

SAFETY DATA SHEET

N-butanol

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name

N-butanol

Other means of identification

Index No.: 603-004-00-6

EC No.: 200-751-6

CAS No.: 71-36-3

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

▼ Relevant identified uses of the substance or mixture

Industrial purposes

Restricted to professional users.

▼ Uses advised against

None known.

1.3. Details of the supplier of the safety data sheet

▼ Company and address

Solveco AB

Tallbacksgatan 10

S-195 72 Rosersberg

Sweden

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Contact person

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Revision

20/10/2023

SDS Version

2.0

Date of previous version

24/06/2020 (1.0)

1.4. Emergency telephone number

Contact The National Poisons Information Service (dial 111, 24 h service).

See section 4 "First aid measures".

SECTION 2: Hazards identification

Classified according to Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.

2.1. Classification of the substance or mixture

Flam. Liq. 3; H226, Flammable liquid and vapour.

Acute Tox. 4; H302, Harmful if swallowed.

Skin Irrit. 2; H315, Causes skin irritation.

Eye Dam. 1; H318, Causes serious eye damage.

STOT SE 3; H335, May cause respiratory irritation.

STOT SE 3; H336, May cause drowsiness or dizziness.

2.2. Label elements

Hazard pictogram(s)



Signal word

Danger

▼ Hazard statement(s)

Flammable liquid and vapour. (H226)
 Harmful if swallowed. (H302)
 Causes skin irritation. (H315)
 Causes serious eye damage. (H318)
 May cause respiratory irritation. (H335)
 May cause drowsiness or dizziness. (H336)

Precautionary statement(s)

General

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▼ Prevention

Wash hands and exposed skin thoroughly after handling. (P264)
 Wear protective gloves/eye protection/protective clothing. (P280)

▼ Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing. (P305+P351+P338)
 Immediately call a POISON CENTER/doctor. (P310)

▼ Storage

Store in a well-ventilated place. Keep cool. (P403+P235)

▼ Disposal

Dispose of contents/container in accordance with local regulation (P501)

Hazardous substances

butan-1-ol

▼ Additional labelling

Not applicable.

2.3. Other hazards

▼ Additional warnings

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

This product does not contain any substances considered to be endocrine disruptors in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients

3.1. ▼ Substances

Product/substance	Identifiers	% w/w	Classification	Note
butan-1-ol	CAS No.: 71-36-3 EC No.: 200-751-6 UK-REACH: Index No.: 603-004-00-6	95-100%	Flam. Liq. 3, H226 Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 STOT SE 3, H336	

3.2. ▼ Mixtures

Not applicable. This product is a substance.

See full text of H-phrases in section 16. Occupational exposure limits are listed in section 8, if these are available.

▼ Other information

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SECTION 4: First aid measures

4.1. Description of first aid measures

General information

In the case of accident: Contact a doctor or casualty department – take the label or this safety data sheet. Contact a doctor if in doubt about the injured person's condition or if the symptoms persist. Never give an unconscious person water or other drink.

Inhalation

Upon breathing difficulties or irritation of the respiratory tract: Bring the person into fresh air and stay with him/her.

▼ Skin contact

IF ON SKIN: Wash with plenty of water and soap.

Remove contaminated clothing and shoes. Ensure to wash exposed skin thoroughly with water and soap. DO NOT use solvents or thinners.

If skin irritation occurs: Get medical advice/attention.

▼ Eye contact

If in eyes: Flush eyes with plenty of water or salt water (20-30 °C) for at least 30 minutes and continue until irritation stops. Remove contact lenses. Make sure you flush under the upper and lower eyelids. Seek medical assistance immediately and continue flushing during transport.

▼ Ingestion

In the case of ingestion, contact a doctor immediately. If the person is conscious, give them water. DO NOT try to induce vomiting unless this is recommended by a doctor. Hold head facing down to prevent vomit from returning to the mouth and throat. Prevent shock by keeping the injured person warm and calm. Initiate immediate resuscitation if breathing stops. If unconscious, roll the injured person into recovery position. Call an ambulance.

Burns

Rinse with water until pain stops then continue to rinse for 30 minutes.

4.2. ▼ Most important symptoms and effects, both acute and delayed

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system.

Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

4.3. Indication of any immediate medical attention and special treatment needed

IF exposed or concerned:

Get immediate medical advice/attention.

Information to medics

Bring this safety data sheet or the label from this product.

SECTION 5: Firefighting measures

5.1. ▼ Extinguishing media

Suitable extinguishing media: Alcohol-resistant foam, carbon dioxide, powder, water mist.

Unsuitable extinguishing media: Waterjets should not be used, since they can spread the fire.

5.2. ▼ Special hazards arising from the substance or mixture

Flammable liquid and vapour.

In use may form flammable/explosive vapour-air mixture.

Fire will result in dense smoke. Exposure to combustion products may harm your health. Closed containers, which are exposed to fire, should be cooled with water. Do not allow fire-extinguishing water to enter the sewage system and nearby surface waters.

If the product is exposed to high temperatures, e.g. in the event of fire, dangerous decomposition compounds are produced. These are:

Carbon oxides (CO / CO₂)

5.3. Advice for firefighters

Wear self-contained breathing apparatus and protective clothing to prevent contact. Upon direct exposure contact The National Poisons Information Service (dial 111, 24 h service) in order to obtain further advice.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Storages not yet ignited must be cooled by water mist. Remove flammable materials if conditions allow it. Ensure sufficient ventilation.

Avoid direct contact with spilled substances.

Ensure adequate ventilation, especially in confined areas.
Avoid inhalation of vapours from spilled material.
Contaminated areas may be slippery.

6.2. Environmental precautions

Avoid discharge to lakes, streams, sewers, etc.
Keep unauthorized persons away from the spill

6.3. ▼ Methods and material for containment and cleaning up

Limit spillage and collect using granular absorbent or similar materials, and dispose of it in accordance with the regulations on dangerous waste.
Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.
Wherever possible cleaning should be performed with normal cleaning agents. Avoid use of solvents.

6.4. ▼ Reference to other sections

See section 13 "Disposal considerations" on handling of waste.
See section 8 "Exposure controls/personal protection" for protective measures.

SECTION 7: Handling and storage

7.1. ▼ Precautions for safe handling

Ground and bond container and receiving equipment.
Use explosion-proof [electrical/lighting/ventilating] equipment.
Use non-sparking tools.
Take action to prevent static discharges.
Avoid direct contact with the product.
Avoid contact during pregnancy and while nursing.
Smoking, drinking and consumption of food is not allowed in the work area.
See section 8 "Exposure controls/personal protection" for information on personal protection.

7.2. ▼ Conditions for safe storage, including any incompatibilities

Containers that have been opened must be carefully resealed and kept upright to prevent leakage.
Take action to prevent static discharges.
Must be stored in a cool and well-ventilated area, away from possible sources of ignition.

▼ Recommended storage material

Always store in containers of the same material as the original container.

▼ Storage temperature

Dry, cool and well ventilated

▼ Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

7.3. ▼ Specific end use(s)

This product should only be used for applications quoted in section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. ▼ Control parameters

butan-1-ol
Short term exposure limit (15 minutes) (ppm): 50
Short term exposure limit (15 minutes) (mg/m³): 154
Annotations:
Sk = Can be absorbed through the skin and lead to systemic toxicity.

The Control of Substances Hazardous to Health Regulations 2002. SI 2002/2677 The Stationery Office 2002.
EH40/2005 Workplace exposure limits (Fourth Edition 2020).

▼ DNEL

No data available.

▼ PNEC

No data available.

8.2. ▼ Exposure controls

Compliance with the given occupational exposure limits values should be controlled on a regular basis.

▼ General recommendations

Smoking, drinking and consumption of food is not allowed in the work area.

Exposure scenarios

There are no exposure scenarios implemented for this product.

Exposure limits

Professional users are subjected to the legally set maximum concentrations for occupational exposure. See occupational hygiene limit values above.

▼ Appropriate technical measures

The formation of vapours must be kept at a minimum and below current limit values (see above). Installation of a local exhaust system if normal air flow in the work room is not sufficient is recommended. Ensure eyewash and emergency showers are clearly marked.

Ensure that eyewash stations and safety showers are located within easy reach.

Apply standard precautions during use of the product. Avoid inhalation of vapours.

▼ Hygiene measures

Take off contaminated clothing and wash it before reuse.

▼ Measures to avoid environmental exposure


No specific requirements.

Individual protection measures, such as personal protective equipment


▼ Generally

Use only UKCA marked protective equipment.



▼ Respiratory Equipment

Work situation	Type	Class	Colour	Standards	
If ventilation at the work place is insufficient, use a half- or full mask with an appropriate filter or an air-supplied breathing apparatus.	A	-	Brown	EN14387	


Skin protection

Recommended	Type/Category	Standards	
Dedicated work clothing should be worn.	-	-	

▼ Hand protection

Material	Glove thickness (mm)	Breakthrough time (min.)	Standards	
Nitrile	-	-	EN374-2	
Butyl	-	-	EN374-2, EN374-3, EN388, EN421	

Eye protection

Type	Standards	
Use face protection or safety glasses with side shields.	EN166	

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state

Liquid

Colour

Colourless

▼ Odour / Odour threshold

Sharp/pungent

▼ pH

Testing not relevant or not possible due to the nature of the product.

Density (g/cm³)

0.81

▼ Kinematic viscosity

4 mm²/s

▼ Particle characteristics

Does not apply to liquids.

Phase changes

▼ Melting point/Freezing point (°C)

-89,5

▼ Softening point/range (waxes and pastes) (°C)

Does not apply to liquids.

▼ Boiling point (°C)

117

Vapour pressure

0.76 kPa

Relative vapour density

2,55

▼ Decomposition temperature (°C)

Testing not relevant or not possible due to the nature of the product.

Data on fire and explosion hazards

▼ Flash point (°C)

29

▼ Flammability (°C)

The material is ignitable.

▼ Auto-ignition temperature (°C)

340

▼ Lower and upper explosion limit (% v/v)

1.4 - 11

Solubility

▼ Solubility in water

Completely soluble

▼ n-octanol/water coefficient

Testing not relevant or not possible due to the nature of the product.

▼ Solubility in fat (g/L)

Testing not relevant or not possible due to the nature of the product.

9.2. Other information

▼ Other physical and chemical parameters

No data available.

▼ Oxidizing properties

Testing not relevant or not possible due to the nature of the product.

SECTION 10: Stability and reactivity

10.1. ▼ Reactivity

No data available.

10.2. ▼ Chemical stability

The product is stable under the conditions, noted in section 7 "Handling and storage".

10.3. ▼ Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid static electricity.

Do not expose to any forms of heat (e.g. solar radiation). May lead to excess pressure.

10.5. Incompatible materials

Strong acids, strong bases, strong oxidizing agents, and strong reducing agents.

10.6. Hazardous decomposition products

The product is not degraded when used as specified in section 1.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

▼ Acute toxicity

Product/substance	butan-1-ol
Species:	Rat
Route of exposure:	Inhalation
Test:	LC50 (4 hours)
Result:	25 mg/L

Product/substance	butan-1-ol
Species:	Rat
Route of exposure:	Oral
Test:	LD50
Result:	700 mg/kgbw

Product/substance	butan-1-ol
Species:	Rabbit
Route of exposure:	Dermal
Test:	LD50
Result:	3400 mg/kgbw

Harmful if swallowed.

Skin corrosion/irritation

Causes skin irritation.

▼ Serious eye damage/irritation

Product/substance	butan-1-ol
Test method:	OECD:s riktlinjer för test 405
Duration:	No data available.
Result:	Adverse effect observed (Highly irritating)

Causes serious eye damage.

▼ Respiratory sensitisation

Based on available data, the classification criteria are not met.

Skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation.

May cause drowsiness or dizziness.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

11.2. Information on other hazards

▼ Long term effects

The product contains substances that cause serious eye damage. Contact with these substances can cause irreversible effects on the eye / serious eye damage.

Neurotoxic effects: This product contains organic solvents, which may cause adverse effects to the nervous system.

Symptoms of neurotoxicity include: loss of appetite, headache, dizziness, ringing in ears, tingling sensations of skin, sensitivity to the cold, cramps, difficulty in concentrating, tiredness, etc. Repeated exposure to solvents can result in the breaking down of the skin's natural fat layer and may result in an increased absorption potential of other hazardous substances at the area of exposure.

▼ Endocrine disrupting properties

This mixture/product does not contain any substances considered to have hormone-disrupting properties in relation to health.

▼ Other information

None known.

SECTION 12: Ecological information

12.1. ▼ Toxicity

Product/substance	butan-1-ol
Species:	Fish (Pimephales promelas)
Duration:	96 hours
Test:	LC50
Result:	1200 mg/L

Product/substance	butan-1-ol
Species:	Daphnia (Daphnia magna)
Duration:	48 hours
Test:	EC50
Result:	1983 mg/L

Product/substance	butan-1-ol
Species:	Algae (Scenedesmus subspicatus)
Duration:	72 hours
Test:	IC50
Result:	500 mg/L

12.2. ▼ Persistence and degradability

Product/substance	butan-1-ol
Biodegradable:	Yes

12.3. ▼ Bioaccumulative potential

Product/substance	butan-1-ol
Potential bioaccumulation:	No data available.
LogPow:	0,78
BCF:	0.64

12.4. ▼ Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This mixture/product does not contain any substances considered to meet the criteria classifying them as PBT and/or vPvB.

12.6. ▼ Endocrine disrupting properties

This mixture/product does not contain any substances considered to have endocrine-disrupting properties in relation to the environment.

12.7. ▼ Other adverse effects

None known.

SECTION 13: Disposal considerations

13.1. ▼ Waste treatment methods

Product is covered by the regulations on hazardous waste. (*)

HP 3 - Flammable

HP 4 - Irritant (skin irritation and eye damage)

HP 5 - Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

HP 6 - Acute toxicity

Dispose of contents/container to an approved waste disposal plant.

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

EWC code

20 01 13* Solvents

Contaminated packing

Packaging containing residues of the product must be disposed of similarly to the product.

SECTION 14: Transport information

According to EC-Regulation 1907/2006 (REACH), annex II, including changes implemented by EC-Regulation 2020/878

	14.1 UN / ID	14.2 UN proper shipping name	14.3 Hazard class(es)	14.4 PG*	14.5 Env**	Other information:
ADR	1120	BUTANOLS	Transport hazard class: 3 Label: 3 Classification code: F1	III	No	Limited quantities: 5L Tunnel restriction code: 3 (D/E) See below for additional information.
IMDG	1120	BUTANOLS	Transport hazard class: 3 Label: 3 Classification code: F1	III	No	Limited quantities: 5L EmS: F-E S-D See below for additional information.
IATA	-	-	-	-	-	-

* Packing group

** Environmental hazards

▼ **Additional information**

ADR / See Table A, section 3.2.1 for any information on special provisions, requirements, or warnings in connection with transport. See section 5.4.3, for instructions in writing regarding mitigation of damages in relation to incidents or accidents during transport.

IMDG / See section 3.2.1, for any information on special provisions, requirements, or warnings in connection with transport.

This product is within scope of the regulations of transport of dangerous goods.

14.6. ▼ **Special precautions for user**

Not applicable.

14.7. ▼ **Maritime transport in bulk according to IMO instruments**

No data available.

SECTION 15: Regulatory information

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

▼ **Restrictions for application**

Restricted to professional users.

Pregnant women and women breastfeeding must not be exposed to this product. The risk, and possible technical precautions or design of the workplace needed to eliminate exposure, must be considered.

▼ **Demands for specific education**

No specific requirements.

▼ **SEVESO - Categories / dangerous substances**

P5c - FLAMMABLE LIQUIDS, Qualifying quantity (lower-tier): 5.000 tonnes / (upper-tier): 50.000 tonnes

▼ **Additional information**

Not applicable.

▼ **Sources**

The Management of Health and Safety at Work Regulations 1999.

The Health and Safety at Work etc. Act 1974 Regulations 2013.

Control of Major Accident Hazards (COMAH) Regulations 2015.

Regulation (EU) No 1357/2014 of 18 December 2014 on waste as retained and amended in UK law.

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) as retained and amended in UK law.

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) as retained and amended in UK law.

15.2. Chemical safety assessment

No

SECTION 16: Other information

▼ **Full text of H-phrases as mentioned in section 3**

H226, Flammable liquid and vapour.
H302, Harmful if swallowed.
H315, Causes skin irritation.
H318, Causes serious eye damage.
H335, May cause respiratory irritation.
H336, May cause drowsiness or dizziness.

▼ Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
CAS = Chemical Abstracts Service
CE = Conformité Européenne (European conformity)
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CSA = Chemical Safety Assessment
CSR = Chemical Safety Report
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EINECS = European Inventory of Existing Commercial chemical Substances
ES = Exposure Scenario
EUH statement = CLP-specific Hazard statement
EuPCS = European Product Categorisation System
EWC = European Waste Catalogue
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer (IARC)
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
OECD = Organisation for Economic Co-operation and Development
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
RRN = REACH Registration Number
SCL = A specific concentration limit
SVHC = Substances of Very High Concern
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure
STOT-SE = Specific Target Organ Toxicity - Single Exposure
TWA = Time weighted average
UN = United Nations
UVBC = Unknown or variable composition, complex reaction products or of biological materials
VOC = Volatile Organic Compound
vPvB = Very Persistent and Very Bioaccumulative

▼ Additional information

The classification of the substance/mixture in regard of health hazards are in accordance with the calculation methods given by Regulation (EC) No. 1272/2008 (CLP) as retained and amended in UK law.
The classification of the mixture in regard to physical hazards has been based on experimental data.

▼ The safety data sheet is validated by

Christian Andersson

▼ Other

A change (in proportion to the last essential change (first cipher in SDS version, see section 1)) is marked with a blue triangle.

The information in this safety data sheet applies only to this specific product (mentioned in section 1) and is not necessarily correct for use with other chemicals/products.

It is recommended to hand over this safety data sheet to the actual user of the product. Information in this safety data sheet cannot be used as a product specification.

Country-language: GB-en