SAFETY DATA SHEET

n-Butanol
10420

Version / Revision	5	**Revision Date**	20-Jan-2026
Supersedes Version	4.00***	**Issuing date**	20-Jan-2026

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

1.1. Product identifier

Identification of the substance/preparation **n-Butanol**

CAS-No 71-36-3
EC No. 200-751-6
Registration number (REACh) 01-2119484630-38

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

Identified uses
Intermediate
Formulation
Distribution of substance
coatings
cleaning agent
Lubricants and lubricant additives
Metal working fluids / rolling oils
laboratory chemicals
Polymer processing
consumer care product

Uses advised against None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification

OXEA GmbH
Rheinpromenade 4A
D-40789 Monheim
Germany

OXEA Corporation
15375 Memorial Drive
West Memorial Place I
Suite 300
Houston, TX 77079
USA***

Product Information
Product Stewardship
FAX: +49 (0)208 693 2053
email: sc.psq@oxea.com

1.4. Emergency telephone number

Emergency telephone number
+65 3158 1198 (available 24/7)
000800 100 7479 (for domestic shipments only)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Flammable liquid Category 3, H226
Acute oral toxicity Category 4, H302
Skin corrosion/irritation Category 2, H315
Serious eye damage/eye irritation Category 1, H318
Target Organ Systemic Toxicant - Single exposure Category 3, H335, Category 3, H336

Additional information
For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms



Signal word **Danger**

Hazard statements
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.

Precautionary statements
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261: Avoid breathing gas/mist/vapours.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
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.
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/doctor.
P403 + P235: Store in a well ventilated place. Keep cool.

2.3. Other hazards

Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixture with air
Components of the product may be absorbed into the body by inhalation, ingestion and through the skin

PBT and vPvB assessment This substance is not considered to be persistent, bioaccumulating nor toxic

(PBT), nor very persistent nor very bioaccumulating (vPvB)

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACh-No	1272/2008/EC	Concentration (%)
Butan-1-ol	71-36-3	01-2119484630-38	Flam. Liq. 3; H226 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H335 STOT SE 3; H336	> 99,80

For full text of Hazard- and EU Hazard-statements see SECTION 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Skin
Wash off immediately with soap and plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Ingestion
Rinse mouth. Call a physician immediately. If conscious, drink plenty of water. Do not induce vomiting without medical advice.

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

Main symptoms
cough, headache, dizziness, drowsiness, nausea, vomiting, abdominal pain, unconsciousness, diarrhea.

Special hazard
Lung irritation, Pneumonia.

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

General advice
Remove contaminated, soaked clothing immediately and dispose of safely. If unconscious place in recovery position and seek medical advice. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal. Chemical pneumonitis could follow respiratory exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
dry chemical, carbon dioxide (CO2), water spray, alcohol-resistant foam

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixture with air

5.3. Advice for firefighters

Special protective equipment for firefighters
Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting
Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire. Do not allow run-off from fire fighting to enter drains or water courses. Foam should be applied in large quantities as it is broken down to some extent by the product.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.
For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up
Soak up with inert absorbent material (e.g. universal binder). Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
strong oxidizing agents
acids
acid chlorides
reducing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material. Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback. Vapours may form explosive mixture with air.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

Suitable material
stainless steel, mild steel

Unsuitable material
Attacks some forms of plastic and rubber, Natural Rubber

Temperature class
T2

7.3. Specific end use(s)

Intermediate
Formulation
Distribution of substance
coatings
cleaning agent
Lubricants and lubricant additives
Metal working fluids / rolling oils
laboratory chemicals
Polymer processing
consumer care product

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits India

India OELs

Component	CLV (mg/m³)	CLV (ppm)	Skin absorption	Carc. Cat.
Butan-1-ol 71-36-3 (> 99,80)	150	50	Yes	

Note
For details and further information please refer to the original regulation.

8.2. Exposure controls

Appropriate Engineering controls
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Respiratory protection
Respirator with A filter. Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus. Equipment should conform to EN 136 or EN 140 and EN 143.

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	butyl-rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,3 mm
Break through time	> 480 min

Suitable material	nitrile rubber
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.
Equipment should conform to EN 166

Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Environmental exposure controls
If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. Observe the exposure limits, clean exhaust air if needed. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	liquid
Colour	colourless
Odour	alcoholic
Odour threshold	No data available
pH	neutral
Melting point/freezing point	< -90 °C (Pour point)
Boiling point or initial boiling point and boiling range	119 °C @ 1013 hPa
Flash point	35 °C @ 1013 hPa
Method	ISO 2719
Evaporation rate	No data available
Flammability (solid, gas)	Does not apply, the substance is a liquid
Lower explosion limit	1,4 Vol %
Upper explosion limit	11,3 Vol %

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
10	1	0,010	20	68	DIN EN 13016-2
53	5,3	0,052	50	122	DIN EN 13016-2

Relative vapour density 2,6 (Air = 1) @ 20 °C (68 °F)

Density and/or relative density

Values	@ °C	@ °F	Method
0,81	20	68	DIN 51757

Solubility	66 g/l @ 20 °C, in water, OECD 105
Partition coefficient n-octanol/water (log value)	1 @ 25 °C (77 °F) OECD 117
Autoignition temperature	355 °C @ 1013 hPa
Method	DIN 51794
Decomposition temperature	No data available
Viscosity	2,947 mPa*s @ 20 °C
Method	dynamic, DIN 51562
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties

9.2. Other information

Molecular weight	74,12
Molecular formula	C4 H10 O

log Koc	0,54 calculated
Refractive index	1,399 @ 20 °C
Surface tension	69,9 mN/m (1 g/l @ 20°C (68°F)), OECD 115

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong oxidizing agents, acids, acid chlorides, reducing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Ingestion, Inhalation, Eye contact, Skin contact

Acute toxicity				
Butan-1-ol (71-36-3)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	2292 mg/kg	rat, female	OECD 401
Inhalative	LC0	> 17,76 mg/l (4h)	rat, male/female	OECD 403
Dermal	LD50	3430 mg/kg	rabbit male	OECD 402

Butan-1-ol, CAS: 71-36-3
Assessment
Based on available data, the classification criteria are not met for:
Acute oral toxicity
Acute dermal toxicity
Acute inhalation toxicity

Irritation and corrosion				
Butan-1-ol (71-36-3)				
Target Organ Effects	Species	Result	Method	

Skin	rabbit	irritating		2h
Eyes	rabbit	severe irritation	OECD 405	
Respiratory tract	human	irritating (up 200 ppm)		10 years
Respiratory tract	human	Low irritating potential		5 min
Respiratory tract	rat	irritating		7h

Butan-1-ol, CAS: 71-36-3
Assessment
The available data lead to the classification given in section 2

Sensitization				
Butan-1-ol (71-36-3)				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing		read across Weight of evidence

Butan-1-ol, CAS: 71-36-3
Assessment
Based on available data, the classification criteria are not met for:
Skin sensitization
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Butan-1-ol (71-36-3)				
Type	Dose	Species	Method	
Subchronic toxicity	NOAEL: 125 mg/kg/d	rat, male/female		Oral
Subchronic toxicity	LOAEL: 500 mg/kg/d (90d)	rat, male/female		Oral
Subchronic toxicity	NOAEL: ~ 2,35 mg/l/d (90d)	rat, male/female	EPA OTS 798.2450	Inhalation read across

Butan-1-ol, CAS: 71-36-3
Assessment
Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Butan-1-ol (71-36-3)					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		V79 cells, Chinese hamster	negative	OECD 476 (Mammalian Gene Mutation) HPRT	In vitro study
Mutagenicity		V79 cells, Chinese hamster	negative	Chromosomal Aberration	In vitro study
Mutagenicity		Salmonella typhimurium	negative	Ames test	
Mutagenicity		mouse male/female	negative	OECD 474	Oral in vivo micronucleus test
Reproductive toxicity	NOAEL 18,5 mg/l	rat, parental			Inhalation
Reproductive toxicity	NOAEL 18,5 mg/l	rat, 1.			Inhalation

		Generation, male/female			
Reproductive toxicity	NOAEL 5000 mg/kg/d	rat, parental, female		Oral Systemic toxicity	
Developmental Toxicity	NOAEL 1454 mg/kg/d	rat		OECD 414, Oral	Maternal toxicity, Fetal toxicity
Developmental Toxicity	NOAEL 5654 mg/kg/d	rat		OECD 414, Oral	Teratogenicity
Developmental Toxicity	NOAEL 10,8 mg/l	rat		Inhalation	Maternal toxicity, Fetal toxicity
Developmental Toxicity	NOAEL 24,7 mg/l	rat		Inhalation	Teratogenicity
Carcinogenicity	no carcinogenic potential			QSAR	
Reproductive toxicity	NOAEL 500 mg/kg/d	rat, male/female		Oral	
Reproductive toxicity	NOAEC: 2000 ppm	rat, male/female		OECD 416 Inhalation	Fertility read across
Reproductive toxicity	LOEL: 300 mg/kg/d	rat, 1. Generation, male/female		Oral	

Butan-1-ol, CAS: 71-36-3

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests did not show mutagenic effects
Did not show mutagenic effects in animal experiments
In the absence of specific alerts no cancer testing is required

Butan-1-ol, CAS: 71-36-3

Main symptoms

cough, headache, dizziness, drowsiness, nausea, vomiting, abdominal pain, unconsciousness, diarrhoea.

Target Organ Systemic Toxicant - Single exposure

The available data lead to the classification given in section 2

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:
STOT RE

Aspiration toxicity

Based on the viscosity a potential aspiration hazard cannot be excluded

Other adverse effects

Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:
http://echa.europa.eu/information-on-chemicals/registered-substances.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
Butan-1-ol (71-36-3)			
Species	Exposure time	Dose	Method

Pimephales promelas (fathead minnow)	96h	LC50: 1376 mg/l	OECD 203
Daphnia magna (Water flea)	48h	EC50: 1328 mg/l	OECD 202
Pseudokirchneriella subcapitata	96h	EC50: 225 mg/l (Growth rate)	OECD 201
Pseudomonas putida	17 h	EC50: 4390 mg/l	DIN 38412, part 8

Long term toxicity				
Butan-1-ol (71-36-3)				
Type	Species	Dose	Method	
Reproductive toxicity	Daphnia magna (Water flea)	NOEC: 4,1 mg/l (21d)	OECD 211	
Reproductive toxicity	Daphnia magna (Water flea)	EC50: 18 mg/l/21d	OECD 211	
Aquatic toxicity	Pseudokirchneriella subcapitata	EC10: 134 mg/l (96 h) NOAEC: 129 mg/l (96 h)	OECD 201 Growth rate	

Terrestrial toxicity				
Butan-1-ol (71-36-3)				
Species	Exposure time	Dose	Type	Method
Lactuca sativa (Lettuce)	3 d	EC50: ~ 390 mg/l	germination	germination inhibition test

12.2. Persistence and degradability

Butan-1-ol, CAS: 71-36-3
Biodegradation
92 % (15 d), Sewage, aerobic, domestic, non-adapted, BOD.

Abiotic Degradation		
Butan-1-ol (71-36-3)		
Type	Result	Method
Hydrolysis	No data available	
Photolysis	Half-life (DT50): 46 - 53,5 h	measured

12.3. Bioaccumulative potential

Butan-1-ol (71-36-3)		
Type	Result	Method
log Pow	1 @ 25 °C	OECD 117
BCF	3,16	calculated

12.4. Mobility in soil

Butan-1-ol (71-36-3)		
Type	Result	Method
Surface tension	69,9 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Adsorption/Desorption	log Koc: 0,54	calculated
Distribution to environmental	Air: 27,07 Soil: 0,04 Water: 72,85	Calculation according Mackay,

compartments	Sediment: 0,04 Suspended sediment: 0 Biota: 0	Level I

12.5. Results of PBT and vPvB assessment

Butan-1-ol, CAS: 71-36-3
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Butan-1-ol, CAS: 71-36-3
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.
Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

ICAO-TI / IATA-DGR

14.1. UN number or ID number	UN 1120
14.2. UN proper shipping name	Butanols
14.3. Transport hazard class(es)	3
14.4. Packing group	III
14.5. Environmental hazards	no
14.6. Special precautions for user	no data available

IMDG

14.1. UN number or ID number	UN 1120
14.2. UN proper shipping name	Butanols
14.3. Transport hazard class(es)	3
14.4. Packing group	III
14.5. Environmental hazards	no
14.6. Special precautions for user	
EmS	F-E, S-D

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Product name	n-Butyl alcohol
Ship type	3
Pollution category	Z

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI

Butan-1-ol, CAS: 71-36-3

Classification	Flam. Liq. 3; H226 Acute Tox. 4*; H302 STOT SE 3; H335 Skin Irrit. 2; H315 Eye Dam. 1; H318 STOT SE 3; H336
Hazard pictograms	GHS02 Flame GHS05 Corrosion GHS07 Exclamation mark
Signal word	Danger
Hazard statements	H226, H302, H335, H315, H318, H336

International Inventories

Butan-1-ol, CAS: 71-36-3

AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2007516 (EU)
ENCS (2)-3049 (JP)
ISHL (2)-3049 (JP)
ISHL 2-(8)-299 (JP)
KECI KE-03867 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

National regulatory information India

Hazardous Chemicals, Schedule 2: Threshold Quantities at an Isolated Storage
not listed

Hazardous Chemicals, Schedule 3: Threshold Quantities in an Industrial Installation
not listed

For details and further information please refer to the original regulation.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 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
A table of terms and abbreviations can be found under the following link:
http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice
For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on OXEA owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet
Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OXEA homepage (www.oxae.com).

Disclaimer
For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OXEA makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet