

Safety data sheet

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BASF Safety data sheet according to the United Nations' Globally Harmonized System (UN GHS)

Date / Revised: 08.09.2023

Version: 5.0

Product: **N-PROPANOL**

(ID no. 30034841/SDS_GEN_00/EN)

Date of print 25.05.2024

1. Identification

Product identifier

N-PROPANOL

Chemical name: propan-1-ol
INDEX-Number: 603-003-00-0
CAS Number: 71-23-8

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

Relevant identified uses: solvent(s)

Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Operating Division Petrochemicals

Telephone: +49 621 60-42151
E-mail address: sds-petrochemicals@basf.com

Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

2. Hazards Identification

Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 2
 Acute Tox. 5 (dermal)
 Eye Dam./Irrit. 1
 STOT SE 3 (Vapours may cause drowsiness and dizziness.)

For the classifications not written out in full in this section the full text can be found in section 16.

Label elements

Globally Harmonized System (GHS)

Pictogram:



Signal Word:

Danger

Hazard Statement:

H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H313	May be harmful in contact with skin.
H336	May cause drowsiness or dizziness.

Precautionary Statements (Prevention):

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P243	Take action to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P240	Ground and bond container and receiving equipment.
P242	Use non-sparking tools.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P370 + P378	In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction.

Precautionary Statements (Storage):

P233	Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary Statements (Disposal):

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P501 Dispose of contents and container to hazardous or special waste collection point.

According to UN GHS criteria

Hazard determining component(s) for labelling: Propan-1-ol

Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

See section 12 - Results of PBT and vPvB assessment.

3. Composition/Information on Ingredients

Substances

Chemical nature

Propan-1-ol (Content (W/W): $\geq 99,5\%$)
 CAS Number: 71-23-8
 EC-Number: 200-746-9
 INDEX-Number: 603-003-00-0

Hazardous ingredients (GHS)

According to UN GHS criteria

Propan-1-ol	Content (W/W): $\geq 99,5\%$ - $\leq 100\%$	Flam. Liq. 2
	CAS Number: 71-23-8	Acute Tox. 5 (dermal)
	EC-Number: 200-746-9	Eye Dam./Irrit. 1
	INDEX-Number: 603-003-00-0	STOT SE 3 (drowsiness and dizziness)
		H225, H318, H313, H336

For the classifications not written out in full in this section the full text can be found in section 16.

Mixtures

Not applicable

4. First-Aid Measures

Description of first aid measures

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

On skin contact:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

On contact with eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11.

Hazards: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11. (Further) symptoms and / or effects are not known so far

Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:

dry powder, water spray, carbon dioxide, alcohol-resistant foam

Unsuitable extinguishing media for safety reasons:

water jet

Additional information:

Use extinguishing measures to suit surroundings.

Special hazards arising from the substance or mixture

Highly flammable. Cool endangered containers with water-spray. See SDS section 7 - Handling and storage.

Advice for fire-fighters

Special protective equipment:

Wear a self-contained breathing apparatus. Special protective equipment for firefighters

Further information:

Evacuate area of all unnecessary personnel. Fight fire from maximum distance.

Extend fire extinguishing measures to the surroundings. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

High risk of slipping due to leakage/spillage of product.

Release of substance/product can cause fire or explosion. Shut off or stop source of leak. Shut off or stop released substance/product under safe conditions.

Pack in tightly closed containers for disposal.

Personal precautions, protective equipment and emergency procedures

Handle in accordance with good industrial hygiene and safety practice.

Avoid all sources of ignition: heat, sparks, open flame. Use antistatic tools.

Environmental precautions

Discharge into the environment must be avoided.

Methods and material for containment and cleaning up

Pick up with suitable appliance and dispose of. Spills should be contained, solidified, and placed in suitable containers for disposal. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

Avoid all sources of ignition: heat, sparks, open flame. Ground all transfer equipment properly to prevent electrostatic discharge.

Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

8. Exposure Controls/Personal Protection

Control parameters

Components with occupational exposure limits

71-23-8: Propan-1-ol

Exposure controlsPersonal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:

Chemical resistant protective gloves (EN ISO 374-1)

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

butyl rubber (butyl) - 0.7 mm coating thickness

Manufacturer's directions for use should be observed because of great diversity of types.

Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:

Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures

Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid inhalation of vapour.

9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Form:	liquid	
Colour:	colourless	
Odour:	alcohol-like	
Odour threshold:	not determined	
pH value:	approx. 7 (200 g/l)	
Melting point:	-127,05 °C (1.013 hPa)	
Boiling point:	Literature data. 97 °C (1.013 hPa)	
Flash point:	Literature data. 21,5 - 25,5 °C	(DIN 51755, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	

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Flammability:	Highly flammable liquid and vapour.	(derived from flash - and boiling point)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Ignition temperature:	400 °C	(DIN 51794)
Vapour pressure:	28,2 hPa (25 °C)	(measured)
Density:	Literature data. 0,8037 g/cm3 (20 °C)	(DIN 51757)
Relative density:	0,8037 (20 °C)	
Relative vapour density (air):	2,07 (20 °C) Heavier than air.	(calculated)
Solubility in water:	miscible (20 °C)	(TRbF 003, Number 2)
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	0,2 (25 °C)	(OECD Guideline 117)
Self ignition:	Based on its structural properties the product is not classified as self-igniting.	Test type: Spontaneous self-ignition at room-temperature.
Thermal decomposition:	No data available.	
Viscosity, dynamic:	2,3 mPa.s (20 °C) Literature data.	
Viscosity, kinematic:	No data available.	
Explosion hazard:	Based on the chemical structure there is no indication of explosive properties.	
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	

Other information

Self heating ability:	not applicable, the product is a liquid	
pKA:	16,1	
Adsorption/water - soil:	KOC: 4,291; log KOC: 0,633	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	

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Grain size distribution: The substance / product is marketed or used in a non solid or granular form.

Molar mass: 60,10 g/mol

Other Information:

Study technically not feasible.

10. Stability and Reactivity

Reactivity

| When heated can give off ignitable vapours.

Corrosion to metals: Corrosive effects to metal are not anticipated.

Formation of flammable gases: Remarks: Forms no flammable gases in the presence of water.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Reacts with strong oxidizing agents.

Conditions to avoid

No special precautions other than good housekeeping of chemicals.

Incompatible materials

Substances to avoid:
strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic by inhalation. Of low toxicity after short-term skin contact.

Experimental/calculated data:

LD50 rat (oral): approx. 8.000 mg/kg (BASF-Test)

LC50 rat (by inhalation): > 33,8 mg/l 4 h (OECD Guideline 403)

The vapour was tested.

rat (by inhalation): 7 h (IRT)

No mortality was observed.

LD50 rabbit (dermal): 4.032 mg/kg (similar to OECD guideline 402)

Literature data.

Irritation

Assessment of irritating effects:

Not irritating to the skin. May cause severe damage to the eyes.

Experimental/calculated data:

Skin corrosion/irritation rabbit: non-irritant (BASF-Test)

Serious eye damage/irritation rabbit: irreversible damage (BASF-Test)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing. (OECD Guideline 406)

Literature data.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture.

Carcinogenicity

Assessment of carcinogenicity:

The whole of the information assessable provides no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity:

In high doses a potential to impair fertility cannot be fully excluded. Literature data.

Developmental toxicity

Assessment of teratogenicity:

The potential to cause toxicity to development cannot be excluded when given in high doses.

Literature data.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Possible narcotic effects (drowsiness or dizziness).

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Repeated inhalative uptake of the substance did not cause substance-related effects.

Aspiration hazard

Some authorities consider isobutyl alcohol, n-primary alcohols and ketones with C3-C13 as "May be harmful if swallowed and enters airways"

12. Ecological Information

Toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:

LC50 (96 h) 4.555 mg/l, Pimephales promelas (Fish test acute, Flow through.)

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Aquatic invertebrates:

EC50 (48 h) 3.644 mg/l, Daphnia magna (DIN 38412 Part 11, static)

The details of the toxic effect relate to the nominal concentration. Literature data.

Aquatic plants:

No observed effect concentration (48 h) 1.150 mg/l (growth rate), Chlorella sp. (Algal growth inhibition test, static)

The details of the toxic effect relate to the nominal concentration. Literature data.

Microorganisms/Effect on activated sludge:

EC50 (3 h) > 1.000 mg/l, activated sludge, domestic (OECD Guideline 209, aquatic)

Literature data.

Chronic toxicity to fish:

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) > 100 mg/l, Daphnia magna (OECD Guideline 211, semistatic)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

No observed effect concentration (21 d) 68,3 mg/l, Daphnia magna (other, other)

The product has not been tested. The statement has been derived from the structure of the product.

Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

Study scientifically not justified.

Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Readily biodegradable (according to OECD criteria).

Elimination information:

75 % BOD of the ThOD (20 d) (other) (aerobic, domestic sewage)

Assessment of stability in water:

According to structural properties, hydrolysis is not expected/probable.

Information on Stability in Water (Hydrolysis):

Study scientifically not justified.

Bioaccumulative potential**Assessment bioaccumulation potential:**

Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:

No data available. Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil**Assessment transport between environmental compartments:**

Volatility: The substance will not evaporate into the atmosphere from the water surface.

Adsorption in soil: Adsorption to solid soil phase is not expected.

Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

Additional information**Adsorbable organically-bound halogen (AOX):**

This product contains no organically-bound halogen.

Other ecotoxicological advice:

Do not release untreated into natural waters. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

13. Disposal Considerations**Waste treatment methods**

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:

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Uncleaned empties should be disposed of in the same manner as the contents.

14. Transport Information

Land transport

ADR

UN number or ID number: UN1274

UN proper shipping name: N-PROPANOL (PROPYL ALCOHOL, NORMAL)

Transport hazard class(es): 3

Packing group: II

Environmental hazards: no

Special precautions for user: Tunnel code: D/E

RID

UN number or ID number: UN1274

UN proper shipping name: N-PROPANOL (PROPYL ALCOHOL, NORMAL)

Transport hazard class(es): 3

Packing group: II

Environmental hazards: no

Special precautions for user: None known

Inland waterway transport

ADN

UN number or ID number: UN1274

UN proper shipping name: N-PROPANOL (PROPYL ALCOHOL, NORMAL)

Transport hazard class(es): 3

Packing group: II

Environmental hazards: no

Special precautions for user: None known

Transport in inland waterway vessel

UN number or ID number: UN1274

UN proper shipping name: N-PROPANOL

Transport hazard class(es): 3

Packing group: II

Environmental hazards: no

Type of inland waterway vessel: N

Cargo tank design: 2

Cargo tank type: 2

Sea transport

IMDG

UN number or ID number: UN 1274
UN proper shipping name: N-PROPANOL (PROPYL ALCOHOL, NORMAL)

Transport hazard class(es): 3
Packing group: II
Environmental hazards: no
Marine pollutant: NO
Special precautions for user: EmS: F-E; S-D

Air transport

IATA/ICAO

UN number or ID number: UN 1274
UN proper shipping name: N-PROPANOL
Transport hazard class(es): 3
Packing group: II
Environmental hazards: No Mark as dangerous for the environment is needed
Special precautions for user: None known

Maritime transport in bulk according to IMO instruments

Regulation: IBC-Code
Product name: n-Propyl alcohol
Pollution category: Y
Ship Type: 3

15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

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Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT SE	Specific target organ toxicity — single exposure
H225	Highly flammable liquid and vapour.
H318	Causes serious eye damage.
H313	May be harmful in contact with skin.
H336	May cause drowsiness or dizziness.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

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