

Material Safety Data Sheet

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Version 1.4

According to 91/155/EEC

1 - Product and Company Information

Product Name	PROPYLENE GLYCOL
Product Number	12279
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529
Technical Phone #	65 271 1089
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
1,2-PROPANEDIOL	57-55-6	200-338-0	None

Formula	C3H8O2
Molecular Weight	76.1 AMU
Synonyms	1,2-Dihydroxypropane * Dowfrost * Methylethylene glycol * Monopropylene glycol * PG 12 * Propane-1,2-diol * Propylene Glycol USP * alpha-Propyleneglycol * 1,2-Propylene glycol * 1,2-Propylenglykol (German) * Sirlene * Solargard P * Solar Winter BAN * Ucar 35

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Not hazardous according to Directive 67/548/EC.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of vapors.

METHODS FOR CLEANING UP

Absorb on sand or vermiculite and place in closed containers for disposal. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Conditions of Storage: Keep tightly closed.

SPECIAL REQUIREMENTS: Hygroscopic.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

EXPOSURE LIMITS - UNITED KINGDOM

Source	Type	Value
OEL	OEL	474 mg/m ³ 150 ppm

PERSONAL PROTECTIVE EQUIPMENT

Hand Protection: Protective gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance	Physical State: Clear viscous liquid Color: Colorless	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	185 - 189 °C	
MP/MP Range	-60 °C	
Flash Point	103 °C	Method: closed cup

Flammability	N/A	
Autoignition Temp	415 °C	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	Lower: 2.6 % Upper: 12.5 %	
Vapor Pressure	0.08 mmHg	20 °C
SG/Density	1.036 g/cm3	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	2.62 g/l	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	< 0.1 %	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Moisture.

Materials to Avoid: Acid chlorides, Acid anhydrides, Oxidizing agents, Chloroformates, Reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: TY2000000

ACUTE TOXICITY

LD50

Oral

Rat

20000 mg/kg

LD50

Intraperitoneal

Rat

6660 MG/KG

LD50

Subcutaneous

Rat

22500 MG/KG

LD50

Intravenous

Rat

6423 MG/KG

LD50
Intramuscular
Rat
14 GM/KG

LD50
Oral
Mouse
22000 mg/kg

LD50
Intraperitoneal
Mouse
9718 MG/KG
Remarks: Lungs, Thorax, or Respiration:Chronic pulmonary edema.
Kidney, Ureter, Bladder:Changes in both tubules and glomeruli.
Blood:Changes in spleen.

LD50
Subcutaneous
Mouse
17370 MG/KG
Remarks: Behavioral:Change in motor activity (specific assay).
Behavioral:Muscle contraction or spasticity. Lungs, Thorax, or
Respiration:Cyanosis.

LD50
Intravenous
Mouse
6630 MG/KG

LD50
Oral
Dog
22000 mg/kg

LD50
Intravenous
Dog
26 GM/KG

LD50
Oral
Rabbit
18500 mg/kg

LD50
Skin
Rabbit
20800 mg/kg

LD50
Intravenous
Rabbit
6500 MG/KG

LD50
Oral
Guinea pig
18350 mg/kg

LD50

Oral
Quail
> 2080 mg/kg

IRRITATION DATA

Skin
Human
500 mg
7D
Remarks: Mild irritation effect

Skin
Human
104 mg
3D
I
Remarks: Moderate irritation effect

Skin
Man
10 %
2D

Eyes
Rabbit
100 mg
Remarks: Mild irritation effect

Eyes
Rabbit
500 mg
24H
Remarks: Mild irritation effect

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: Gastrointestinal disturbances. Nausea, headache, and vomiting. CNS depression.

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: May cause eye irritation.
Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be harmful if swallowed.

CHRONIC EXPOSURE - MUTAGEN

Mouse
8000 MG/KG
Subcutaneous
DNA inhibition

Mouse
8000 MG/KG
Subcutaneous
Cytogenetic analysis

Hamster
32 GM/L
Cell Type: fibroblast

Cytogenetic analysis

CHRONIC EXPOSURE - TERATOGEN

Species: Mouse
Dose: 100 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Mouse
Dose: 100 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (11D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

15 - Regulatory Information

Not hazardous according to Directive 67/548/EC.

COUNTRY SPECIFIC INFORMATION

Germany

WGK: 1

SWITZERLAND

SWISS POISON CLASS: FREI

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our

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