

Safety data sheet

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

Date / Revised: 08.10.2025

Version: 5.0

Product: **ISOBUTANOL**

(ID no. 30034839/SDS_GEN_00/EN)

Date of print 08.10.2025

1. Identification

Product identifier

ISOBUTANOL

Chemical name: isobutyl alcohol

INDEX-Number: 603-108-00-1

CAS Number: 78-83-1

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

Relevant identified uses: Chemical

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

Asp. Tox. 2
Flam. Liq. 3
Acute Tox. 5 (oral)
Acute Tox. 5 (dermal)
Skin Irrit. 2
Eye Dam. 1
STOT SE 3 (May cause drowsiness and dizziness.)
STOT SE 3 (irritating to respiratory system)

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:

H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H305	May be harmful if swallowed and enters airways.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing mist or vapour or spray.
P243	Take action to prevent static discharges.
P241	Use explosion-proof electrical, ventilating and lighting equipment.
P264	Wash contaminated body parts thoroughly after handling.
P240	Ground and bond container and receiving equipment.
P242	Use non-sparking tools.

Precautionary Statements (Response):

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER or physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P331 Do NOT induce vomiting.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P370 + P378 In case of fire: Use ... to extinguish.

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):

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

Other hazardsAccording 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

2-Methylpropan-1-ol (Content (W/W): > 99,5 %)
CAS Number: 78-83-1
EC-Number: 201-148-0

Hazardous ingredients (GHS)

According to UN GHS criteria

| Butan-1-ol

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Content (W/W): > 0 % - < 0,3 %	Flam. Liq. 3
CAS Number: 71-36-3	Acute Tox. 5 (oral)
EC-Number: 200-751-6	Acute Tox. 5 (dermal)
	Skin Irrit. 2
	Eye Dam. 1
	STOT SE 3 (drowsiness and dizziness)
	STOT SE 3 (irr. to respiratory syst.)
	H226, H318, H315, H336, H335, H303 + H313

Propan-1-ol

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

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

Flammable liquid 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

71-36-3: Butan-1-ol

78-83-1: 2-Methylpropan-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:

Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.

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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

Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid	
Form:	liquid	
Colour:	colourless	
Odour:	alcohol-like	
Odour threshold:	not determined	
Melting point:	< -90 °C	(ASTM D97)
Boiling point:	108 °C (1.013 hPa)	(OECD Guideline 103)
Flammability:	Flammable liquid and vapour.	(derived from flash point)
Lower explosion limit:	1,1 %(V) (19,9 °C) The lower explosion point of the substance/mixture has been determined. The explosion point describes the temperature of a flammable liquid at which the concentration of the saturated vapour mixed with air equals the lower explosion limit.	
Upper explosion limit:	11,7 %(V) (59,4 °C) The upper explosion point of the substance/mixture has been determined. This explosion point describes the temperature of a flammable liquid at which the concentration of the saturated vapour mixed with air equals the upper explosion limit.	
Flash point:	31 °C	(ISO 2719, closed cup)
Auto-ignition temperature:	400 °C	(DIN 51794)

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Thermal decomposition: No decomposition if stored and handled as prescribed/indicated.

pH value:

not applicable

Viscosity, dynamic: 3,103 mPa.s

(20 °C)

Literature data.

Thixotropy: not thixotropic

Solubility in water: (OECD Guideline 105)

70 g/l

(20 °C)

Solubility (qualitative) solvent(s): organic solvents

soluble

Partitioning coefficient n-octanol/water (log Kow): 1 (OECD Guideline 117)

(25 °C)

Vapour pressure: 9,5 hPa

(20 °C)

70,7 hPa

(50 °C)

Relative density: 0,8017 (DIN 51757)

(20 °C)

Density: 0,8017 g/cm³ (DIN 51757)

(20 °C)

Relative vapour density (air): 2,55 (calculated)

(20 °C)

Heavier than air.

Particle characteristics

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

9.2. Other information**Information with regard to physical hazard classes**Explosives

Explosion hazard: Based on the chemical structure there is no indication of explosive properties.

Impact sensitivity:

Based on the chemical structure there is no shock-sensitivity.

Oxidizing properties

Fire promoting properties: Based on its structural properties the product is not classified as oxidizing.

Flammable liquids

Sustained combustibility: not determined

Pyrophoric properties

Self-ignition temperature: Test type: Spontaneous self-ignition at room-temperature.

not self-igniting

Self-heating substances and mixtures

Self heating ability: not applicable, the product is a liquid

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:

Forms no flammable gases in the presence of water.

Corrosion to metals

No corrosive effect on metal.

Other safety characteristics

pKA:

The substance does not dissociate.

Adsorption/water - soil:

KOC: 2,92; log KOC: 0,47

(calculated)

Surface tension:

69,7 mN/m

(OECD Guideline 115, Ring

(20 °C; 1 g/l)

method)

Molar mass:

74,12 g/mol

SAPT-Temperature:

Study scientifically not justified.

Evaporation rate:

Value can be approximated from
Henry's Law Constant or vapor
pressure.

10. Stability and Reactivity**Reactivity**

Corrosion to metals: No corrosive effect on metal.

Formation of

Remarks:

flammable gases:

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:

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

Experimental/calculated data:

LD50 rat (oral): > 2.830 - 3.350 mg/kg (OECD Guideline 401)

LC50 rat (by inhalation): > 18,18 mg/l 6 h (similar to OECD guideline 403)

The vapour was tested.

LD50 rabbit (dermal): > 2.000 - 2.460 mg/kg (OECD Guideline 402)

Irritation

Assessment of irritating effects:

May cause severe damage to the eyes. Skin contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: irreversible damage (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:

Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:

Guinea pig maximization test guinea pig: Non-sensitizing.

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

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals.

Carcinogenicity

Assessment of carcinogenicity:

The chemical structure does not suggest a specific alert for such an effect.

Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect.

Developmental toxicity

Assessment of teratogenicity:

No indications of a developmental toxic / teratogenic effect were seen in animal studies.

Experiences in humans

Experimental/calculated data:

-

High concentrations have a narcotizing effect.

Specific target organ toxicity (single exposure)

Assessment of STOT single:

Possible narcotic effects (drowsiness or dizziness). Causes temporary irritation of the respiratory tract.

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

Assessment of repeated dose toxicity:

No substance-specific organotoxicity was observed after repeated administration to animals.

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) 1.430 mg/l, *Pimephales promelas* (Fish test acute, Flow through.)

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

Aquatic invertebrates:

EC50 (48 h) 1.100 mg/l, *Daphnia pulex* (ASTM E1193-97, static)

Nominal concentration.

Aquatic plants:

EC50 (72 h) 1.799 mg/l (growth rate), *Pseudokirchneriella subcapitata* (OECD Guideline 201, static)

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

Microorganisms/Effect on activated sludge:

Toxic limit concentration (16 h) 280 mg/l, *Pseudomonas putida* (DIN 38412 Part 8, aquatic)

Chronic toxicity to fish:

No data available regarding toxicity to fish.

Chronic toxicity to aquatic invertebrates:

No observed effect concentration (21 d) 20 mg/l, Daphnia magna (Daphnia test chronic, semistatic)
Nominal concentration.

Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

Persistence and degradability

Assessment biodegradation and elimination (H₂O):

Readily biodegradable (according to OECD criteria).

Elimination information:

70 - 80 % BOD of the ThOD (28 d) (OECD 301D; 92/69/EWG, C.4-E) (aerobic, other)

Assessment of stability in water:

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

Information on Stability in Water (Hydrolysis):

No data available.

No data available.

Bioaccumulative potential

Assessment bioaccumulation potential:

Significant accumulation in organisms is not to be expected.

Bioaccumulation potential:

No data available.

Mobility in soil

Assessment transport between environmental compartments:

Volatility: The substance will slowly 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

Additional information

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

13. Disposal Considerations

Waste treatment methods

Dispose of in accordance with national, state and local regulations.

Contaminated packaging:

Disposal must be made according to official regulations.

14. Transport Information

Land transport

ADR

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3

Packing group: III

Environmental hazards: no

Special precautions for user: Tunnel code: D/E

RID

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3

Packing group: III

Environmental hazards: no

Special precautions for user: None known

Inland waterway transport

ADN

UN number or ID number: UN1212

UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3

Packing group: III

Environmental hazards: no

Special precautions for user: None known

Transport in inland waterway vessel

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UN number or ID number: UN1212
UN proper shipping name: ISOBUTANOL

Transport hazard class(es): 3
Packing group: III
Environmental hazards: no
Type of inland waterway vessel: N
Cargo tank design: 3
Cargo tank type: 2

Sea transport

IMDG

UN number or ID number: UN 1212
UN proper shipping name: ISOBUTANOL (ISOBUTYL ALCOHOL)

Transport hazard class(es): 3
Packing group: III
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 1212
UN proper shipping name: ISOBUTANOL

Transport hazard class(es): 3
Packing group: III
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: Isobutyl alcohol
Pollution category: Z
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

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

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
Acute Tox.	Acute toxicity
Skin Irrit.	Skin irritation
Eye Dam.	Serious eye damage
STOT SE	Specific target organ toxicity — single exposure
H226	Flammable liquid and vapour.
H318	Causes serious eye damage.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H335	May cause respiratory irritation.
H303 + H313	May be harmful if swallowed or in contact with skin.
H225	Highly flammable liquid and vapour.
H313	May be harmful in contact with skin.

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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