

The MSDS format adheres to the standards and regulatory requirements of the United States and may not meet regulatory requirements in other countries.

DuPont Tate & Lyle Bio Products
Material Safety Data Sheet

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BIOB004 ZEMEA(TM) PROPANEDIOL
Revised 31-AUG-2007

CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

CAS Number : 504-63-2
Formula : C₃H₈O₂
Molecular Weight : 76.09
CAS Name : 1,3-Propanediol

Tradenames and Synonyms

Propanediol
Bio-PDO(TM)
1,3-Propanediol made from Corn
Trimethylene Glycol
TMG
3G
PDO
Refined PDO
Propane-1,3-Diol
1,3-Propylene Glycol
1,3-Dihydroxypropane
2-(Hydroxymethyl) Ethanol

Company Identification

MANUFACTURER/DISTRIBUTOR

DuPont Tate & Lyle Bio Products Company
198 Blair Bend Drive
Loudon
TN
USA
37774

PHONE NUMBERS

Product Information : 1-866-404-7933 (outside U.S.A.
1-217-421-3443)
Transport Emergency : CHEMTREC 1-800-424-9300
Medical Emergency : 1-800-441-3637 (outside U.S.A.
1-302-774-1139)

COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
1,3-Propanediol	504-63-2	>99.7

HAZARDS IDENTIFICATION

Potential Health Effects

Zemea(TM) propanediol is highly hygroscopic and may cause skin irritation in its pure form. A 75% solution of Zemea(TM) propanediol did not cause dermal irritation in a human skin patch test.

No adverse effects are expected from incidental eye contact with 1,3-Propanediol.

Carcinogenicity Information

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

FIRST AID MEASURES

First Aid

General Information

Not expected to be a health hazard when used under normal conditions.

INHALATION

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT

Flush skin with water after contact. Wash contaminated clothing before reuse.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

INGESTION

If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

No antidote or specific regimens known. Use supportive measures as needed.

FIRE FIGHTING MEASURES

Flammable Properties

Flash Point : 131 C (268 F)
Method : Cleveland Open Cup - COC.

This material will burn. It is not an explosion hazard.

Extinguishing Media

Water, Foam, Dry Chemical, CO2, Water Spray.

Fire Fighting Instructions

Exposure to decomposition products may be a hazard to health.

Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.

Avoid breathing vapor. Use water spray to knock down vapor.

ACCIDENTAL RELEASE MEASURES

Safeguards (Personnel)

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Initial Containment

Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Accidental Release Measures

Ventilate area and wash spill site after material pickup is complete.

HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling.

Avoid prolonged or repeated exposure.

Storage

Keep container tightly closed. Keep away from heat, sparks and flames. Store in a cool, dry place.

EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls

Keep container tightly closed. Keep away from heat and open flame. Store in a cool dry place.

Protection levels and types of controls will vary depending on potential exposure conditions. Adequate ventilation should be provided to control airborne concentrations. Input from the data sheet should be used as input to a risk assessment of local conditions to help determine appropriate controls for safe handling, storage and disposal of this material.

Personal Protective Equipment

EYE/FACE PROTECTION

Wear safety glasses with side shields.

RESPIRATOR

Where there is potential for airborne exposure, wear appropriate NIOSH approved respiratory protection.

PROTECTIVE CLOTHING

Where there is potential for skin contact have available, and wear as appropriate, impervious gloves, apron, pants, and jacket.

Exposure Guidelines

Exposure Limits

ZEMEA(TM) PROPANEDIOL

AEL * (DuPont) : 5 mg/m3, 8 & 12 Hr. TWA

* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Boiling Point : 214 C (417 F)
Melting Point : -24 C (-11 F)
Vapor Pressure : 0.08 mm Hg @ 20 C (68 F)
 9.8 mm Hg @ 100 C (212 F)
Solubility in Water : Miscible with water
pH : Neutral
Color : Colorless.
Form : Liquid.
Specific Gravity : 1.053
Evaporation Rate : <1 (Butyl Acetate=1.0)

STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility with Other Materials

Incompatible or can react with strong oxidizers, strong acids.

Decomposition

Hazardous decomposition products are not expected to form during normal storage.

Polymerization

Polymerization is not expected to occur under normal storage conditions.

TOXICOLOGICAL INFORMATION

Animal Data

Basis for Assessment

Information given is based on test data for a similar product.

1,3-Propanediol Oral LD50: 15,000 mg/kg in

(TOXICOLOGICAL INFORMATION - Continued)

rats Dermal LD50: > 20,000 mg/kg in rabbits
Inhalation 4 hour ALC: > 5.0 mg/L in rats

1,3-Propanediol is not an eye irritant, is a slight skin irritant, and is not a skin sensitizer.

Repeated exposure of rats by oral gavage caused no toxicologically important changes in clinical pathology, pathology (including sperm analyses), or in-life measurements. The NOEL for this study was 1000 mg/kg/day, the highest dose tested.

Repeated inhalation exposure in rats caused no toxicologically important changes in clinical pathology, pathology, or in-life measurements. The NOEL was 1800 mg/m³.

Animal data show that 1,3-Propanediol is not uniquely toxic to the fetus. Information about reproductive toxicity potential is limited to information from the oral repeated dose study in rats. The absence of effects to sperm and reproductive organs in an oral repeat-dose study in rats suggests low reproductive toxicity potential.

1,3-Propanediol is not likely to be a genetic toxin. In vitro, it was not mutagenic in bacterial or mammalian cells. An increase in chromosome aberrations was observed in mammalian cells under certain conditions, but a repeat study with 1,3-propanediol was negative for all test conditions. 1,3-Propanediol was also negative in the in vivo mouse micronucleus assay.

No animal data are available to define the carcinogenic potential of 1,3-Propanediol.

Human Data

Basis for Assessment

Information given is based on test data on Zemea(TM) propanediol.

Zemea(TM) propanediol was not a dermal irritant or sensitizer at test concentrations as high as 75% in a 207-person human skin patch test.

ECOLOGICAL INFORMATION

Ecotoxicological Information

Basis for assessment

Information given is based on test data for a similar product.

AQUATIC TOXICITY:

Low toxicity.

48 hour EC50 - Daphnia magna: ,7417 mg/L

72 hour EC50 - algae: ,1600 mg/L

96 hour LC50 - fathead minnow: >9720 mg/l

Mobility: dissolves in water

Persistence/degradability: readily biodegradable

Bioaccumulation: low potential to bioaccumulate

DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

TRANSPORTATION INFORMATION

Shipping Information

Not Regulated as a hazardous material by DOT, IMO, or IATA.

REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status : Listed.

