3939 Royal Drive, Suite 139 Kennesaw, GA 30144

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647 West Billinis Road, Unit 1 Salt Lake City, Utah 84119

SAFETY DATASHEET: DIPROPYLENEGLYCOL

1. IDENTIFICATION

PRODUCT NAME: DIPROPYLENE GLYCOL

CAS NO: 25265-71-8

SYNONYM: OXYBISPROPANOL





2. HAZARDS IDENTIFICATION

Emergency Overview Color: Colorless Physical State: Liquid. Odor: Odorless

Hazards of product: No significant immediate hazards for emergency response are known

Potential Health Effects

Eye Contact: May cause slight temporary eye irritation. Mist may cause eye irritation. Skin Contact: Prolonged exposure not likely to cause significant skin irritation.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts. Inhalation: Vapors are unlikely due to physical properties.

Ingestion: Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

effects of Repeated Exposure: Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. In animals, effects have been reported on the following organs after ingestion: Kidney. Liver, Nasal tissue.

COMPOSITION

COMPONENT CAS NO % BY WEIGHT

Dipropylene Glycol 25265-71-8 >=99.00%

4. FIRST AID MEASURES

Eve Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention if irritation occurs.

Skin Contact:

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Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact: Not available.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

5. FIRE FIGHTING MEASURES

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 310°C (590°F)

Flash Points: OPEN CUP: 121.11°C (250°F) - 137.78 deg. C (280 deg. F).

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Slightly flammable to flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: Not available. Special Remarks on Explosion Hazards: Not available.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Any absorbent material. Large spills: Contain spilled material if possible. Collect in suitable and properly labeled containers.

Personal Precautions: Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

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Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

7. HANDLING AND STORAGE

Handling

General Handling: Product handled hot may require additional ventilation or local exhaust. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store away from direct sunlight or ultraviolet light. Keep container tightly closed when not in use. Store in a dry place. Protect from atmospheric moisture. Store in the following material(s): Stainless steel. Aluminum. Plasite 3066 lined container. 316 stainless steel. Opaque HDPE plastic container.

Shelf life: Use within 12 Months

Maximum storage temperature 40 °C

8. EXPOSURE CONTROLS AND PERSONAL PROECTION

Exposure Limits None established

Personal Protection

Eye/Face Protection: Use safety glasses (with side shields). If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

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

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state and appearance: Liquid. (Slightly Viscous liquid.)

Odor: Odorless.

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Taste: Not available.

Molecular Weight: 134.18 g/mole

Color: Colorless.

pH (1% soln/water): Not available.

Boiling Point: 231.9°C (449.4°F)

Melting Point: Not available.

Autoignition Temperature: 331°C (628°F)

Specific Gravity: 1.0252 (Water = 1)

Vapor Pressure: >0 kPa (@ 20°C)

Vapor Density: 4.63 (Air = 1)

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

Solubility: Miscible in cold water, hot water, methanol, diethyl ether.

10. STABILITY AND REACTIVITY

Stability/Instability:

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture. Avoid direct sunlight or ultraviolet sources.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Alcohols. Ethers. Organic acids.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

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Ingestion LD50, Rat 13,300 mg/kg

Skin Absorption LD50, Rabbit > 5,000 mg/kg

Inhalation

As product. The LC50 has not been determined.

Sensitization

Skin

No relevant information found.

Respiratory

No relevant information found.

Repeated Dose Toxicity

Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. In animals, effects have been reported on the following organs after ingestion: Kidney. Liver. Nasal tissue.

Chronic Toxicity and Carcinogenicity

Did not cause cancer in laboratory animals.

Developmental Toxicity

Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive Toxicity

In animal studies, repeated exposures did not have any effects on reproductive organs.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 5.63E-09 atm*m3/mole; 25 °C

Estimated. Partition coefficient, n-octanol/water (log Pow): -0.67

Measured Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

Indirect Photodegradation with OH Radicals

Rate Constant Atmospheric Half-life Method 3.133E-11 cm3/s 4.1 h Estimated.

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OECD Biodegradation Tests:

Exposure Time Method Biodegradation

28 d OECD 301F Test 84 % 19 d OECD 302B Test 100 % 24 % 64 d OECD 306 Test

Theoretical Oxygen Demand: 1.91 mg/mg

ECOTOXICITY

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 > 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), static, 96 h: > 10,000 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, static, 48 h, immobilization: > 10,000 mg/l

Toxicity to Micro-organisms

EC50; bacteria, Growth inhibition, 16 h: > 5,000 mg/l

13. DISPOSAL CONSIDERATIONS

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information.

FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Reclaimer. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums.

14. TRANSPORT INFORMATION

DOT Non-Bulk NOT REGULATED

DOT Bulk

NOT REGULATED

IMDG NOT REGULATED

ICAO/IATA NOT REGULATED

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15. REGULATORY INFORMATION

Federal and State Regulations:

Pennsylvania RTK: Dipropylene Glycol TSCA 8(b) inventory: Dipropylene Glycol

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Dipropylene Glycol CAS No: 25265-71-8 Amount: >=99.0%

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada)

DSCL (EEC):

This product is not classified according to the EU regulations. S24/25- Avoid contact with skin and eyes.

HMIS (U.S.A.):

Health Hazard: 1 Fire Hazard: 1 Reactivity: 0

Personal Protection: a

National Fire Protection Association (U.S.A.):

Health: 1 Flammability: 1 Reactivity: 0

Specific hazard:

Protective Equipment:

Not applicable. Lab coat. Not applicable. Safety glasses.

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16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall CLP Chemicals be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if CLP Chemicals has been advised of the possibility of such damages.

Date Created: 6/23/2015 Date Updated: 6/23/2015