health information available.
3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS OR CHEMICAL NAME</th>
<th>CAS #</th>
<th>% RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipropylene glycol</td>
<td>25265-71-8</td>
<td>98 - &lt;= 100</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Inhalation: IF INHALED: Remove individual to fresh air. Seek medical attention if breathing becomes difficult or if respiratory irritation develops.

Skin Contact: IF ON SKIN: Flush skin with water for 15 minutes. Take off all contaminated clothing. Seek medical attention if irritation develops.

Eye Contact: IF IN EYES: Flush eyes with plenty of water for at least 15 minutes. Seek medical attention if irritation develops.

Ingestion: IF SWALLOWED: Immediately drink water to dilute. Seek medical attention if symptoms develop. Never give anything by mouth to an unconscious person.

5. FIRE FIGHTING MEASURES

Flammability Summary (OSHA): Combustible above 93 deg. C / 200 deg. F.

Flammable Properties

Flash Point: 138 DEG°C (Open cup)

Autoignition Temperature: No data

Fire / Explosion Hazards: Material may be ignited only if preheated to high temperatures, for example in a fire.

Extinguishing Media: Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires. Water or foam may cause frothing if liquid solvent or oil is burning but it still may be a useful extinguishing agent if carefully applied to the fire.

Fire Fighting Instructions: In case of fire, use normal fire-fighting equipment and the personal protective equipment recommended in Section 8 to include a NIOSH approved self-contained breathing apparatus. Use water to cool containers.

Hazardous Combustion Products: Carbon monoxide, Carbon dioxide

Upper Flammable / Explosive Limit, % in air: No data

Lower Flammable / Explosive Limit, % in air: No data
6. ACCIDENTAL RELEASE MEASURES

Personal Protection for Emergency Situations: Use the personal protective equipment recommended in Section 8 and a NIOSH approved self-contained breathing apparatus.

Spill Mitigation Procedures

Air Release: Vapors may be suppressed by the use of water fog. Contain all liquids for treatment or disposal.

Water Release: This material is miscible in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so. Continue to handle as described in land spill.

Land Release: Create a dike or trench to contain materials. Absorb spill with inert material (e.g., dry sand, clay, earth or commercial absorbent), then place in a chemical waste container. Avoid runoff into storm sewers and ditches which lead to waterways. Contain all liquids for treatment or disposal.

Additional Spill Information: Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel. Utilize emergency response personal protection equipment prior to the start of any response. Evacuate all non-essential personnel. Dispose of spill residues per guidelines under Section 13, Disposal Consideration.

7. HANDLING AND STORAGE

Handling: Do not take internally. Avoid contact with skin, eyes and clothing.

Storage: Store in a cool, dry and well ventilated place. Isolate from incompatible materials.

Shelf Life Limitations: See label or certificate of analysis for shelf life if applicable.

Incompatible Materials for Storage: Refer to Section 10, "Incompatible Materials."

Do Not Store At temperatures Above: 49 DEG°C /

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation: Ventilation beyond that of general exhaust is not normally required. No exposure limits exist for the constituents of this product.

Protective Equipment for Routine Use of Product

Respiratory Protection: Respiratory protection not normally needed.
Respirator Type: Not normally required.
Skin Protection: Wear impervious gloves to avoid skin contact.
Eye Protection: Use safety glasses with side shields.
Protective Clothing Type: Butyl rubber, Nitrile

Exposure Limit Data

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS #</th>
<th>Name of Limit</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Data Found</td>
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</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>liquid</td>
</tr>
<tr>
<td>Form</td>
<td>clear</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Mild glycol odor</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>134.17</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.02</td>
</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Boiling Point</td>
<td>232 DEG°C 450 DEG°F</td>
</tr>
<tr>
<td>Freezing Point</td>
<td>-40 DEG°C</td>
</tr>
<tr>
<td>Melting Point</td>
<td>No data</td>
</tr>
<tr>
<td>Density</td>
<td>8.5lb/gal</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>&lt; 0.01 mmHg (@ 20 Deg. C)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>4.6</td>
</tr>
<tr>
<td>Viscosity</td>
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</tr>
<tr>
<td>Fat Solubility</td>
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<tr>
<td>Solubility in Water</td>
<td>Completely miscible</td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water</td>
<td>No data</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data</td>
</tr>
<tr>
<td>Oxidizing</td>
<td>None established</td>
</tr>
<tr>
<td>Volatiles, % by vol.</td>
<td>No data</td>
</tr>
<tr>
<td>VOC Content</td>
<td>0.00 wt%/wt / 0.00 lb/gal</td>
</tr>
<tr>
<td>HAP Content</td>
<td>0.00 wt%/wt / 0.00 lb/gal</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Stability and Reactivity Summary: Stable under normal conditions. Not sensitive to mechanical shock. Product will not undergo hazardous polymerization.

Conditions to Avoid: Sparks, open flame, other ignition sources, and elevated temperatures.

Chemical Incompatibility: Strong oxidizing agents
Decomposition Temperature: 218 DEG°C
11. TOXICOLOGICAL INFORMATION

Component Animal Toxicology
Oral LD50 value:
Dipropylene glycol LD50 = 14,850 mg/kg Rat

Component Animal Toxicology
Dermal LD50 value:
Dipropylene glycol LD50 > 2,000 mg/kg Rabbit

Component Animal Toxicology
Inhalation LC50 value:
Dipropylene glycol No data

Product Animal Toxicity
Oral LD50 value: LD50 > 5,000 mg/kg rat
Dermal LD50 value: LD50 > 2,000 mg/kg rabbit
Inhalation LC50 value: no data available
Skin Irritation: Not expected to be irritating to the skin.
Eye Irritation: This material is expected to be slightly irritating.
Skin Sensitization: This material is not known or reported to be a skin or respiratory sensitizer.
Acute Toxicity: May cause mild eye irritation. Ingestion may cause mild gastrointestinal discomfort.
Subchronic / Chronic Toxicity: Not known or reported to cause subchronic or chronic toxicity.
Reproductive and Developmental Toxicity: Not known or reported to cause reproductive or developmental toxicity.
Mutagenicity:
Dipropylene glycol This product was determined to be non-mutagenic in the Ames assay.
Carcinogenicity:
Dipropylene glycol The carcinogenicity has been evaluated through animal study and it was found not to be carcinogenic.
12. ECOLOGICAL INFORMATION

Overview: No aquatic toxicity data is available for this product. This product is expected to have low toxicity to fish and other aquatic organisms.

13. DISPOSAL CONSIDERATIONS

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THE MATERIAL. THE USER OF THE MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

Waste Disposal Summary: If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.

Disposal Methods: As a nonhazardous waste, it should be disposed of in accordance with local, state and federal regulations.

Potential US EPA Waste Codes: Not applicable

14. TRANSPORT INFORMATION

Land (US DOT): NOT REGULATED AS A DOT HAZARDOUS MATERIAL
Water (IMDG): NOT REGULATED AS A HAZARDOUS MATERIAL,

Air (IATA): NOT REGULATED AS A HAZARDOUS MATERIAL,
Emergency Response Guide Number: Not applicable
15. REGULATORY INFORMATION

UNITED STATES:
Toxic Substances Control Act (TSCA): The components of this product are listed on the TSCA Inventory of Existing Chemical Substances.
EPA Pesticide Registration Number: None established
FIFRA Listing of Pesticide Chemicals (40 CFR 180): Not registered in the US under FIFRA.

Superfund Amendments and Reauthorization Act (SARA) Title III:
Hazard Categories Sections 311 / 312 (40 CFR 370.2):
Health Immediate (Acute) Health Hazard
Physical None

Extremely Hazardous Substance Section 302 - Threshold Planning Quantity:
ZUS_SAR302 TPQ (threshold planning quantity) None established

Reportable Quantity (49 CFR 172.101, Appendix):
ZUS_CERCLA Reportable quantity None established
ZUS_SAR302 Reportable quantity None established

Supplier Notification Requirements (40 CFR 372.45), 313 Reportable Components
ZUS_SAR313 De minimis concentration None established

Clean Air Act Toxic ARP Section 112:
CAA 112R None established

Clean Air Act Socmi:
HON SOC None established

Clean Air Act VOC Section 111:
CAA 111
US. EPA Clean Air Act (CAA) Section 111 SOCMI Intermediate or Final Volatile Organic Compounds (40 CFR 60.489) 01 1996 PROPANOL, OXYBIS-
Clean Air Act Haz. Air Pollutants Section 112:
ZUS_CAAHAP  None established
ZUS_CAAHRP  None established
CAA AP       None established

State Right-to-Know Regulations Status of Ingredients

Pennsylvania:

<table>
<thead>
<tr>
<th>CAS #</th>
<th>COMPONENT NAME</th>
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</thead>
<tbody>
<tr>
<td>25265-71-8</td>
<td>Dipropylene glycol</td>
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ZUSPA_RTK

Pennsylvania: Hazardous substance list
1989-08-11
PROPANOL, OXYBIS-

New Jersey:

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Massachusetts:

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California Proposition 65:

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WHMIS Hazard Classification:

None established

16. OTHER INFORMATION
THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. MONUMENT CHEMICAL BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION BUT, MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT MONUMENT CHEMICAL MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.