

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

n-Butanol

Manufacturer/supplier identification

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2. Hazards identification

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]

Flammable liquids (Category 3)

Acute toxicity, Oral (Category 4)

Skin corrosion/irritation (Category 2)

Serious eye damage/eye irritation (Category 1)

Specific target organ toxicity - single exposure (Category 3), respiratory tract irritation, Narcotic effects

Label elements

Pictogram



Signal word Danger

Hazard statement(s)

H226 Highly flammable liquid and vapor.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

H336 May cause drowsiness or dizziness.

Precautionary statement(s)

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/ doctor if you feel unwell.
P362	Take off contaminated clothing.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements
none

3. Composition/information on ingredients

Synonyms

n-Butanol

CAS-No.: 71-36-3

M: 74.12 g/mol

Molecular formula: C₄H₁₀O

4. First aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. Fire-fighting measures

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. Accidental release measures

Personal precautions

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

7. Handling and storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure controls/personal protection**Appropriate engineering controls**

General industrial hygiene practice.

Personal protective equipment**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Do not let product enter drains.

9. Physical and chemical properties

Form: liquid

Colour: colorless

Odour: not available

pH value: 7

Melting point: -89 °C.

Boiling point: 118 °C

Ignition temperature: not available

Flash point: 35 °C - closed cup

Autoignition temperature: not available

Explosion limits

lower: 1.4 %(V)

upper: 11.2 %(V)

Density : 0.81 g/cm³

Bulk density: not available

water (20 °C) : slightly soluble in water

diluted acids (20 °C) : not available

Thermal decomposition: not available

10. Stability and reactivity

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Exposure to moisture.

Materials to avoid

Strong acid, acyl chloride, anhydride, strong oxidant

Hazardous decomposition products

Other decomposition products - no data available

11. Toxicological information

Acute toxicity

LD50 Oral - Rat - 790 mg/kg

LD50 Dermal - Rabbit - 3,400 mg/kg

Skin corrosion/irritation

Skin - Rabbit

Result: Skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irreversible effects on the eye

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

Toxicity

Toxicity to fish static test LC50 - Pimephales promelas (fathead minnow) - 1,840 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates static test EC50 - Daphnia magna (Water flea) - 1,983 mg/l - 48 h

Persistence and degradability

no data available

Bioaccumulative potential

Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 24 h - 921 mg/l(n-butanol)
Bioconcentration factor (BCF): 0.38

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. Disposal considerations

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

14. Transport information

ADR/RID

UN-Number: 1120 Class: 3 Packing group: III

Proper shipping name: BUTANOLS N-BUTANOL

IMDG

UN-Number: 1120 Class: 3 Packing group: III

Proper shipping name: BUTANOLS N-BUTANOL

Marine pollutant: no

IATA

UN-Number: 1120 Class: 3 Packing group: III

Proper shipping name: BUTANOLS N-BUTANOL

15. Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. Other information

General update.

Regional representation:

This information is given on the authorised Safety Data Sheet for your country.