

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

Product identifier:

Product name: MONOPROPYLENE GLYCOL.

Synonyms; trade names: PROPYLENE GLYCOL, PROPAN 1,2 DIOL, DOWCAL 20, DOWCAL N, 1,2 PROPYLENE GLYCOL CARE, PROPYLENE GLYCOL INDUSTRIAL GRADE, MONOPROPYLENE GLYCOL PH, MPG STANDARD, PROPYLENE GLYCOL USP GRADE, PROPYLENE GLYCOL TECHNICAL GRADE, PROPYLENE GLYCOL USP/EP, KOLLISOLV PG, MONOPROPYLENE GLYCOL USP FCC ED 7, MONOPROPYLENE GLYCOL T, MONOPROPYLENE GLYCOL DOW AGPH, MONOPROPYLENE GLYCOL DOW, MONOPROPYLENE GLYCOL HCS, MPG USP O&G, MPG USP, MONOPROPYLENE GLYCOL USP/EP, SOLV CORR MPG, MONOPROP GLYCOL USP/EP WUXI, MONOPROPYLENE GLYCOL BPC, MONOPROPYLENE GLYCOL BIO.

REACH registration number: 01-2119456809-23-XXXX

CAS number: 57-55-6

EC number: 200-338-0

Relevant identified uses of the substance or mixture and uses advised against:

Identified uses: Surface coating. Cleaning agent. Industrial Solvent. Additive for Agrochemicals. Food industry. Fragrance. Cosmetics. Pharmaceuticals. Personal Care. Chemical Intermediate Manufacture of substance. Laboratory reagent. Binder Releasing agent. Antifreeze liquid. Industrial use. Professional use. Consumer use.

Uses advised against: For further information, see attached Product Application Policy.

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification (EC 1272/2008):

Physical hazards: Not Classified.

Health hazards: Not Classified.

Environmental hazards: Not Classified.

Environmental: The product is not expected to be hazardous to the environment.

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Label elements:

EC number: 200-338-0
Hazard statements: NC Not Classified.

Other hazards: This substance is not classified as PBT or vPvB according to current EU criteria.
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances:

Product name: MONOPROPYLENE GLYCOL
REACH registration number: 01-2119456809-23-XXXX
CAS number: 57-55-6
EC number: 200-338-0
Ingredient notes: ATE: Acute Toxicity Estimate. Oral > 20000 mg/kg
ATE: Acute Toxicity Estimate. Dermal > 2000 mg/kg
ATE: Acute Toxicity Estimate. Inhalation 317.042 mg/l 2 hours Dust/Mist

Composition comments: The data shown are in accordance with the latest EC Directives.

4. FIRST AID MEASURES

Description of first aid measures:

General information: Wear protective clothing as described in Section 8 of this safety data sheet.
Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion: Rinse mouth thoroughly with water. Do not induce vomiting. Get medical attention if any discomfort continues.
Skin contact: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of water. Get medical attention if any discomfort continues.
Eye contact: Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Most important symptoms and effects, both acute and delayed:

Eye contact: May cause temporary eye irritation.

Indication of any immediate medical attention and special treatment needed:

Notes for the doctor: Treat symptomatically. If in doubt, get medical attention.

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5. FIRE-FIGHTING MEASURES

Extinguishing media:

Suitable extinguishing media: Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Special hazards arising from the substance or mixture:

Specific hazards: When heated and in case of fire, toxic vapours/gases may be formed. Containers can burst violently or explode when heated, due to excessive pressure build-up.

Hazardous combustion products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Aldehydes. Alcohols. Ethers. Acids - organic. Oxides of the following substances: Carbon.

Advice for firefighters:

Protective actions during firefighting: No action shall be taken without appropriate training or involving any personal risk.

Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Do not use water jet as an extinguisher, as this will spread the fire.

Contain and collect extinguishing water. Control run-off water by containing and keeping it out of sewers and watercourses. Evacuate area.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Personal precautions: Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Keep unnecessary and unprotected personnel away from the spillage. Keep upwind.

Environmental precautions: Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

Methods and material for containment and cleaning up:

Methods for cleaning up: Absorb spillage with inert, damp, non-combustible material. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible. Avoid the spillage or runoff entering drains, sewers or watercourses. Flush contaminated area with plenty of water.

Reference to other sections: Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

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7. HANDLING AND STORAGE

Precautions for safe handling:

Usage precautions: Provide adequate ventilation. Wear protective clothing as described in Section 8 of this safety data sheet. Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes.

Conditions for safe storage, including any incompatibilities:

Storage precautions: Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight. Container must be kept tightly closed when not in use. Protect from moisture. Suitable container materials: Stainless steel. Aluminium.

Specific end use(s): The identified uses for this product are detailed in Section 1.2.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters:

Occupational exposure limits: Long-term exposure limit (8-hour TWA): WEL 10 mg/m³ particulate
Long-term exposure limit (8-hour TWA): WEL 150 ppm 474 mg/m³ total vapour and particulates
WEL = Workplace Exposure Limit

DNEL: General population - Inhalation; Long term systemic effects: 50 mg/m³
General population - Inhalation; Long term local effects: 10 mg/m³
Workers - Inhalation; Long term systemic effects: 168 mg/m³
Workers - Inhalation; Long term local effects: 10 mg/m³
General population - Dermal; Long term systemic effects: 213 mg/m³
General population - Oral; Long term systemic effects: 85 mg/m³

PNEC: Fresh water; 260 mg/l
Marine water; 26 mg/l - STP; 20000 mg/l
Sediment (Freshwater); 572 mg/kg
Sediment (Marine water); 57.2 mg/kg
Soil; 50 mg/kg
Intermittent release; 183 mg/l

Exposure controls:

Protective equipment:



Appropriate engineering controls: Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

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Eye/face protection:	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection:	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 2 hours. Butyl rubber. Rubber (natural, latex). Nitrile rubber. Polyethylene. Polyvinyl alcohol (PVA). Polyvinyl chloride (PVC). Neoprene. Thickness: > 0.35 mm To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection:	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Hygiene measures:	When using do not eat, drink or smoke. Wash at the end of each work shift and before eating, smoking and using the toilet. Remove contaminated clothing and protective equipment before entering eating areas. Eye wash facilities and emergency shower must be available when handling this product.
Respiratory protection:	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. If ventilation is inadequate, suitable respiratory protection must be worn. Organic vapour filter. Combination filter, type A2/P2. EN 136/140/141/145/143/149.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

Appearance:	Liquid.
Colour:	Colourless or various colours.
Odour:	Odourless.
Odour threshold:	No information available.
pH:	Not applicable.
Melting point:	<-20°C
Pour Point:	< -57°C Read-across data.
Freezing Point:	<-20°C
Initial boiling point and range:	184°C @ 760 mm Hg
Flash point:	104°C Pensky-Martens closed cup.
Evaporation rate:	0.01 (butyl acetate = 1)
Evaporation factor:	No information available.
Flammability (solid, gas):	Not applicable.
Upper/lower flammability or explosive limits:	Lower flammable/explosive limit: 2.6% estimated value. Upper flammable/explosive limit: 12.5% estimated value.
Other flammability:	No information available.
Vapour pressure:	20 Pa @ 25°C
Vapour density:	2.62 Read-across data.
Relative density:	1.03 - 1.05 @ 20°C
Bulk density:	No information available.
Solubility (ies):	Soluble in water.

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Partition coefficient: log Pow: -1.07
Auto-ignition temperature: >370°C
Decomposition Temperature: No information available.
Viscosity: 43 cSt @ 20°C
Explosive properties: Not considered to be explosive.
Explosive under the influence of a flame: No information available.
Oxidising properties: Does not meet the criteria for classification as oxidising.

Other information:

Refractive index: No information available.
Particle size: No information available.
Molecular weight: No information available.
Volatility: No information available.
Saturation concentration: No information available.
Critical temperature: No information available.
Volatile organic compound: No information available.

10. STABILITY AND REACTIVITY

Reactivity: There are no known reactivity hazards associated with this product.

Chemical stability:

Stability: Stable at normal ambient temperatures and when used as recommended.

Possibility of hazardous reactions: Will not polymerise.

Conditions to avoid: Avoid excessive heat for prolonged periods of time. Protect from moisture.

Incompatible materials:

Materials to avoid: Strong oxidising agents. Strong acids. Strong alkalis.

Hazardous decomposition products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Aldehydes. Alcohols. Ethers. Acids – organic.
Oxides of the following substances: Carbon.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects:

Acute toxicity – oral:

Acute toxicity oral (LD₅₀ mg/kg): 22,000.0

Species: Rat

Notes (oral LD₅₀): This product has low toxicity. LD₅₀ > 20000 mg/kg, Oral, Rat

ATE oral (mg/kg): 22,000.0

Acute toxicity – dermal:

Notes (dermal LD₅₀): LD₅₀ > 2000 mg/kg, Dermal, Rabbit

[cont...]

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Acute toxicity – inhalation:	Notes (inhalation LC ₅₀) LC ₅₀ 317.042 mg/l, 2 hours, Dust/Mist Rat
Skin corrosion/irritation:	
Animal data:	Not irritating. OECD 404.
Serious eye damage/irritation:	May cause temporary eye irritation.
Respiratory sensitisation:	No information available.
Skin sensitisation:	Not sensitising. Guinea Pig OECD 406.
Germ cell mutagenicity:	
Genotoxicity – in vitro:	This substance has no evidence of mutagenic properties. Ames test Negative. OECD 473.
Carcinogenicity:	No evidence of carcinogenicity in animals studies.
Reproductive toxicity:	
Reproductive toxicity – fertility:	No evidence of reproductive toxicity in animal studies.
Specific target organ toxicity - single exposure:	
STOT - single exposure:	No information available.
Specific target organ toxicity - repeated exposure:	
STOT - repeated exposure:	No information available.
Aspiration hazard:	Based on available data the classification criteria are not met.
Toxicokinetics:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Inhalation:	Gas or vapour in high concentrations may irritate the respiratory system.
Ingestion:	May cause discomfort if swallowed.
Skin contact:	Skin irritation should not occur when used as recommended.
Eye contact:	May cause temporary eye irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.
Toxicity:	Not considered toxic to fish.
Acute aquatic toxicity:	
Acute toxicity – fish:	LC50, 96 hours: 40613 mg/l, Oncorhynchus mykiss (Rainbow trout) OECD 203

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Acute toxicity – aquatic invertebrates: LC₅₀, 48 hours: 18340 mg/l, *Daphnia magna*

Ceriodaphnia dubia (water flea)

OECD 202

Acute toxicity - aquatic plants: ErC₅₀, 96 hours: 19000 mg/l, *Pseudokirchneriella subcapitata*

OECD 201

Acute toxicity – microorganisms: NOEC, 18 hour: > 20000 mg/l,

Pseudomonas putida

Chronic aquatic toxicity:

Chronic toxicity – aquatic invertebrates: NOEC, 7 day: 13020 mg/l,

Ceriodaphnia dubia (water flea)

Persistence and degradability:

Persistence and degradability: The substance is readily biodegradable.

Biodegradation:

Degradation >81%: 28 days

OECD 301F

Degradation 96%: 64 days

Biological oxygen demand: BOD₅: 1170 mg O₂/l

Chemical oxygen demand: 4700 mg O₂/l

Bioaccumulative potential:

Bioaccumulative potential: The product is not bioaccumulating. BCF: < 0.09, Estimated value.

Partition coefficient: log Pow: -1.07

Mobility in soil:

Mobility: The product is soluble in water.

Adsorption/desorption coefficient: K_{oc}: 2.9 @ 20°C - Log K_{oc}: 0.46 @ 20°C

Henry's law constant: 0.00566 atm m³/mol @ 12°C

Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

Other adverse effects: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods:

General information: Waste should be treated as controlled waste. Do not puncture or incinerate, even when empty.

Disposal methods: Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

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14. TRANSPORT INFORMATION

General: The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class (es): No transport warning sign required.

Packing group: Not applicable.

Environmental hazards:

Environmentally hazardous substance/marine pollutant: No.

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture:

EU legislation: Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2020/878 of 18 June 2020.

Chemical safety assessment: A chemical safety assessment has been carried out.

Note: The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

16. OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet:

ATE: Acute Toxicity Estimate.

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

CAS: Chemical Abstracts Service.

DNEL: Derived No Effect Level.

IATA: International Air Transport Association.

IMDG: International Maritime Dangerous Goods.

Kow: Octanol-water partition coefficient.

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

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

PBT: Persistent, Bioaccumulative and Toxic substance.

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PNEC: Predicted No Effect Concentration.

REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.

RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.

vPvB: Very Persistent and Very Bioaccumulative.

IARC: International Agency for Research on Cancer.

MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.

cATpE: Converted Acute Toxicity Point Estimate.

BCF: Bioconcentration Factor.

BOD: Biochemical Oxygen Demand.

EC₅₀: 50% of maximal Effective Concentration.

LOAEC: Lowest Observed Adverse Effect Concentration.

LOAEL: Lowest Observed Adverse Effect Level.

NOAEC: No Observed Adverse Effect Concentration.

NOAEL: No Observed Adverse Effect Level.

NOEC: No Observed Effect Concentration.

LOEC: Lowest Observed Effect Concentration.

DMEL: Derived Minimal Effect Level.

EL50: Exposure Limit 50

hPa: Hectopascal

LL50: Lethal Loading fifty

OECD: Organisation for Economic Co-operation and Development

POW: Octanol-water partition coefficient

SCBA: self-contained breathing apparatus

STP: Sewage Treatment Plant

VOC: Volatile Organic Compounds

Classification abbreviations and acronyms:

Acute Tox. = Acute toxicity

Aquatic Acute = Hazardous to the aquatic environment (acute)

Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.