BUTAN-2-OL AR MSDS
CAS No: 78-92-2 MSDS

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form: Substance
CAS No: 78-92-2
Product code: 0055B
Chemical structure:

![Chemical structure](image)

Synonyms: sec-Butyl alcohol

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 chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

LOBA CHEMIE PVT.LTD.
107 Wode House Road, Jehangir Villa, Colaba
400005 Mumbai - INDIA
T +91 22 6663 6663 - F +91 22 6663 6699
info@lobachemie.com - www.lobachemie.com

1.4. Emergency telephone number

Emergency number: +91 22 6663 6663 (9:00am - 6:00 pm)

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
- Serious eye damage/eye irritation, Category 2: H319
- Specific target organ toxicity — Single exposure, Category 3: H335
- Respiratory tract irritation: H336
- Specific target organ toxicity — Single exposure, Category 3: H336

Narcosis

Full text of classification categories and H statements: see section 16

www.lobachemie.com 09/04/2015 1/10
Classification according to Directive 67/548/EEC or 1999/45/EC
Xi; R36
Xi; R37
R10
R67
Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects
No additional information available

2.2. Label elements

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

- GHS02
- GHS07

Signal word (CLP): Warning

Hazard statements (CLP):
- H226 - Flammable liquid and vapour
- H319 - Causes serious eye irritation
- H335 - May cause respiratory irritation
- H336 - May cause drowsiness or dizziness

Precautionary statements (CLP):
- P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards
No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name: BUTAN-2-OL AR
CAS No: 78-92-2

Full text of R- and H-phrases: see section 16

3.2. Mixture
Not applicable
SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

First-aid measures after skin contact: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

First-aid measures after eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Rinse mouth out with water. If you feel unwell, seek medical advice.

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

Symptoms/injuries after inhalation: May cause respiratory irritation. May cause drowsiness or dizziness.

Symptoms/injuries after eye contact: Causes serious eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media: dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2).

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Flammable liquid and vapour.

Explosion hazard: May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

No additional information available.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel

Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment: Avoid breathing dust/fume/gas/mist/vapours/spray.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Collect spillage. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed: Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling: No naked lights. No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area.
**Hygiene measures**: Wash ... thoroughly after handling.

**7.2. **Conditions for safe storage, including any incompatibilities

**Technical measures**: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/… equipment.

**Storage conditions**: Keep container tightly closed. Store in original container. Store in a dry place.

**Incompatible materials**: Heat sources.

**7.3. **Specific end use(s)

No additional information available

**SECTION 8: Exposure controls/personal protection**

**8.1. **Control parameters

No additional information available

**8.2. **Exposure controls

<table>
<thead>
<tr>
<th>Protection Type</th>
<th>Equipment Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand protection</td>
<td>protective gloves</td>
</tr>
<tr>
<td>Eye protection</td>
<td>Chemical goggles or safety glasses</td>
</tr>
<tr>
<td>Skin and body protection</td>
<td>Wear suitable protective clothing</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>Where exposure through inhalation may occur from use, respiratory protection equipment is recommended</td>
</tr>
</tbody>
</table>

**SECTION 9: Physical and chemical properties**

**9.1. **Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Liquid</td>
</tr>
<tr>
<td>Molecular mass</td>
<td>74.12 g/mol</td>
</tr>
<tr>
<td>Colour</td>
<td>Clear Colorless.</td>
</tr>
<tr>
<td>Odour</td>
<td>sweet, fruity odor.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>3.2 ppm</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
</tr>
<tr>
<td>Relative evaporation rate (butylacetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>-115 °C</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>99.5 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>24 °C</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>4050 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Flammable</td>
</tr>
<tr>
<td></td>
<td>Flammable liquid and vapour</td>
</tr>
</tbody>
</table>
Vapour pressure: 12 mm Hg at 20°C
Relative vapour density at 20 °C: 2.6
Relative density: No data available
Density: 0.808 g/cm³
Solubility: Water: 12.5 g/100ml @ 20°C
Log Pow: No data available
Viscosity, kinematic: No data available
Viscosity, dynamic: 3.5 cP @ 20 deg C
Explosive properties: No data available
Oxidising properties: No data available
Explosive limits: 0.017 - 0.098 vol %

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions
No additional information available

10.4. Conditions to avoid

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity: Not classified

Skin corrosion/irritation: Not classified
pH: 7

Serious eye damage/irritation: Causes serious eye irritation.
pH: 7

Respiratory or skin sensitisation: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified
Reproductive toxicity: Not classified
Specific target organ toxicity (single exposure): May cause respiratory irritation. May cause drowsiness or dizziness.
Specific target organ toxicity (repeated exposure): Not classified
Aspiration hazard: Not classified

<table>
<thead>
<tr>
<th>BUTAN-2-OL AR (78-92-2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity, kinematic</td>
</tr>
</tbody>
</table>

SECTION 12: Ecological information

12.1. Toxicity
No additional information available

12.2. Persistence and degradability
No additional information available

12.3. Bioaccumulative potential
No additional information available

12.4. Mobility in soil
No additional information available

12.5. Results of PBT and vPvB assessment
No additional information available

12.6. Other adverse effects
No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Product/Packaging disposal recommendations: Dispose of contents/container to ...
Additional information: Handle empty containers with care because residual vapours are flammable.

SECTION 14: Transport information

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

14.1. UN number
UN-No. (ADR): 1120
UN-No. (IMDG): 1120
UN-No. (IATA): 1120
14.2. UN proper shipping name

Proper Shipping Name (ADR): BUTANOLS
Proper Shipping Name (IMDG): BUTANOLS
Proper Shipping Name (IATA): BUTANOLS
Proper Shipping Name (ADN): BUTANOLS
Proper Shipping Name (RID): BUTANOLS

Transport document description (ADR): UN 1120 BUTANOLS, 3, III, (D/E)
Transport document description (IMDG): UN 1120 BUTANOLS, 3, III
Transport document description (IATA): UN 1120 BUTANOLS, 3, III
Transport document description (ADN): UN 1120 BUTANOLS, 3, III
Transport document description (RID): UN 1120 BUTANOLS, 3, III

14.3. Transport hazard class(es)

**ADR**
Transport hazard class(es) (ADR): 3
Danger labels (ADR): 3

**IMDG**
Transport hazard class(es) (IMDG): 3
Danger labels (IMDG): 3

**IATA**
Transport hazard class(es) (IATA): 3
Hazard labels (IATA): 3

**ADN**
Transport hazard class(es) (ADN): 3
Danger labels (ADN): 3

**RID**
Transport hazard class(es) (RID) : 3
Danger labels (RID) : 3

14.4. Packing group

Packing group (ADR) : III
Packing group (IMDG) : III
Packing group (IATA) : III
Packing group (ADN) : III
Packing group (RID) : III

14.5. Environmental hazards

Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport
  Classification code (ADR) : F1
  Limited quantities (ADR) : 5L
  Excepted quantities (ADR) : E1
  Packing instructions (ADR) : P001, IBC03, LP01, R001
  Mixed packing provisions (ADR) : MP19
  Portable tank and bulk container instructions (ADR) : T2
  Portable tank and bulk container special provisions (ADR) : TP1
  Tank code (ADR) : LGBF
  Vehicle for tank carriage : FL
  Transport category (ADR) : 3
  Special provisions for carriage - Packages (ADR) : V12
  Special provisions for carriage - Operation (ADR) : S2
  Hazard identification number (Kemler No.) : 30
  Orange plates : 30

  Tunnel restriction code (ADR) : D/E
  EAC code : •2YE

- Transport by sea
  Special provision (IMDG) : 223
  Limited quantities (IMDG) : 5 L
  Excepted quantities (IMDG) : E1
  Packing instructions (IMDG) : P001, LP01
  IBC packing instructions (IMDG) : IBC03
  Tank instructions (IMDG) : T2
  Tank special provisions (IMDG) : TP1
BUTAN-2-OL AR
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EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : A
MFAG-No : 129

- Air transport
PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y344
PCA limited quantity max net quantity (IATA) : 10L
PCA packing instructions (IATA) : 355
PCA max net quantity (IATA) : 60L
CAO packing instructions (IATA) : 366
CAO max net quantity (IATA) : 220L
Special provision (IATA) : A3
ERG code (IATA) : 3L

- Inland waterway transport
Classification code (ADN) : F1
Limited quantities (ADN) : 5L
Excepted quantities (ADN) : E1
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 0

- Rail transport
Classification code (RID) : F1
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T2
Portable tank and bulk container special provisions (RID) : TP1
Tank codes for RID tanks (RID) : LGBF
Transport category (RID) : 3
Special provisions for carriage – Packages (RID) : W12
Colis express (express parcels) (RID) : CE4
Hazard identification number (RID) : 30

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
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

No REACH Annex XVII restrictions
BUTAN-2-OL AR is not on the REACH Candidate List
BUTAN-2-OL AR is not on the REACH Annex XIV List
15.1.2. National regulations

**Germany**

AwSV/VwVwS Annex reference: Water hazard class (WGK) 1, slightly hazardous to water (Classification according to VwVwS, Annex 2; WGK No 40)


**Denmark**

Class for fire hazard: Class II-1

Store unit: 5 liter

Classification remarks: R10 <H226;H319;H335;H336>; Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation: Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

**SECTION 16: Other information**

Full text of R-, H- and EUH-phrases:

<table>
<thead>
<tr>
<th>R-Phrase</th>
<th>H-Phrase</th>
<th>EUH-Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit. 2</td>
<td>Serious eye damage/eye irritation, Category 2</td>
<td></td>
</tr>
<tr>
<td>Flm. Liq. 3</td>
<td>Flammable liquids, Category 3</td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation</td>
<td></td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>Specific target organ toxicity — Single exposure, Category 3, Narcosis</td>
<td></td>
</tr>
<tr>
<td>H226</td>
<td>Flammable liquid and vapour</td>
<td></td>
</tr>
<tr>
<td>H319</td>
<td>Causes serious eye irritation</td>
<td></td>
</tr>
<tr>
<td>H335</td>
<td>May cause respiratory irritation</td>
<td></td>
</tr>
<tr>
<td>H336</td>
<td>May cause drowsiness or dizziness</td>
<td></td>
</tr>
<tr>
<td>R10</td>
<td>Flammable</td>
<td></td>
</tr>
<tr>
<td>R36</td>
<td>Irritating to eyes</td>
<td></td>
</tr>
<tr>
<td>R37</td>
<td>Irritating to respiratory system</td>
<td></td>
</tr>
<tr>
<td>R67</td>
<td>Vapours may cause drowsiness and dizziness</td>
<td></td>
</tr>
<tr>
<td>Xi</td>
<td>Irritant</td>
<td></td>
</tr>
</tbody>
</table>

*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.*