



Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 3/17/2023 Version: 1.1

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

1.1. Product identifier

Product form	: Substance
Trade name	: Butanol-(1) a.r.
EC Index-No.	: 603-004-00-6
EC-No.	: 200-751-6
CAS-No.	: 71-36-3
REACH registration No.	: 01-2119484630-38
Product code	: CL00.0220
Type of product	: Pure substance
Formula	: C4H10O
Synonyms	: 1-Butanol / 1-butyl alcohol / 1-hydroxy butane / alcohol C4 / butan-1-ol / butanol / butyl alcohol / butyl hydroxide / butyric alcohol / butyric alcohol, n- / butyric alcohol, normal- / CCS203 / FEMA No 2178 / hemostyp / methyl ethyl carbinol / methylol propane / n-butan-1-ol / n-butanol / n-butyl alcohol / n-butyric alcohol / normal primary butyl alcohol / normal-butan-1-ol / normal-butanol / normal-butyl alcohol / normal-butyric alcohol / normal-propyl carbinol / n-prim butyl alcohol / n-propyl carbinol / primary-normal-butyl alcohol / prim-n-butyl alcohol / propyl carbinol / propyl methanol
BIG No	: 10139

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemical

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Chem-Lab nv
Industriezone 'De arend 2'
Zedelgem – Belgium
Belgium
T +32 50 288320
info@chem-lab.be - <https://www.chem-lab.be>

1.4. Emergency telephone number

Emergency number : +32 50 28 83 20

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Acute toxicity (oral), Category 4	H302
Serious eye damage/eye irritation, Category 1	H318
Skin corrosion/irritation, Category 2	H315
Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation	H335
Specific target organ toxicity – Single exposure, Category 3, Narcosis	H336
Full text of H- and EUH-statements: see section 16	

Adverse physicochemical, human health and environmental effects

No additional information available

Butanol-(1) a.r.

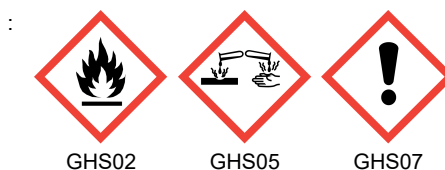
Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

Hazard statements (CLP)

Precautionary statements (CLP)

- : Danger
- : H226 - Flammable liquid and vapour.
H302 - Harmful if swallowed.
H318 - Causes serious eye damage.
H315 - Causes skin irritation.
H335 - May cause respiratory irritation.
H336 - May cause drowsiness or dizziness.
- : P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P313 - Get medical advice/attention.

2.3. Other hazards

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type

: Mono-constituent

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Butanol-(1) a.r.	CAS-No.: 71-36-3 EC-No.: 200-751-6 EC Index-No.: 603-004-00-6 REACH-no: 01-2119484630-38	100	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 (ATE=500 mg/kg bodyweight) Eye Dam. 1, H318 Skin Irrit. 2, H315 STOT SE 3, H335 STOT SE 3, H336

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: Observe (own) safety. If possible, approach victim and check vital functions. In case of injury and/or intoxication, call the European emergency number 112. Treat symptoms starting with most life-threatening injuries and disorders. Keep victim under observation, possibility of delayed symptoms.

First-aid measures after inhalation

: Remove victim into fresh air. In case of respiratory problems, consult a doctor/medical service.

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

First-aid measures after skin contact	: If possible, wipe up/dry remove chemical. Then rinse/shower immediately with (lukewarm) water. If irritation persists, consult a doctor/medical service.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service.
First-aid measures after ingestion	: Rinse mouth with water. If you feel unwell, consult a doctor/medical service. Do not wait for symptoms to occur to consult Poison Center.

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

Symptoms/effects after inhalation	: Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Headache. Dizziness. Drowsiness. Coughing. Dry/sore throat. Disturbances of consciousness. Central nervous system depression.
Symptoms/effects after skin contact	: Tingling/irritation of the skin. Red skin.
Symptoms/effects after eye contact	: Corrosion of the eye tissue. Redness of the eye tissue. Inflammation/damage of the eye tissue. Lacrimation. Visual disturbances.
Symptoms/effects after ingestion	: AFTER INGESTION OF HIGH QUANTITIES: Nausea. Headache. Vomiting. Central nervous system depression. Drunkenness. Symptoms similar to those listed under inhalation.
Chronic symptoms	: Skin rash/inflammation. Dry skin. Enlargement/affection of the liver. Lacrimation. Visual disturbances. Conjunctivitis. Auditory disturbances.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.
Unsuitable extinguishing media	: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD: Flammable liquid and vapour. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD: May be ignited by sparks.
Explosion hazard	: DIRECT EXPLOSION HAZARD: Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD: may be ignited by sparks.
Hazardous decomposition products in case of fire	: Upon combustion: CO and CO2 are formed.

5.3. Advice for firefighters

Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat.
Protection during firefighting	: Heat/fire exposure: self-contained breathing apparatus (EN 136 + EN 137).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves (EN 374). Protective goggles (EN 166). Head/neck protection. Protective clothing (EN 14605 or EN 13034). Large spills/in enclosed spaces: self-contained breathing apparatus (EN 136 + EN 137). Large spills/in enclosed spaces: gas-tight suit (EN 943).
Emergency procedures	: Keep upwind. Mark the danger area. Consider evacuation. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosionproof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

6.2. Environmental precautions

Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

- For containment : Contain released product, collect/pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute combustible/toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills. On heating: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water.
- Methods for cleaning up : Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite, kieselguhr, powdered limestone. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Use spark-/explosionproof appliances and lighting system. Use earthed equipment. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed. Handle uncleaned empty containers as full ones. Do not discharge the waste into the drain. Do not use compressed air for pumping over.
- Hygiene measures : Observe normal hygiene standards.

7.2. Conditions for safe storage, including any incompatibilities

- Storage temperature : < 30 °C
- Heat and ignition sources : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. halogens.
- Storage area : Meet the legal requirements. Store in a dry area. Keep container in a well-ventilated place. Fireproof storeroom. Store only in a limited quantity. Provide for a tub to collect spills. Provide the tank with earthing.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: steel. stainless steel. monel steel. iron. copper. bronze. polypropylene. glass. MATERIAL TO AVOID: aluminium. PVC.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Butanol-(1) a.r. (71-36-3)	
Belgium - Occupational Exposure Limits	
OEL TWA	62 mg/m ³
OEL TWA [ppm]	20 ppm

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Butanol-(1) a.r. (71-36-3)	
France - Occupational Exposure Limits	
VLE (OEL C/STEL)	150 mg/m ³
VLE (OEL C/STEL) [ppm]	50 ppm
United Kingdom - Occupational Exposure Limits	
WEL STEL (OEL STEL)	154 mg/m ³
WEL STEL (OEL STEL) [ppm]	50 ppm
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

Butanol-(1) a.r. (71-36-3)	
DNEL/DMEL (Workers)	
Long-term - local effects, inhalation	310 mg/m ³
DNEL/DMEL (General population)	
Long-term - systemic effects, oral	1.562 mg/kg bw/day
Long-term - systemic effects, inhalation	55.357 mg/m ³
Long-term - systemic effects, dermal	3.125 mg/kg bw/day
Long-term - local effects, inhalation	155 mg/m ³
PNEC (Water)	
PNEC aqua (freshwater)	0.082 mg/l
PNEC aqua (marine water)	0.008 mg/l
PNEC (Sediment)	
PNEC sediment (freshwater)	0.324 mg/kg dwt
PNEC sediment (marine water)	0.032 mg/kg dwt
PNEC (Soil)	
PNEC soil	0.017 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	2476 mg/l

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Protective goggles (EN 166)

8.2.2.2. Skin protection

Skin and body protection:

Protective clothing (EN 14605 or EN 13034). Head/neck protection

Hand protection:

Protective gloves against chemicals (EN 374)

Other skin protection

Materials for protective clothing:

Excellent resistance: Butyl rubber. Nitrile rubber. Polyethylene/ethylenevinylalcohol. Viton. Less resistance: Polyvinylalcohol (PVA). Polyvinylchloride (PVC). Poor resistance: Natural rubber. Polyethylene

8.2.2.3. Respiratory protection

Respiratory protection:

Full face mask with filter type A at conc. in air > exposure limit

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Colourless.
Appearance	: Liquid.
Molecular mass	: 74.12 g/mol
Odour	: Irritating/pungent odour. Alcohol odour. Sweet odour.
Odour threshold	: Not available
Melting point	: < -90 °C (ISO 3016: Petroleum products - Determination of pour point)
Freezing point	: Not available
Boiling point	: 119 °C (1013 hPa, Equivalent or similar to OECD 103)
Flammability	: Not available
Explosive limits	: 1.4 – 11.3 vol %
Lower explosion limit	: 1.4 vol %
Upper explosion limit	: 11.3 vol %
Flash point	: 35 °C (Closed cup, 1013 hPa, ISO 2719: Flash point (Pensky-Martens))
Auto-ignition temperature	: 355 °C (1019 hPa, EU Method A.15: Auto-ignition Temperature (liquids and gases), T2)
Decomposition temperature	: No data available in the literature
pH	: 7 (7 %)
Viscosity, kinematic	: No data available in the literature
Viscosity, dynamic	: 2.95 mPa.s (20 °C, DIN 51562: Capillary viscometer)

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Solubility	: Moderately soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in other organic solvents. Soluble in oils/fats. Water: 6.6 g/100ml (OECD 105: Water Solubility) Ethanol: complete Ether: complete Acetone: > 10 g/100ml
Partition coefficient n-octanol/water (Log Kow)	: Not available
Partition coefficient n-octanol/water (Log Pow)	: 1 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Vapour pressure	: < 10 hPa (20 °C, EN 13016-1: Liquid petroleum products – Vapour pressure)
Vapour pressure at 50°C	: Not available
Critical pressure	: 48400 hPa
Saturation concentration	: 20 g/m ³
Density	: 810 kg/m ³ (20 °C, ASTM D4052: Density, Relative Density, and API Gravity of Liquids by Digital Density Meter)
Relative density	: 0.81 (20 °C, ASTM D4052: Density, Relative Density, and API Gravity of Liquids by Digital Density Meter)
Relative vapour density at 20°C	: 2.6
Relative density of saturated gas/air mixture	: 1.01
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

Explosion limits	: 1.4 – 11.3 vol %
Critical temperature	: 287 °C

9.2.2. Other safety characteristics

Relative evaporation rate (butylacetate=1)	: 0.46
Relative evaporation rate (ether=1)	: 33
Specific conductivity	: 910000 pS/m
VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C, Clear, Volatile, Neutral reaction

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers: (increased) risk of fire/explosion. Violent exothermic reaction with (some) acids. Violent to explosive reaction with (some) halogens.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

Butanol-(1) a.r. (71-36-3)	
LD50 oral rat	2292 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	3430 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 17.76 mg/l air (Equivalent or similar to OECD 403, 4 h, Rat, Male / female, Experimental value, (maximum achievable concentration), Inhalation (vapours), 14 day(s))

Skin corrosion/irritation : Causes skin irritation.
pH: 7 (7 %)
Serious eye damage/irritation : Causes serious eye damage.
pH: 7 (7 %)
Respiratory or skin sensitisation : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : May cause respiratory irritation. May cause drowsiness or dizziness.
STOT-repeated exposure : Not classified
Aspiration hazard : Not classified

Butanol-(1) a.r. (71-36-3)	
Viscosity, kinematic	No data available in the literature

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Potential adverse human health effects and symptoms : Harmful if swallowed, Causes skin irritation, Practically non-toxic in contact with skin (LD50 skin > 2000 mg/kg), May cause respiratory irritation, May cause drowsiness or dizziness, Causes serious eye damage, Caution! Substance is absorbed through the skin

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified as dangerous for the environment according to the criteria of Regulation (EC) No 1272/2008.
Ecology - air : Not included in the list of substances which may contribute to the greenhouse effect (IPCC). Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Photooxidation in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Not harmful to crustacea (Daphnia). Not harmful to fishes. Groundwater pollutant. Nitrification of activated sludge is inhibited. Slightly harmful to algae. Not harmful to bacteria.
Hazardous to the aquatic environment, short-term (acute) : Not classified
Hazardous to the aquatic environment, long-term (chronic) : Not classified
Not rapidly degradable

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Butanol-(1) a.r. (71-36-3)	
LC50 - Fish [1]	1376 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	1328 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 algae	225 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

Butanol-(1) a.r. (71-36-3)	
Persistence and degradability	Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.1 – 1.92 g O ₂ /g substance
Chemical oxygen demand (COD)	2.46 g O ₂ /g substance
ThOD	2.59 g O ₂ /g substance

12.3. Bioaccumulative potential

Butanol-(1) a.r. (71-36-3)	
Partition coefficient n-octanol/water (Log Pow)	1 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

Butanol-(1) a.r. (71-36-3)	
Surface tension	69.9 mN/m (20 °C, 1 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.54 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Highly mobile in soil. May be harmful to plant growth, blooming and fruit formation.

12.5. Results of PBT and vPvB assessment

Butanol-(1) a.r. (71-36-3)	
This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

No additional information available

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878






SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Dispose of at authorized waste collection point. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals.
- Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
- European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
07 01 04* - other organic solvents, washing liquids and mother liquors

SECTION 14: Transport information

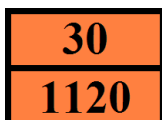
In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1120	UN 1120	UN 1120	UN 1120	UN 1120
14.2. UN proper shipping name				
butanols	butanols	butanols	butanols	butanols
Transport document description				
UN 1120 butanols, 3, III, (D/E)	UN 1120 butanols, 3, III	UN 1120 butanols, 3, III	UN 1120 butanols, 3, III	UN 1120 butanols, 3, III
14.3. Transport hazard class(es)				
3	3	3	3	3
				
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No
No supplementary information available				

14.6. Special precautions for user

Overland transport

- Transport regulations (ADR) : Subject to the provisions
- Classification code (ADR) : F1
- Hazard identification number (Kemler No.) : 30
- Orange plates :



- Tunnel restriction code (ADR) : D/E

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

EAC code : •2Y

Transport by sea

Transport regulations (IMDG) : Subject to the provisions
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D

Air transport

Transport regulations (IATA) : Subject to the provisions

Inland waterway transport

Classification code (ADN) : F1
Carriage permitted (ADN) : T

Rail transport

Transport regulations (RID) : Subject to the provisions
Classification code (RID) : F1

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Not listed on REACH Annex XVII

REACH Annex XIV (Authorisation List)

Not listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Not listed on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Not listed on the PIC list (Regulation EU 649/2012)

POP Regulation (Persistent Organic Pollutants)

Not listed on the POP list (Regulation EU 2019/1021)

Ozone Regulation (1005/2009)

Not listed on the Ozone Depletion list (Regulation EU 1005/2009)

VOC Directive (2004/42)

VOC content : 100 %

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

15.1.2. National regulations

France

Occupational diseases	
Code	Description
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

Germany

Employment restrictions	: Observe restrictions according Act on the Protection of Working Mothers (MuSchG). Observe restrictions according Act on the Protection of Young People in Employment (JArbSchG).																									
Water hazard class (WGK)	: WGK 1, Slightly hazardous to water (Classification according to AwSV; ID No. 39).																									
Storage class (LGK, TRGS 510)	: LGK 3 - Flammable liquids.																									
Joint storage table	: <table border="1"><tbody><tr><td>LGK 1</td><td>LGK 2A</td><td>LGK 2B</td><td>LGK 3</td><td>LGK 4.1A</td></tr><tr><td>LGK 4.1B</td><td>LGK 4.2</td><td>LGK 4.3</td><td>LGK 5.1A</td><td>LGK 5.1B</td></tr><tr><td>LGK 5.1C</td><td>LGK 5.2</td><td>LGK 6.1A</td><td>LGK 6.1B</td><td>LGK 6.1C</td></tr><tr><td>LGK 6.1D</td><td>LGK 6.2</td><td>LGK 7</td><td>LGK 8A</td><td>LGK 8B</td></tr><tr><td>LGK 10</td><td>LGK 11</td><td>LGK 12</td><td>LGK 13</td><td>LGK 10-13</td></tr></tbody></table>	LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A	LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B	LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C	LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B	LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13
LGK 1	LGK 2A	LGK 2B	LGK 3	LGK 4.1A																						
LGK 4.1B	LGK 4.2	LGK 4.3	LGK 5.1A	LGK 5.1B																						
LGK 5.1C	LGK 5.2	LGK 6.1A	LGK 6.1B	LGK 6.1C																						
LGK 6.1D	LGK 6.2	LGK 7	LGK 8A	LGK 8B																						
LGK 10	LGK 11	LGK 12	LGK 13	LGK 10-13																						
Joint storage not permitted for	: LGK 1, LGK 2A, LGK 4.1A, LGK 4.1B, LGK 4.2, LGK 4.3, LGK 5.1A, LGK 5.1C, LGK 5.2, LGK 6.1B, LGK 6.2, LGK 7.																									
Joint storage with restrictions permitted for	: LGK 5.1B, LGK 6.1D, LGK 11, LGK 10-13.																									
Joint storage permitted for	: LGK 2B, LGK 3, LGK 6.1A, LGK 6.1C, LGK 8A, LGK 8B, LGK 10, LGK 12, LGK 13.																									
Hazardous Incident Ordinance (12. BImSchV)	: Is not subject of the Hazardous Incident Ordinance (12. BImSchV)																									
Technical Instructions on Air Quality Control (TA Luft)	: 5.2.5 Organic Substances.																									

Netherlands

ABM category	: B(5) - low hazard for aquatic organisms
SZW-lijst van kankerverwekkende stoffen	: The substance is not listed
SZW-lijst van mutagene stoffen	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Borstvoeding	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Vruchtbaarheid	: The substance is not listed
SZW-lijst van reprotoxische stoffen – Ontwikkeling	: The substance is not listed

Denmark

Class for fire hazard	: Class II-1
Store unit	: 5 liter
Classification remarks	: R10 <H226;H302;H318;H315;H335;H336>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product

Switzerland

Storage class (LK)	: LK 3 - Flammable liquids
--------------------	----------------------------

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of H- and EUH-statements:

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
---------------------	-----------------------------------

Butanol-(1) a.r.

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 3	Flammable liquids, Category 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.
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Respiratory tract irritation

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.