

SAFETY DATA SHEET



n-Butanol
10420

Version / Revision
Supersedes Version

4
3.00***

Revision Date
Issuing date

26-Jan-2021
26-Jan-2021

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

OQ Chemicals GmbH
Rheinpromenade 4A
D-40789 Monheim
Germany

OQ Chemicals 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@oq.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 671 (UK) available 24/7

SECTION 2: Hazards identification

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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

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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

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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

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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

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consumer care product

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits Egypt

Egypt OELs; Threshold limits of air pollutants in the workplace (Decree No. 338, Annex 8)

| Component | CLV (mg/m ³) | CLV (ppm) | Skin Absorption | Carc. Cat. |
|----------------------------|-----------------------------|--------------|-----------------|------------|
| Butan-1-ol CAS: 71-36-3 | 152 | 50 | Yes | |

Exposure limits Israel

Israel OELs

| Component | TWA (mg/m ³) | TWA (ppm) | STEL (mg/m ³) | STEL (ppm) |
|----------------------------|-----------------------------|--------------|------------------------------|---------------|
| Butan-1-ol CAS: 71-36-3 | | 20 | | |

Exposure limits South Africa

South Africa OELs; Recommended exposure limits

| Component | TWA (mg/m ³) | TWA (ppm) | STEL (mg/m ³) | STEL (ppm) |
|----------------------------|-----------------------------|--------------|------------------------------|---------------|
| Butan-1-ol CAS: 71-36-3 | | | 150 | 150 |
| Component | Skin Absorption | | Sensitizer | |
| Butan-1-ol CAS: 71-36-3 | Yes | | | |

Exposure limits United Arab Emirates

United Arab Emirates OELs ***

| Component | TWA (mg/m ³) | TWA (ppm) | STEL (mg/m ³) | STEL (ppm) |
|----------------------------|-----------------------------|--------------|------------------------------|---------------|
| Butan-1-ol CAS: 71-36-3 | 61 | 20 | | |
| Component | CLV (mg/m ³) | CLV (ppm) | Skin Absorption | Carc. Cat. |
| Butan-1-ol CAS: 71-36-3 | 152 | 50 | Yes | |

Exposure limits Kuwait

No exposure limits established.

Note

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

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Occupational Exposure Controls

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.

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.

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 |

Skin and body protection

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

Respiratory protection

Respirator with filter for organic vapour. Use the indicated respiratory protection if the occupational exposure limit is exceeded and/or in case of product release (dust). Equipment should conform to NIOSH, EN or other applicable national standards.

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

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Appearance liquid
Colour colourless
Odour alcoholic
Odour threshold No data available
pH neutral
Melting point/range < -90 °C (Pour point)
Boiling point/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*** |

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

Relative density

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

Solubility 66 g/l @ 20 °C, in water, OECD 105

log Pow 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

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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

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| 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. Generation, male/female | | | Inhalation |
| 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 |

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| | | | | | |
|--------------------------|------------------------------|------------------------------------|--|---------------------|--------------------------|
| 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 |
|------|---------|------|--------|
|------|---------|------|--------|

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| | | | | |
|-----------------------|---------------------------------|--|----------------------|--|
| 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 compartments | Air: 27,07 Soil: 0,04 Water: 72,85 Sediment: 0,04 Suspended sediment: 0 Biota: 0 | Calculation according Mackay, 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)

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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

ADR/RID

| | |
|------------------------------------|----------|
| 14.1. UN 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 | |
| ADR Tunnel restriction code | (D/E) |
| Classification Code | F1 |
| Hazard Number | 30 |

ADN

ADN: Container and Tanker

| | |
|------------------------------------|----------|
| 14.1. UN 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 | |
| Classification Code | F1 |
| Hazard Number | 30 |

ICAO-TI / IATA-DGR

| | |
|-----------------|---------|
| 14.1. UN number | UN 1120 |
|-----------------|---------|

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| | |
|------------------------------------|-------------------|
| 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 | 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 | F-E, S-D |
| EmS | |
| 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)

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ISHL 2-(8)-299 (JP)
KECI KE-03867 (KR)
INSQ (MX)
PICCS (PH)
TSCA (US)
NZIoC (NZ)
TCSI (TW)

National regulatory information Egypt

Banned Chemicals (Unified List of Hazardous Substances, List A)
not listed

Substances Requiring Permits (Unified List of Hazardous Substances, List B)
not listed

Non-Restricted Substances (Unified List of Hazardous Substances, List C)

| Component | Listed |
|----------------------------|--------|
| Butan-1-ol CAS: 71-36-3 | Yes |

National regulatory information Israel

Harmful Chemicals (Hazardous Substances Law, 5753-1993, Annex 1)
not listed

Toxic Chemicals (Hazardous Substances Law, 5753-1993, Annex 2)
not listed

Hazardous materials requiring annual testing (Labor Inspection Regs., Appendix 1)
not listed

Hazardous Substances Regulations (Classification & Exemptions)
not listed

National regulatory information South Africa

Group 1 Hazardous Substances (G.N.R 452)
not listed

National regulatory information United Arab Emirates

Prohibited and restricted imports (Ministry of Environment and Water)
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.

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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 OQ 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 OQ homepage (www.chemicals.oq.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. OQ 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