

Safety Data Sheet

1. IDENTIFICATION

Product Name:	Dipropylene Glycol LO+
Other Names:	DPG
Recommended Use:	Solvent for consumer and industrial applications. Chemical intermediate, e.g., for manufacture of polyester resins. This product is not recommended for use in applications where human eye exposure is possible, such as mists or fogs for theatrical productions, or antifreeze solutions for emergency eye wash stations.
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2. HAZARDS IDENTIFICATION

Hazardous Classification

This product isn't classified as hazardous under GHS criteria

Hazardous Statement

No data available.

GHS Pictograms

No data available.

Hazard Statements

No data available.

Precautionary Statements

No data available.

Response Statements

If on skin

P352: Wash with plenty of soap and water.

If in eye

P351: Rinse cautiously with water for several minutes.

Storage Statements

P402: Store in a dry place.

P404: Store in a closed container.

Disposal Statements

P501: Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied.

Signal Word: No signal word

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS No.	UN No.	Proportion (%v/v)
Dipropylene glycol	25265-71-8	-	≥ 99.5 %

Molecular Formula: C₃H₈O₂

Molecular Weight: 76.09 g/mol

4. FIRST AID MEASURES

For advice, contact Ramathibodi Poison Centre (Phone: 1367) or a doctor.

Ingestion

No emergency medical treatment necessary.

Eye Contact

Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact

Wash off with plenty of water.

Inhalation

Move person to fresh air; if effects occur, consult a physician.

First Aid facilities

Provide eye baths and safety showers.

Medical Attention

No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable extinguishing media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function but will be less effective.

Unsuitable extinguishing media:

Do not use direct water stream. May spread fire.

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide. Carbon oxides **Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. **Advice for firefighters Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent fluid from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Protective Measures

- Observe all relevant local and international regulations.
- Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see chapter 8 this Material Safety Data Sheet. Shut off leaks, if possible, without personal risks. Remove all possible sources of ignition in the surrounding area. Prevent from spreading or entering drains, ditches, or rivers by using sand, earth, or other appropriate barriers.
- Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Clean-Up Methods

- ◆ Small spillage (< 200 LT) : Transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- ◆ large spillage (> 200 LT) : Transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Other Information

Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapours may form explosive mixtures with air. Vapours may travel to source of ignition and flash back.

7. HANDLING AND STORAGE

Precautions for safe handling: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store away from direct sunlight or ultraviolet light. Store in a cool, dry place. Keep container tightly closed when not in use. Protect from atmospheric moisture. Store in the following material(s): Stainless steel. Aluminum. Container lined with phenolic or epoxy-phenolic coating. 316 stainless steel. Opaque HDPE plastic container. No special storage conditions required.

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Exposure controls

Engineering controls: 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.

Individual protection measures

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

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.

Other protection: No precautions other than clean body-covering clothing should be needed. **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 discomfort is experienced, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of Measurement	Typical Value
Appearance	-	Colorless Liquid
Odour	-	Odorless
pH	-	No data available
Boiling point	°C	227 °C EC Method A2
Melting point	°C	< -20 °C EC Method A1
Flash point	°C	closed cup 128 °C EC Method A9 (PMCC)
Autoignition Temperature	°C	332 °C EC Method A15
Decomposition Temperature	°C	No data available
Lower/Upper Flammability Limits	%V	No data available
Density @ 20°C	g/cm ³	No data available
Specific Gravity @ 20°C	-	No data available
Viscosity @ 20°C	cSt.s	No data available
Vapor pressure	mmHg	No data available
Vapor density	kPa (Air = 1)	No data available
Evaporation Rate	(n-Butyl acetate = 1)	No data available
Water Solubility	g/100 ml	No data available
Solubility in other solvents Partition coefficient	(n-octanol/water)	No data available
Coefficient of Thermal Expansion	per Deg °C	No data available

10. STABILITY AND REACTIVITY

Reactivity: No data available

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

Possibility of hazardous reactions: Polymerization will not occur.

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

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

Hazardous decomposition products: 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****Acute oral toxicity**

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

LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit, > 5,010 mg/kg

Acute inhalation toxicity

Vapors are unlikely due to physical properties. Based on the available data, narcotic effects were not observed. Based on the available data, respiratory irritation was not observed. Maximum attainable concentration.

LC50, Rat, 4 Hour, vapour, > 2.34 mg/l No deaths occurred at this concentration.

Skin corrosion/irritation Prolonged exposure not likely to cause significant skin irritation.

Serious eye damage/eye irritation May cause slight temporary eye irritation.

Mist may cause eye irritation.

Sensitization

Did not cause allergic skin reactions when tested in humans.

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure) Evaluation of available data suggests that this material is not an STOT-SE toxicant

Specific Target Organ Systemic Toxicity (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. Nasal tissue.

Carcinogenicity Did not cause cancer in laboratory animals.

Teratogenicity 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.

Mutagenicity In vitro genetic toxicity studies were negative.

Animal genetic toxicity studies were negative.

Aspiration Hazard

Based on physical properties, not likely to be an aspiration hazard.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Acute toxicity to fish**

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).

Based on information for a similar material:

LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, 46,500 mg/l, OECD Test

Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates

EC50, Daphnia magna (Water flea), static test, 48 Hour, > 100 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants

EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Biomass, > 100 mg/l,
OECD Test Guideline 201 or Equivalent

Toxicity to bacteria

EC50, Bacteria, 16 Hour, > 5,000 mg/l

Toxicity to Above Ground Organisms

LD50, Colinus virginianus (Bobwhite quail), 14 d, mortality, > 2,000 mg/kg

Persistence and degradability

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

10-day Window: Not applicable

Biodegradation: 84.4 %

Exposure time: 28 d

Method: OECD Test Guideline 301F or Equivalent

10-day Window: Not applicable

Biodegradation: 23.6 %

Exposure time: 64 d

Method: OECD Test Guideline 306 or Equivalent

Theoretical Oxygen Demand: 1.91 mg/mg Estimated.

Bioaccumulative potential

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

Partition coefficient: n-octanol/water(log Pow): -0.46 OECD Test Guideline 107 or Equivalent **Bioconcentration factor (BCF):** 0.3 - 4.6 Cyprinus carpio (Carp) 42 d Measured

Mobility in Soil

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. Potential for mobility in soil is very high (Koc between 0 and 50).

Partition coefficient (Koc): 0.76 Estimated.

Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Other adverse effects

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Disposal methods: 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.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN. Number	Not Regulated	UN. Number	Not Regulated	UN. Number	Not Regulated

Class/Item	Not Regulated	Class/Item	Not Regulated	Class/Item	Not Regulated
Hazard Symbol	Not Regulated	Hazard Symbol	Not Regulated	Hazard Symbol	Not Regulated
Proper Shipping Name	Not Regulated	Proper Shipping Name	Not Regulated	Proper Shipping Name	Not Regulated
Packing Group	Not Regulated	Packing Group	Not Regulated	Packing Group	Not Regulated
		Marine Pollutant	No		

15. REGULATORY INFORMATION

Thailand: Notification of Department of Labour Protection and Welfare (List of Hazardous Chemicals) All components of this product are not listed.

Thailand: Munitions Control Act B.E.2530

All components of this product are not listed.

Hazardous Substance Act B.E. 2535

Not applicable

Emergency Decree on Controlling the Use of Volatile Substances B.E. 2533

Not applicable

16. OTHER INFORMATION

National Fire Protection Association (USA) : No data available

SDS Distribution : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty of guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Prepared By : Quality Control Department / Global Chemie ASCC Limited

Abbreviations:

- AICS - Australian Inventory of Chemical Substances.
- ANTT - National Agency for Transport by Land of Brazil.
- ASTM - American Society for the Testing of Materials
- bw - Body weight.
- CMR - Carcinogen, Mutagen or Reproductive Toxicant.
- CPR - Controlled Products Regulations.
- DIN - Standard of the German Institute for Standardisation.
- DSL - Domestic Substances List (Canada).
- ECx - Concentration associated with x% response.
- ELx - Loading rate associated with x% response.
- EmS - Emergency Schedule.
- ENCS - Existing and New Chemical Substances (Japan).
- ErCx - Concentration associated with x% growth rate response.
- ERG - Emergency Response Guide.
- GHS - Globally Harmonized System; GLP - Good Laboratory Practice.
- IARC - International Agency for Research on Cancer.
- IATA - International Air Transport Association.

IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk.

IC50 - Half maximal inhibitory concentration.

ICAO - International Civil Aviation Organization.

IECSC - Inventory of Existing Chemical Substances in China.

IMDG - International Maritime Dangerous Goods.

IMO - International Maritime Organization.

ISHL - Industrial Safety and Health Law (Japan).

KECI - Korea Existing Chemicals Inventory.

LC50 - Lethal Concentration to 50 % of a test population.

LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose).

MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified.

Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration.

NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate.

NOM - Official Mexican Norm; NTP - National Toxicology Program.

NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development.

OPPTS - Office of Chemical Safety and Pollution Prevention.

PBT - Persistent, Bioaccumulative and Toxic substance.

PICCS - Philippines Inventory of Chemicals and Chemical Substances.

(Q)SAR - (Quantitative) Structure Activity Relationship.

REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.

SADT - Self-Accelerating Decomposition Temperature.

TCSI - Taiwan Chemical Substance Inventory.

TDG - Transportation of Dangerous Goods.

TSCA - Toxic Substances Control Act (United States).

UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods.

vPvB - Very Persistent and Very Bioaccumulative.

WHMIS - Workplace Hazardous Materials Information System.

References:

- Supplier Material Safety Data Sheets
- <http://chem.sis.nlm.nih.gov/chemidplus> (October 18)
- <http://hsis.ascc.gov.au/SearchHS.aspx> (October 18)
- Ecotoxicology data: http://cfpub.epa.gov/ecotox/quick_query.htm (October 18)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. No warranty and guarantee are expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product for further information, please contact Global Chemie ASCC Limited.