

# Safety Data Sheet

acc. to OSHA HCS

Printing date 04/07/2020

Reviewed on 04/07/2020

## 1 Identification

- **Product identifier**
- **Trade name:** n-Butyl Alcohol
- **Article number:** 11920, 11921
- **CAS Number:**  
71-36-3
- **EC number:**  
200-751-6
- **Index number:**  
603-004-00-6
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226      Flammable liquid and vapor.

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GHS05 Corrosion

Eye Dam. 1 H318      Causes serious eye damage.

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GHS07

Acute Tox. 4 H302      Harmful if swallowed.

Skin Irrit. 2 H315      Causes skin irritation.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

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- **Label elements**
- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

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Trade name: *n*-Butyl Alcohol

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· **Hazard pictograms**

GHS02   GHS05   GHS07

· **Signal word** *Danger*· **Hazard statements***Flammable liquid and vapor.**Harmful if swallowed.**Causes skin irritation.**Causes serious eye damage.**May cause respiratory irritation. May cause drowsiness or dizziness.*· **Precautionary statements***Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Avoid breathing dust/fume/gas/mist/vapors/spray**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Immediately call a poison center/doctor.**Specific treatment (see on this label).**Rinse mouth.**Take off contaminated clothing and wash it before reuse.**If skin irritation occurs: Get medical advice/attention.**In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Classification system:**· **NFPA ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0*· **HMIS-ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0*

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**Trade name: n-Butyl Alcohol**

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- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
71-36-3 n-Butyl Alcohol
- **Identification number(s)**
- **EC number:** 200-751-6
- **Index number:** 603-004-00-6

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.

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**Trade name: n-Butyl Alcohol**

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- Ensure adequate ventilation.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**
  - PAC-1: 60 ppm
  - PAC-2: 800 ppm
  - PAC-3: 8000\*\* ppm

### 7 Handling and storage

- **Handling:**
  - **Precautions for safe handling** No special precautions are necessary if used correctly.
  - **Information about protection against explosions and fires:**
    - Keep ignition sources away - Do not smoke.
    - Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
  - **Requirements to be met by storerooms and receptacles:** No special requirements.
  - **Information about storage in one common storage facility:** Not required.
  - **Further information about storage conditions:** Keep receptacle tightly sealed.
  - **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

#### 71-36-3 n-Butyl Alcohol

PEL	Long-term value: 300 mg/m <sup>3</sup> , 100 ppm
REL	Ceiling limit value: 150 mg/m <sup>3</sup> , 50 ppm Skin
TLV	Long-term value: 61 mg/m <sup>3</sup> , 20 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.
  - Wash hands before breaks and at the end of work.
  - Avoid contact with the skin.
  - Avoid contact with the eyes and skin.
- **Breathing equipment:**
  - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

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**Trade name: n-Butyl Alcohol**

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· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

<b>Form:</b>	Fluid
<b>Color:</b>	Colorless
<b>Odor:</b>	Alcohol-like
<b>Odor threshold:</b>	Not determined.

· **pH-value:** 7

· **Change in condition**

<b>Melting point/Melting range:</b>	-89 °C (-192.2 °F)
<b>Boiling point/Boiling range:</b>	116-118 °C (240.8-244.4 °F)

· **Flash point:** 35 °C (95 °F)

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 340 °C (644 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

**Lower:** 1.5 Vol %

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**Trade name: n-Butyl Alcohol**

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<b>Upper:</b>	9.4 Vol %
· <b>Vapor pressure at 20 °C (68 °F):</b>	6.7 hPa (5 mm Hg)
· <b>Density at 20 °C (68 °F):</b>	0.81 g/cm <sup>3</sup> (6.75945 lbs/gal)
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with Water at 20 °C (68 °F):</b>	77 g/l
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity:</b>	
<b>Dynamic at 20 °C (68 °F):</b>	2.95 mPas
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety Health Administration)** Substance is not listed.

US

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## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behavior in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*
- **Mobility in soil** *No further relevant information available.*
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (Assessment by list): slightly hazardous for water*  
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **Other adverse effects** *No further relevant information available.*

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*

## 14 Transport information

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>DOT, ADR, IMDG, IATA</b></li> </ul>   | <p style="margin: 0;"><i>UN1120</i></p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>DOT</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p style="margin: 0;"><i>Butanols</i></p> <p style="margin: 0;"><i>1120 BUTANOLS</i></p> <p style="margin: 0;"><i>BUTANOLS</i></p>  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>DOT</b></li> </ul>   | <div style="text-align: center; margin: 10px 0;">  <p style="font-size: small; margin: 0;">Flammable liquid<br/>3</p> </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> </ul>  | <p style="margin: 0;"><i>3 Flammable liquids</i></p>  |

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Trade name: *n-Butyl Alcohol*

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· <b>Label</b>	3
· <b>ADR, IMDG, IATA</b>	
	
· <b>Class</b>	3 Flammable liquids
· <b>Label</b>	3
· <b>Packing group</b>	
· <b>DOT, ADR, IMDG, IATA</b>	III
· <b>Environmental hazards:</b>	Not applicable.
· <b>Special precautions for user</b>	Warning: Flammable liquids
· <b>Hazard identification number (Kemler code):</b>	30
· <b>EMS Number:</b>	3-06
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	
Not applicable.	
· <b>Transport/Additional information:</b>	
· <b>DOT</b>	
· <b>Quantity limitations</b>	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· <b>Hazardous substance:</b>	5000 lbs, 2270 kg
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1120 BUTANOLS, 3, III

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is listed.
- TSCA (Toxic Substances Control Act): ACTIVE
- Hazardous Air Pollutants Substance is not listed.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.

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**Trade name: n-Butyl Alcohol**

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- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency) D**
- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02    GHS05    GHS07

- **Signal word** *Danger*
- **Hazard statements**  
*Flammable liquid and vapor.*  
*Harmful if swallowed.*  
*Causes skin irritation.*  
*Causes serious eye damage.*  
*May cause respiratory irritation. May cause drowsiness or dizziness.*
- **Precautionary statements**  
*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*  
*Ground/bond container and receiving equipment.*  
*Use explosion-proof electrical/ventilating/lighting/equipment.*  
*Use only non-sparking tools.*  
*Take precautionary measures against static discharge.*  
*Avoid breathing dust/fume/gas/mist/vapors/spray*  
*Wash thoroughly after handling.*  
*Do not eat, drink or smoke when using this product.*  
*Use only outdoors or in a well-ventilated area.*  
*Wear protective gloves/protective clothing/eye protection/face protection.*  
*If swallowed: Call a poison center/doctor if you feel unwell.*  
*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*  
*IF INHALED: Remove person to fresh air and keep comfortable for breathing.*  
*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*  
*Continue rinsing.*  
*Immediately call a poison center/doctor.*  
*Specific treatment (see on this label).*  
*Rinse mouth.*  
*Take off contaminated clothing and wash it before reuse.*  
*If skin irritation occurs: Get medical advice/attention.*  
*In case of fire: Use for extinction: CO2, powder or water spray.*  
*Store in a well-ventilated place. Keep container tightly closed.*  
*Store in a well-ventilated place. Keep cool.*  
*Store locked up.*  
*Dispose of contents/container in accordance with local/regional/national/international regulations.*

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**Trade name: n-Butyl Alcohol**

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· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Date of preparation / last revision** 04/07/2020 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety **Health**

**TLV: Threshold Limit Value**

**PEL: Permissible Exposure Limit**

**REL: Recommended Exposure Limit**

**Flam. Liq. 3: Flammable liquids – Category 3**

**Acute Tox. 4: Acute toxicity – Category 4**

**Skin Irrit. 2: Skin corrosion/irritation – Category 2**

**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**

**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**

# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

### 1 Identification

- **Product identifier**
- **Trade name:** n-Butyl Alcohol
- **Article number:** 11920, 11921
- **CAS Number:**  
71-36-3
- **EC number:**  
200-751-6
- **Index number:**  
603-004-00-6
- **Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: [info@emsdiasum.com](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://www.emsdiasum.com)
- ProSciTech Pty Ltd  
11 Carlton Street, Kirwan QLD 4817 Australia  
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)  
Website: [ems.proscitech.com](http://ems.proscitech.com)
- Emgrid Australia Pty. Ltd.  
P.O. Box 118  
The Patch VIC 3792  
Australia  
Tel: 03 9752 1785  
Fax: 03 9752 1784  
Website: [www.emgrid.com.au](http://www.emgrid.com.au)
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS02 flame

Flam. Liq. 3 H226

Flammable liquid and vapour.

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-AU-

# Safety Data Sheet

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Revision: 07.04.2020

**Trade name: n-Butyl Alcohol**

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GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **Label elements**

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS02



GHS05



GHS07

· **Signal word** *Danger*

· **Hazard statements**

*Flammable liquid and vapour.*

*Harmful if swallowed.*

*Causes skin irritation.*

*Causes serious eye damage.*

*May cause respiratory irritation. May cause drowsiness or dizziness.*

· **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. No smoking.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Avoid breathing dust/fume/gas/mist/vapours/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

*Immediately call a POISON CENTER/doctor.*

*Specific treatment (see on this label).*

*Rinse mouth.*

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*Take off contaminated clothing and wash it before reuse.*

*If skin irritation occurs: Get medical advice/attention.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition and Information on Ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**  
71-36-3 n-Butyl Alcohol
- **Identification number(s)**
- **EC number:** 200-751-6
- **Index number:** 603-004-00-6

### 4 First Aid Measures

- **Description of first aid measures**
- **General information:**  
*Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*
- **After inhalation:** *In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact:** *Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing:** *Call for a doctor immediately.*
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
- **Indication of any immediate medical attention and special treatment needed**  
*No further relevant information available.*

### 5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
*CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*
- **For safety reasons unsuitable extinguishing agents:** *Water with full jet*
- **Special hazards arising from the substance or mixture** *No further relevant information available.*
- **Advice for firefighters**
- **Protective equipment:** *No special measures required.*

AU

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# Safety Data Sheet

## according to WHS Regulations

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Trade name: *n-Butyl Alcohol*

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### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and Storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls and personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

71-36-3 *n-Butyl Alcohol*

WES	Peak limitation: 152 mg/m <sup>3</sup> , 50 ppm
Sk	

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the skin.  
Avoid contact with the eyes and skin.

(Contd. on page 5)

AU

# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n*-Butyl Alcohol

(Contd. of page 4)

- **Respiratory protection:**  
*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

- **Protection of hands:**



Protective gloves

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

- **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.*

- **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

- **Eye protection:**



Tightly sealed goggles

## 9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

<b>Form:</b>	Fluid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Alcohol-like
<b>Odour threshold:</b>	Not determined.

- **pH-value:** 7

- **Change in condition**

<b>Melting point/freezing point:</b>	-89 °C
<b>Initial boiling point and boiling range:</b>	116-118 °C

- **Flash point:** 35 °C

- **Flammability (solid, gas):** Not applicable.

- **Ignition temperature:** 340 °C

- **Decomposition temperature:** Not determined.

- **Auto-ignition temperature:** Not determined.

(Contd. on page 6)

# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n-Butyl Alcohol*

(Contd. of page 5)

· <b>Explosive properties:</b>	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· <b>Explosion limits:</b>	
Lower:	1.5 Vol %
Upper:	9.4 Vol %
· <b>Vapour pressure at 20 °C:</b>	6.7 hPa
· <b>Density at 20 °C:</b>	0.81 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapour density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.
· <b>Solubility in / Miscibility with water at 20 °C:</b>	77 g/l
· <b>Partition coefficient: n-octanol/water:</b>	Not determined.
· <b>Viscosity:</b>	
Dynamic at 20 °C:	2.95 mPas
Kinematic:	Not determined.
· <b>Other information</b>	No further relevant information available.

### 10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

· **LD/LC50 values relevant for classification:**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** No sensitising effects known.

AU

(Contd. on page 7)



# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n-Butyl Alcohol*

(Contd. of page 6)


### 12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** *No further relevant information available.*
- **Persistence and degradability** *No further relevant information available.*
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** *No further relevant information available.*
- **Mobility in soil** *No further relevant information available.*
- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*
- **Other adverse effects** *No further relevant information available.*

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**  
*Must not be disposed together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packaging:**
- **Recommendation:** *Disposal must be made according to official regulations.*

### 14 Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>                                | <p><i>UN1120</i></p>   |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· <b>ADG</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | <p><i>1120 BUTANOLS<br/>BUTANOLS</i></p>   |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>               | <div style="text-align: center;">  </div> |
| <ul style="list-style-type: none"> <li>· <b>Class</b></li> <li>· <b>Label</b></li> </ul>  | <p><i>3 Flammable liquids.<br/>3</i></p>   |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· <b>ADG, IMDG, IATA</b></li> </ul>                            | <p><i>III</i></p>  |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards:</b></li> </ul>   | <p><i>Not applicable.</i></p>  |

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# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n-Butyl Alcohol*

(Contd. of page 7)

· <b>Special precautions for user</b>	Warning: <i>Flammable liquids.</i>
· <b>Hazard identification number (Kemler code):</b>	30
· <b>EMS Number:</b>	3-06
· <b>Stowage Category</b>	A
· <b>Transport in bulk according to Annex II of Marpol and the IBC Code</b>	Not applicable.
· <b>Transport/Additional information:</b>	
· <b>ADG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· <b>Transport category</b>	3
· <b>Tunnel restriction code</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· <b>UN "Model Regulation":</b>	UN 1120 BUTANOLS, 3, III

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Australian Inventory of Chemical Substances** Substance is listed.
- **Standard for the Uniform Scheduling of Medicines and Poisons S5, S6**
- **Australia: Priority Existing Chemicals** Substance is not listed.
- **GHS label elements**  
The substance is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



GHS02   GHS05   GHS07

- **Signal word** *Danger*
- **Hazard statements**  
*Flammable liquid and vapour.*  
*Harmful if swallowed.*  
*Causes skin irritation.*  
*Causes serious eye damage.*  
*May cause respiratory irritation. May cause drowsiness or dizziness.*
- **Precautionary statements**  
*Keep away from heat/sparks/open flames/hot surfaces. No smoking.*  
*Ground/bond container and receiving equipment.*

(Contd. on page 9)

# Safety Data Sheet

## according to WHS Regulations

Printing date 07.04.2020

Revision: 07.04.2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 8)

*Use explosion-proof electrical/ventilating/lighting equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Avoid breathing dust/fume/gas/mist/vapours/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Use only outdoors or in a well-ventilated area.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*

*IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.*

*IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*

*Immediately call a POISON CENTER/doctor.*

*Specific treatment (see on this label).*

*Rinse mouth.*

*Take off contaminated clothing and wash it before reuse.*

*If skin irritation occurs: Get medical advice/attention.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep container tightly closed.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I Substance is not listed.**

· **Seveso category P5c FLAMMABLE LIQUIDS**

· **Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t**

· **Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t**

· **Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

## 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Abbreviations and acronyms:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Flam. Liq. 3: Flammable liquids – Category 3*

*Acute Tox. 4: Acute toxicity - oral – Category 4*

*Skin Irrit. 2: Skin corrosion/irritation – Category 2*

*Eye Dam. 1: Serious eye damage/eye irritation – Category 1*

*STOT SE 3: Specific target organ toxicity (single exposure) – Category 3*

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

### 1 Identification

- **Product identifier**
- **Trade name:** n-Butyl Alcohol
- **Article number:** 11920, 11921
- **CAS Number:**  
71-36-3
- **EC number:**  
200-751-6
- **Index number:**  
603-004-00-6
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 Hazard identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 3

H226

Flammable liquid and vapour.



GHS05 Corrosion

Serious Eye Damage - Category 1

H318

Causes serious eye damage.



GHS07

Acute Toxicity (Oral) - Category 4

H302

Harmful if swallowed.

Skin Irritation - Category 2

H315

Causes skin irritation.

Specific Target Organ Toxicity - Single Exposure -  
Category 3

H335-H336

May cause respiratory irritation. May  
cause drowsiness or dizziness.

- **Label elements**
- **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

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# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

Trade name: *n*-Butyl Alcohol

(Contd. of page 1)

· **Hazard pictograms**

GHS02   GHS05   GHS07

· **Signal word** *Danger*· **Hazard statements***Flammable liquid and vapour.**Harmful if swallowed.**Causes skin irritation.**Causes serious eye damage.**May cause respiratory irritation. May cause drowsiness or dizziness.*· **Precautionary statements***Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Ground and bond container and receiving equipment.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Use non-sparking tools.**Take actions to prevent static discharges.**Avoid breathing dust/fume/gas/mist/vapours/spray.**Wash thoroughly after handling.**Do not eat, drink or smoke when using this product.**Use only outdoors or in a well-ventilated area.**Wear protective gloves/protective clothing/eye protection/face protection.**If swallowed: Call a poison center/doctor if you feel unwell.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**Immediately call a poison center/doctor.**Specific treatment (see on this label).**Rinse mouth.**Take off contaminated clothing and wash it before reuse.**If skin irritation occurs: Get medical advice/attention.**In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Classification system:**· **NFPA ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0*· **HMIS-ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0*

CA

(Contd. on page 3)

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 2)

### 3 Composition/Information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
71-36-3 n-Butyl Alcohol
- **Identification number(s)**
- **EC number:** 200-751-6
- **Index number:** 603-004-00-6

### 4 First-aid measures

- **Description of first aid measures**
- **General information:**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.

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CA

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 3)

See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/ Personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

#### 71-36-3 n-Butyl Alcohol

EL	TWA: 15 ppm Ceiling: 30 ppm
EV	TWA: 20 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the skin.  
Avoid contact with the eyes and skin.
- **Breathing equipment:**  
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

(Contd. on page 5)

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 4)

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.*

· **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

· **Eye protection:**



Tightly sealed goggles

### 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

· <b>Form:</b>	Fluid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Alcohol-like
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** 7

· **Change in condition**

· <b>Melting point/Melting range:</b>	-89 °C
· <b>Boiling point/Boiling range:</b>	116-118 °C

· **Flash point:** 35 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 340 °C

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

· <b>Lower:</b>	1.5 Vol %
· <b>Upper:</b>	9.4 Vol %

· **Vapor pressure at 20 °C:** 6.7 hPa

· <b>Density at 20 °C:</b>	0.81 g/cm <sup>3</sup>
· <b>Relative density</b>	Not determined.
· <b>Vapor density</b>	Not determined.
· <b>Evaporation rate</b>	Not determined.

(Contd. on page 6)

CA



# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

Trade name: *n*-Butyl Alcohol

(Contd. of page 5)

- |   |                 |
|---|-----------------|
| <b>· Solubility in / Miscibility with</b>                             |                 |
| <b>Water at 20 °C:</b>  | 77 g/l          |
| <b>· Partition coefficient (n-octanol/water):</b> Not determined.     |                 |
| <b>· Viscosity:</b>   |                 |
| <b>Dynamic at 20 °C:</b>  | 2.95 mPas       |
| <b>Kinematic:</b>   | Not determined. |
| <b>· Other information</b> No further relevant information available. |                 |

### 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.

### 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

(Contd. on page 7)

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

**Trade name: n-Butyl Alcohol**



(Contd. of page 6)

- **Additional ecological information:**
- **General notes:**  
*Water hazard class 1 (Assessment by list): slightly hazardous for water*  
*Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*

### 14 Transport information

- |   |                     |
|---|---------------------|
| <b>· UN-Number</b>  | UN1120              |
| <b>· DOT/TDG, ADR, IMDG, IATA</b>   |                     |
| <b>· UN proper shipping name</b>  | Butanols            |
| <b>· DOT/TDG</b>  | 1120 BUTANOLS       |
| <b>· ADR</b>  | BUTANOLS            |
| <b>· IMDG, IATA</b>   |                     |
| <b>· Transport hazard class(es)</b>   |                     |
| <b>· DOT/TDG (Transport dangerous goods):</b>                                       |                     |
|  |                     |
| <b>· Class</b>  | 3 Flammable liquids |
| <b>· Label</b>  | 3                   |
| <hr style="border-top: 1px dashed black;"/>   |                     |
| <b>· ADR, IMDG, IATA</b>  |                     |
|  |                     |
| <b>· Class</b>  | 3 Flammable liquids |
| <b>· Label</b>  | 3                   |
| <b>· Packing group</b>  |                     |
| <b>· DOT/TDG, ADR, IMDG, IATA</b>   | III                 |

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# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

Trade name: *n-Butyl Alcohol*

(Contd. of page 7)

· <b>Environmental hazards:</b>	<i>Not applicable.</i>
· <b>Special precautions for user</b>	<i>Warning: Flammable liquids</i>
· <b>Hazard identification number (Kemler code):</b>	<i>30</i>
· <b>EMS Number:</b>	<i>3-06</i>
· <b>Stowage Category</b>	<i>A</i>
· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	<i>Not applicable.</i>
· <b>Transport/Additional information:</b>	
· <b>DOT/TDG</b>	
· <b>Quantity limitations</b>	<i>On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L</i>
· <b>Hazardous substance:</b>	<i>5000 lbs, 2270 kg</i>
· <b>ADR</b>	
· <b>Excepted quantities (EQ)</b>	<i>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i>
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	<i>5L</i>
· <b>Excepted quantities (EQ)</b>	<i>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i>
· <b>UN "Model Regulation":</b>	<i>UN 1120 BUTANOLS, 3, III</i>

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Sara**
- **Section 355 (extremely hazardous substances):** *Substance is not listed.*
- **Section 313 (Specific toxic chemical listings):** *Substance is listed.*
- **TSCA (Toxic Substances Control Act):** *ACTIVE*
- **Canadian substance listings:**
- **Canadian Domestic Substances List (DSL)** *Substance is listed.*
- **Canadian Ingredient Disclosure list (limit 0.1%)** *Substance is not listed.*
- **Canadian Ingredient Disclosure list (limit 1%)** *Substance is listed.*
- **GHS label elements**
- *The substance is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**



GHS02   GHS05   GHS07

- **Signal word** *Danger*

(Contd. on page 9)

CA

# Safety Data Sheet

## according to HPR, Schedule 1

Printing date 04/07/2020

Reviewed on 04/07/2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 8)

· **Hazard statements**

- Flammable liquid and vapour.*
- Harmful if swallowed.*
- Causes skin irritation.*
- Causes serious eye damage.*
- May cause respiratory irritation. May cause drowsiness or dizziness.*

· **Precautionary statements**

- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.*
  - Ground and bond container and receiving equipment.*
  - Use explosion-proof [electrical/ventilating/lighting] equipment.*
  - Use non-sparking tools.*
  - Take actions to prevent static discharges.*
  - Avoid breathing dust/fume/gas/mist/vapours/spray.*
  - Wash thoroughly after handling.*
  - Do not eat, drink or smoke when using this product.*
  - Use only outdoors or in a well-ventilated area.*
  - Wear protective gloves/protective clothing/eye protection/face protection.*
  - If swallowed: Call a poison center/doctor if you feel unwell.*
  - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
  - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
  - Immediately call a poison center/doctor.*
  - Specific treatment (see on this label).*
  - Rinse mouth.*
  - Take off contaminated clothing and wash it before reuse.*
  - If skin irritation occurs: Get medical advice/attention.*
  - In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*
  - Store in a well-ventilated place. Keep container tightly closed.*
  - Store in a well-ventilated place. Keep cool.*
  - Store locked up.*
  - Dispose of contents/container in accordance with local/regional/national/international regulations.*
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Date of the latest revision of the safety data sheet** 04/07/2020 / -

· **Abbreviations and acronyms:**

- IMDG: International Maritime Code for Dangerous Goods*
- DOT: US Department of Transportation*
- IATA: International Air Transport Association*
- EINECS: European Inventory of Existing Commercial Chemical Substances*
- CAS: Chemical Abstracts Service (division of the American Chemical Society)*
- NFPA: National Fire Protection Association (USA)*
- HMIS: Hazardous Materials Identification System (USA)*
- LC50: Lethal concentration, 50 percent*
- LD50: Lethal dose, 50 percent*
- PBT: Persistent, Bioaccumulative and Toxic*
- vPvB: very Persistent and very Bioaccumulative*

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

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

- **1.1 Product identifier**
- **Trade name:** n-Butyl Alcohol
- **Article number:** 11920, 11921
- **CAS Number:**  
71-36-3
- **EC number:**  
200-751-6
- **Index number:**  
603-004-00-6
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226      Flammable liquid and vapour.



GHS05 corrosion

Eye Dam. 1 H318      Causes serious eye damage.



GHS07

Acute Tox. 4 H302      Harmful if swallowed.

Skin Irrit. 2 H315      Causes skin irritation.

STOT SE 3 H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.

(Contd. on page 2)

# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 1)

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



GHS02    GHS05    GHS07

· **Signal word** *Danger*

· **Hazard statements**

H226      *Flammable liquid and vapour.*

H302      *Harmful if swallowed.*

H315      *Causes skin irritation.*

H318      *Causes serious eye damage.*

H335-H336 *May cause respiratory irritation. May cause drowsiness or dizziness.*

· **Precautionary statements**

P303+P361+P353 *IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].*

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.*

P321      *Specific treatment (see on this label).*

P330      *Rinse mouth.*

P362+P364 *Take off contaminated clothing and wash it before reuse.*

P405      *Store locked up.*

P501      *Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **2.3 Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

### SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**

· **CAS No. Description**

71-36-3 n-Butyl Alcohol

· **Identification number(s)**

· **EC number:** 200-751-6

· **Index number:** 603-004-00-6

### SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

(Contd. on page 3)

# Safety data sheet

## according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 2)

- **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

### SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.  
Ensure adequate ventilation.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

GB

(Contd. on page 4)

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n*-Butyl Alcohol

(Contd. of page 3)

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

### · 8.1 Control parameters

· **Ingredients with limit values that require monitoring at the workplace:**

#### 71-36-3 *n*-Butyl Alcohol

WEL	Short-term value: 154 mg/m <sup>3</sup> , 50 ppm
	Sk

· **Additional information:** The lists valid during the making were used as basis.

### · 8.2 Exposure controls

· **Personal protective equipment:**

· **General protective and hygienic measures:**

*Keep away from foodstuffs, beverages and feed.*

*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the skin.*

*Avoid contact with the eyes and skin.*

· **Respiratory protection:**

*In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.*

· **Protection of hands:**



*Protective gloves*

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.*

*Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.*

*Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

· **Material of gloves**

*The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.*

· **Penetration time of glove material**

*The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.*

· **Eye protection:**



*Tightly sealed goggles*

GB

(Contd. on page 5)



# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n*-Butyl Alcohol

(Contd. of page 4)

## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

Form:	Fluid
Colour:	Colourless
Odour:	Alcohol-like
Odour threshold:	Not determined.

· pH-value: 7

#### · Change in condition

Melting point/freezing point:	-89 °C
Initial boiling point and boiling range:	116-118 °C

· Flash point: 35 °C

· Flammability (solid, gas): Not applicable.

· Ignition temperature: 340 °C

· Decomposition temperature: Not determined.

· Auto-ignition temperature: Not determined.

· Explosive properties: Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

#### · Explosion limits:

Lower:	1.5 Vol %
Upper:	9.4 Vol %

· Vapour pressure at 20 °C: 6.7 hPa

Density at 20 °C:	0.81 g/cm <sup>3</sup>
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

· Solubility in / Miscibility with water at 20 °C: 77 g/l

· Partition coefficient: *n*-octanol/water: Not determined.

#### · Viscosity:

Dynamic at 20 °C:	2.95 mPas
Kinematic:	Not determined.

· 9.2 Other information: No further relevant information available.

## SECTION 10: Stability and reactivity

· 10.1 Reactivity: No further relevant information available.

· 10.2 Chemical stability

· Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

· 10.3 Possibility of hazardous reactions: No dangerous reactions known.

· 10.4 Conditions to avoid: No further relevant information available.

(Contd. on page 6)

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

Trade name: *n-Butyl Alcohol*

(Contd. of page 5)

- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## SECTION 11: Toxicological information

### · 11.1 Information on toxicological effects

- **Acute toxicity**  
Harmful if swallowed.

#### · LD/LC50 values relevant for classification:

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3,400 mg/kg (rabbit)
Inhalative	LC50/4 h	8,000 mg/l (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation**  
Causes skin irritation.
- **Serious eye damage/irritation**  
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**  
May cause respiratory irritation. May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

GB

(Contd. on page 7)

# Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020


Trade name: *n-Butyl Alcohol*

(Contd. of page 6)

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN-Number</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | <p style="text-align: right;">UN1120</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.2 UN proper shipping name</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>  | <p style="text-align: right;">1120 BUTANOLS<br/>BUTANOLS</p>   |
| <ul style="list-style-type: none"> <li>· <b>14.3 Transport hazard class(es)</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>  | <div style="text-align: center;">  </div> <p style="text-align: right;">3 Flammable liquids.<br/>3</p> |
| <ul style="list-style-type: none"> <li>· <b>14.4 Packing group</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | <p style="text-align: right;">III</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.5 Environmental hazards:</b></li> </ul>  | <p style="text-align: right;">Not applicable.</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.6 Special precautions for user</b></li> <li>· <b>Hazard identification number (Kemler code):</b></li> <li>· <b>EMS Number:</b></li> <li>· <b>Stowage Category</b></li> </ul> | <p style="text-align: right;">Warning: Flammable liquids.<br/>30<br/>3-06<br/>A</p>  |
| <ul style="list-style-type: none"> <li>· <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b></li> </ul>  | <p style="text-align: right;">Not applicable.</p>  |
| <ul style="list-style-type: none"> <li>· <b>Transport/Additional information:</b></li> </ul>  |  |
| <ul style="list-style-type: none"> <li>· <b>ADR</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul>   | <p style="text-align: right;">5L<br/>Code: E1<br/>Maximum net quantity per inner packaging: 30 ml<br/>Maximum net quantity per outer packaging: 1000 ml</p>                              |
| <ul style="list-style-type: none"> <li>· <b>Transport category</b></li> <li>· <b>Tunnel restriction code</b></li> </ul>   | <p style="text-align: right;">3<br/>D/E</p>  |

(Contd. on page 8)

GB

**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 07.04.2020

Revision: 07.04.2020

**Trade name: n-Butyl Alcohol**

(Contd. of page 7)

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>· <b>IMDG</b></li> <li>· <b>Limited quantities (LQ)</b></li> <li>· <b>Excepted quantities (EQ)</b></li> </ul> | <p>5L<br/>Code: E1<br/>Maximum net quantity per inner packaging: 30 ml<br/>Maximum net quantity per outer packaging: 1000 ml</p> |
| <ul style="list-style-type: none"> <li>· <b>UN "Model Regulation":</b></li> </ul>  | <p>UN 1120 BUTANOLS, 3, III</p>  |

### SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I Substance is not listed.**
- **Seveso category P5c FLAMMABLE LIQUIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t**
- **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40**
- **15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

### SECTION 16: Other information

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
 IMDG: International Maritime Code for Dangerous Goods  
 IATA: International Air Transport Association  
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
 EINECS: European Inventory of Existing Commercial Chemical Substances  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 PBT: Persistent, Bioaccumulative and Toxic  
 vPvB: very Persistent and very Bioaccumulative  
 Flam. Liq. 3: Flammable liquids – Category 3  
 Acute Tox. 4: Acute toxicity - oral – Category 4  
 Skin Irrit. 2: Skin corrosion/irritation – Category 2  
 Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

GB

# Veiligheidsinformatieblad

volgens 1907/2006/EG, Artikel 31

datum van de druk: 07.04.2020

Herziening van: 07.04.2020

## RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

### · 1.1 Productidentificatie

· Handelsnaam: butaan-1-ol

· Artikelnummer: 11920, 11921

· CAS-nummer:

71-36-3

· EC-nummer:

200-751-6

· Catalogusnummer:

603-004-00-6

· 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

Geen verdere relevante informatie verkrijgbaar.

· Toepassing van de stof / van de bereiding *Laboratoriumchemicaliën*

· 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

· Fabrikant/leverancier:

*Electron Microscopy Sciences*

*1560 Industry Road*

*USA-Hatfield, PA 19440*

*Tel: 215-412-8400 Fax: 215-412-8450*

*email: info@emsdiasum.com*

*www.emsdiasum.com*

*Aurion*

*Binnenhaven 5*

*6709 PD Wageningen*

*The Netherlands*

*Tel: 31 317 415094*

*Fax: 31 317 415955*

*email: info@aurion.nl*

· Inlichtingengevende sector: *Product safety department*

· 1.4 Telefoonnummer voor noodgevallen:

*ChemTrec 1-800-424-9300 Contract CCN7661*

*1-703-527-3887*

## RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· Indeling overeenkomstig Verordening (EG) nr. 1272/2008



GHS02 vlam

*Flam. Liq. 3 H226*

*Ontvlambare vloeistof en damp.*



GHS05 corrosie

*Eye Dam. 1 H318*

*Veroorzaakt ernstig oogletsel.*

(Vervolg op blz. 2)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 07.04.2020

Herziening van: 07.04.2020

**Handelsnaam: butaan-1-ol**

(Vervolg van blz. 1)



GHS07

Acute Tox. 4 H302      Schadelijk bij inslikken.  
 Skin Irrit. 2 H315      Veroorzaakt huidirritatie.  
 STOT SE 3 H335-H336      Kan irritatie van de luchtwegen veroorzaken. Kan slaperigheid of duizeligheid veroorzaken.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**  
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS02    GHS05    GHS07

- **Signaalwoord Gevaar**
- **Gevarenaanduidingen**
  - H226      Ontvlambare vloeistof en damp.
  - H302      Schadelijk bij inslikken.
  - H315      Veroorzaakt huidirritatie.
  - H318      Veroorzaakt ernstig oogletsel.
  - H335-H336      Kan irritatie van de luchtwegen veroorzaken. Kan slaperigheid of duizeligheid veroorzaken.
- **Veiligheidsaanbevelingen**
  - P303+P361+P353 **BIJ CONTACT MET DE HUID (of het haar):** verontreinigde kleding onmiddellijk uittrekken. Huid met water afspoelen [of afdouchen].
  - P305+P351+P338 **BIJ CONTACT MET DE OGEN:** voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.
  - P310      Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.
  - P321      Specifieke behandeling vereist (zie op dit etiket).
  - P330      De mond spoelen.
  - P362+P364      Verontreinigde kleding uittrekken en wassen alvorens deze opnieuw te gebruiken.
  - P405      Achter slot bewaren.
  - P501      De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.
- **2.3 Andere gevaren**
- **Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.

### RUBRIEK 3: Samenstelling en informatie over de bestanddelen

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**  
71-36-3 butaan-1-ol
- **Identificatienummer(s)**
- **EC-nummer:** 200-751-6

(Vervolg op blz. 3)

# Veiligheidsinformatieblad

## volgens 1907/2006/EG, Artikel 31

datum van de druk: 07.04.2020

Herziening van: 07.04.2020

**Handelsnaam: butaan-1-ol**· **Catalogusnummer:** 603-004-00-6

(Vervolg van blz. 2)

### RUBRIEK 4: Eerstehulpmaatregelen

- **4.1 Beschrijving van de eerstehulpmaatregelen**
- **Algemene informatie:**  
Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.
- **Na het inademen:** Bij bewusteloosheid ligging en vervoer in stabiele zijligging.
- **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.
- **Na oogcontact:**  
Ogen met open ooglid een aantal minuten onder stromend water afspoelen en dokter raadplegen.
- **Na inslikken:** Onmiddellijk arts raadplegen.
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten**  
Geen verdere relevante informatie verkrijgbaar.
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**  
Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**  
CO<sub>2</sub>, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **Blusmiddelen die uit veiligheidsoogpunt niet geschikt zijn:** Krachtige waterstraal
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**  
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweertieners**
- **Speciale beschermende kleding:** Geen bijzondere maatregelen nodig.

### RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures**  
Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- **6.2 Milieuvoorzorgsmaatregelen:**  
Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.
- **6.3 Insluitings- en reinigingsmethoden en -materiaal:**  
Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.  
Besmet materiaal zoals afval volgens punt 13 verwijderen.  
Voor voldoende ventilatie zorgen.
- **6.4 Verwijzing naar andere rubrieken**  
Informatie inzake veilig gebruik - zie hoofdstuk 7.  
Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.  
Informatie inzake berging - zie hoofdstuk 13.

-NL-

(Vervolg op blz. 4)

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### RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**  
Bij een deskundig gebruik zijn geen bijzondere maatregelen vereist.
- **Informatie m.b.t. brand- en ontploffingsgevaar:**  
Onststekingsbronnen op afstand houden - niet roken.  
Maatregelen treffen tegen ontlading van statische elektriciteit.
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** Geen bijzondere eisen.
- **Informatie m.b.t. gezamenlijke opslag:** Niet noodzakelijk.
- **Verdere inlichtingen over eisen m.b.t. de opslag:** Tanks ondoordringbaar gesloten houden.
- **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

- **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.
- **8.1 Controleparameters**
- **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:** Vervalt.
- **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.
- **8.2 Maatregelen ter beheersing van blootstelling**
- **Persoonlijke beschermingsvoorzieningen:**
- **Algemene beschermings- en gezondheidsmaatregelen:**  
Verwijderd houden van eet- en drinkwaren.  
Verontreinigde kleding onmiddellijk uittrekken.  
Vóór de pauze en aan het einde van werktijd handen wassen.  
Aanraking met de huid vermijden.  
Aanraking met de ogen en de huid vermijden.
- **Ademhalingsbescherming:**  
Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingstoestel gebruiken.
- **Handbescherming:**



Veiligheidshandschoenen

- Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.  
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliënmengsel afgegeven worden.  
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.
- **Handschoenmateriaal**  
De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant.
  - **Doordringingstijd van het handschoenmateriaal**  
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

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**· Oogbescherming:**

Nauw aansluitende veiligheidsbril

## RUBRIEK 9: Fysische en chemische eigenschappen

**· 9.1 Informatie over fysische en chemische basiseigenschappen****· Algemene gegevens****· Voorkomen:**

<b>Vorm:</b>	Vloeibaar
<b>Kleur:</b>	Kleurloos
<b>Geur:</b>	Alcoholachtig
<b>Geurdrempelwaarde:</b>	Niet bepaald.

**· pH-waarde:** 7**· Toestandsverandering**

<b>Smelt-/vriespunt:</b>	-89 °C
<b>Beginkookpunt en kooktraject:</b>	116-118 °C

**· Vlampunt:** 35 °C**· Ontvlambaarheid (vast, gas):** Niet bruikbaar.**· Ontstekingstemperatuur:** 340 °C**· Ontledingstemperatuur:** Niet bepaald.**· Zelfontbrandingstemperatuur:** Niet bepaald.**· Ontploffingseigenschappen:** Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.**· Ontploffingsgrenzen:**

<b>Onderste:</b>	1,5 Vol %
<b>Bovenste:</b>	9,4 Vol %

**· Dampspanning bij 20 °C:** 6,7 hPa

<b>· Dichtheid bij 20 °C:</b>	0,81 g/cm <sup>3</sup>
<b>· Relatieve dichtheid</b>	Niet bepaald.
<b>· Dampdichtheid</b>	Niet bepaald.
<b>· Verdampingsnelheid</b>	Niet bepaald.

**· Oplosbaarheid in/mengbaarheid met****Water bij 20 °C:** 77 g/l**· Verdelingscoëfficiënt: n-octanol/water:** Niet bepaald.**· Viscositeit**

<b>Dynamisch bij 20 °C:</b>	2,95 mPas
<b>Kinematisch:</b>	Niet bepaald.

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- **9.2 Overige informatie** *Geen verdere relevante informatie verkrijgbaar.*

### RUBRIEK 10: Stabiliteit en reactiviteit

- **10.1 Reactiviteit** *Geen verdere relevante informatie verkrijgbaar.*
- **10.2 Chemische stabiliteit**
- **Thermische afbraak / te vermijden omstandigheden:** *Geen afbraak bij gebruik volgens voorschrift.*
- **10.3 Mogelijke gevaarlijke reacties** *Geen gevaarlijke reacties bekend.*
- **10.4 Te vermijden omstandigheden** *Geen verdere relevante informatie verkrijgbaar.*
- **10.5 Chemisch op elkaar inwerkende materialen:** *Geen verdere relevante informatie verkrijgbaar.*
- **10.6 Gevaarlijke ontledingsproducten:** *Geen gevaarlijke ontbindingsproducten bekend.*

### RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**  
*Schadelijk bij inslikken.*

- **Indelingsrelevantie LD/LC50-waarden:**

Oraal	LD50	790 mg/kg (rat)
Dermaal	LD50	3.400 mg/kg (rabbit)
Inhalatief	LC50/4 h	8.000 mg/l (rat)

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie**  
*Veroorzaakt huidirritatie.*
- **Ernstig oogletsel/oogirritatie**  
*Veroorzaakt ernstig oogletsel.*
- **Sensibilisatie van de luchtwegen/de huid**  
*Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen**  
*Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **Kankerverwekkendheid** *Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **Giftigheid voor de voortplanting**  
*Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **STOT bij eenmalige blootstelling**  
*Kan irritatie van de luchtwegen veroorzaken. Kan slaperigheid of duizeligheid veroorzaken.*
- **STOT bij herhaalde blootstelling**  
*Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*
- **Gevaar bij inademing** *Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.*

### RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** *Geen verdere relevante informatie verkrijgbaar.*
- **12.2 Persistentie en afbreekbaarheid** *Geen verdere relevante informatie verkrijgbaar.*
- **12.3 Bioaccumulatie** *Geen verdere relevante informatie verkrijgbaar.*

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- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**  
*Waterbezwaarlijkheid (NL): B(4) Weinig schadelijk voor in water levende organismen*  
*Gevaar voor water klasse 1 (D) (Lijstclassificatie): gevaar voor water klein*  
*Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.*
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

### RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.

### RUBRIEK 14: Informatie met betrekking tot het vervoer

- |   |                                      |
|---|--------------------------------------|
| · <b>14.1 VN-nummer</b>   | UN1120                               |
| · <b>ADR, IMDG, IATA</b>  |                                      |
| · <b>14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</b>        |                                      |
| · <b>ADR</b>  | 1120 BUTANOLEN                       |
| · <b>IMDG, IATA</b>   | BUTANOLS                             |
| · <b>14.3 Transportgevaarklasse(n)</b>  |                                      |
| · <b>ADR, IMDG, IATA</b>  |                                      |
|  |                                      |
| · <b>klasse</b>   | 3 Brandbare vloeistoffen             |
| · <b>Etiket</b>   | 3                                    |
| · <b>14.4 Verpakkingsgroep:</b>   |                                      |
| · <b>ADR, IMDG, IATA</b>  | III                                  |
| · <b>14.5 Milieugevaren:</b>  | Niet bruikbaar.                      |
| · <b>14.6 Bijzondere voorzorgen voor de gebruiker</b>                               | Waarschuwing: Brandbare vloeistoffen |
| · <b>Gevaarsidentificatienummer (Kemler-getal):</b>                                 | 30                                   |
| · <b>EMS-nummer:</b>  | 3-06                                 |
| · <b>Stowage Category</b>   | A                                    |
| · <b>14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code</b>   | Niet bruikbaar.                      |

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· **Transport/verdere gegevens:**

· **ADR**

· **Beperkte hoeveelheden (LQ)**

5L

· **Uitgezonderde hoeveelheden (EQ)**

Code: E1

Grootste netto hoeveelheid per binnenverpakking: 30 ml

Grootste netto hoeveelheid per buitenverpakking: 1000 ml

· **Vervoerscategorie**

3

· **Tunnelbeperkingscode**

D/E

· **IMDG**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **VN "Model Regulation":**

UN 1120 BUTANOLEN, 3, III

## RUBRIEK 15: Regelgeving

- **15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel**
- **SZW-lijst van kankerverwekkende stoffen** De stof is niet aanwezig.
- **SZW-lijst van mutagene stoffen** De stof is niet aanwezig.
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid** De stof is niet aanwezig.
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling** De stof is niet aanwezig.
- **NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding** De stof is niet aanwezig.
- **Lijst Zeer Zorgwekkende Stoffen (ZZS)** De stof is niet aanwezig.
- **Lijst van Potentieel Zeer Zorgwekkende Stoffen** De stof is niet aanwezig.
- **Richtlijn 2012/18/EU**
- **Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I** De stof is niet aanwezig.
- **Seveso-categorie P5c ONTVLAMBARE VLOEISTOFFEN**
- **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen** 5.000 t
- **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen** 50.000 t
- **Verordening (EG) nr. 1907/2006 BIJLAGE XVII** Beperkingsvoorwaarden: 3, 40
- **Nationale voorschriften:**
- **Gevaarklasse v. water:**
- **Waterbezwaarlijkheid (NL):** B(4) Weinig schadelijk voor in water levende organismen
- **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

## RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

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**Afkortingen en acroniemen:**

*ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)*

*IMDG: International Maritime Code for Dangerous Goods*

*IATA: International Air Transport Association*

*GHS: Globally Harmonised System of Classification and Labelling of Chemicals*

*EINECS: European Inventory of Existing Commercial Chemical Substances*

*CAS: Chemical Abstracts Service (division of the American Chemical Society)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*Flam. Liq. 3: Ontvlambare vloeistoffen – Categorie 3*

*Acute Tox. 4: Acute toxiciteit - oraal – Categorie 4*

*Skin Irrit. 2: Huidcorrosie/-irritatie – Categorie 2*

*Eye Dam. 1: Ernstig oogletsel/oogirritatie – Categorie 1*

*STOT SE 3: Specifieke doelorgaan toxiciteit bij eenmalige blootstelling – Categorie 3*

NL

# Fiche de données de sécurité

## selon 1907/2006/CE, Article 31

Date d'impression : 07.04.2020

Révision: 07.04.2020

### RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** butane-1-ol
- **Code du produit:** 11920, 11921
- **No CAS:**  
71-36-3
- **Numéro CE:**  
200-751-6
- **Numéro index:**  
603-004-00-6
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**  
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS02 flamme

Flam. Liq. 3 H226      Liquide et vapeurs inflammables.



GHS05 corrosion

Eye Dam. 1 H318      Provoque de graves lésions des yeux.



GHS07

Acute Tox. 4 H302      Nocif en cas d'ingestion.

Skin Irrit. 2 H315      Provoque une irritation cutanée.

STOT SE 3 H335-H336      Peut irriter les voies respiratoires. Peut provoquer somnolence ou vertiges.

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**Nom du produit: butane-1-ol**

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- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008**  
La substance est classifiée et étiquetée selon le règlement CLP.
- **Pictogrammes de danger**



GHS02    GHS05    GHS07

- **Mention d'avertissement** Danger
- **Mentions de danger**
  - H226      Liquide et vapeurs inflammables.
  - H302      Nocif en cas d'ingestion.
  - H315      Provoque une irritation cutanée.
  - H318      Provoque de graves lésions des yeux.
  - H335-H336 Peut irriter les voies respiratoires. Peut provoquer somnolence ou vertiges.
- **Conseils de prudence**
  - P303+P361+P353 **EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux):** Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau [ou se doucher].
  - P305+P351+P338 **EN CAS DE CONTACT AVEC LES YEUX:** Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.
  - P310      Appeler immédiatement un CENTRE ANTIPOISON/un médecin.
  - P321      Traitement spécifique (voir sur cette étiquette).
  - P330      Rincer la bouche.
  - P362+P364      Enlever les vêtements contaminés et les laver avant réutilisation.
  - P405      Garder sous clef.
  - P501      Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.
- **2.3 Autres dangers**
- **Résultats des évaluations PBT et vPvB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.

### RUBRIQUE 3: Composition/informations sur les composants

- **3.1 Caractérisation chimique: Substances**
- **No CAS Désignation**  
71-36-3 butane-1-ol
- **Code(s) d'identification**
- **Numéro CE:** 200-751-6
- **Numéro index:** 603-004-00-6

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**Nom du produit: butane-1-ol**

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### RUBRIQUE 4: Premiers secours

- **4.1 Description des premiers secours**
- **Remarques générales:**  
Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.
- **Après inhalation:** En cas d'inconscience, coucher et transporter la personne en position latérale stable.
- **Après contact avec la peau:** Laver immédiatement à l'eau et au savon et bien rincer.
- **Après contact avec les yeux:**  
Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières et consulter un médecin.
- **Après ingestion:** Consulter immédiatement un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**  
Pas d'autres informations importantes disponibles.

### RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**  
CO<sub>2</sub>, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **Produits extincteurs déconseillés pour des raisons de sécurité:** Jet d'eau à grand débit
- **5.2 Dangers particuliers résultant de la substance ou du mélange**  
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Aucune mesure particulière n'est requise.

### RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence**  
Porter un équipement de sécurité. Eloigner les personnes non protégées.
- **6.2 Précautions pour la protection de l'environnement:**  
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**  
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).  
Evacuer les matériaux contaminés en tant que déchets conformément au point 13.  
Assurer une aération suffisante.
- **6.4 Référence à d'autres rubriques**  
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.  
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.  
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

### RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**  
Aucune mesure particulière n'est nécessaire en cas de bonne utilisation.

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**Nom du produit: butane-1-ol**

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- **Préventions des incendies et des explosions:**  
Tenir à l'abri des sources d'inflammation - ne pas fumer.  
Prendre des mesures contre les charges électrostatiques.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

### RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**  
Sans autre indication, voir point 7.

#### · 8.1 Paramètres de contrôle

- **Composants présentant des valeurs-seuil à surveiller par poste de travail:**

<b>71-36-3 butane-1-ol</b>	
VLEP	Valeur momentané: 150 mg/m <sup>3</sup> , 50 ppm

- **Remarques supplémentaires:**

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

#### · 8.2 Contrôles de l'exposition

- **Equipement de protection individuel:**

- **Mesures générales de protection et d'hygiène:**

Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.

Retirer immédiatement les vêtements souillés ou humectés.

Se laver les mains avant les pauses et en fin de travail.

Eviter tout contact avec la peau.

Eviter tout contact avec les yeux et avec la peau.

- **Protection respiratoire:**

En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.

- **Protection des mains:**



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

- **Matériau des gants**

Le choix de gants appropriés ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.

- **Temps de pénétration du matériau des gants**

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

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# Fiche de données de sécurité

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## · Protection des yeux:



Lunettes de protection hermétiques

### RUBRIQUE 9: Propriétés physiques et chimiques

## · 9.1 Informations sur les propriétés physiques et chimiques essentielles

## · Indications générales

## · Aspect:

· <i>Forme:</i>	<i>Liquide</i>
· <i>Couleur:</i>	<i>Incolore</i>
· <i>Odeur:</i>	<i>Genre alcool</i>
· <i>Seuil olfactif:</i>	<i>Non déterminé.</i>

· *valeur du pH:* 7· *Changement d'état*

· <i>Point de fusion/point de congélation:</i>	<i>-89 °C</i>
· <i>Point initial d'ébullition et intervalle d'ébullition:</i>	<i>116-118 °C</i>

· *Point d'éclair* 35 °C· *Inflammabilité (solide, gaz):* *Non applicable.*· *Température d'inflammation:* 340 °C· *Température de décomposition:* *Non déterminé.*· *Température d'auto-inflammabilité:* *Non déterminé.*· *Propriétés explosives:* *Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.*· *Limites d'explosion:*

· <i>Inférieure:</i>	<i>1,5 Vol %</i>
· <i>Supérieure:</i>	<i>9,4 Vol %</i>

· *Pression de vapeur à 20 °C:* 6,7 hPa· *Densité à 20 °C:* 0,81 g/cm<sup>3</sup>· *Densité relative* *Non déterminé.*· *Densité de vapeur:* *Non déterminé.*· *Taux d'évaporation:* *Non déterminé.*· *Solubilité dans/miscibilité avec l'eau à 20 °C:*

77 g/l

· *Coefficient de partage: n-octanol/eau:* *Non déterminé.*· *Viscosité:*

· <i>Dynamique à 20 °C:</i>	<i>2,95 mPas</i>
· <i>Cinématique:</i>	<i>Non déterminé.</i>

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· 9.2 Autres informations

Pas d'autres informations importantes disponibles.

### RUBRIQUE 10: Stabilité et réactivité

- 10.1 Réactivité Pas d'autres informations importantes disponibles.
- 10.2 Stabilité chimique
- Décomposition thermique/conditions à éviter: Pas de décomposition en cas d'usage conforme.
- 10.3 Possibilité de réactions dangereuses Aucune réaction dangereuse connue.
- 10.4 Conditions à éviter Pas d'autres informations importantes disponibles.
- 10.5 Matières incompatibles: Pas d'autres informations importantes disponibles.
- 10.6 Produits de décomposition dangereux: Pas de produits de décomposition dangereux connus

### RUBRIQUE 11: Informations toxicologiques

- 11.1 Informations sur les effets toxicologiques
- Toxicité aiguë  
Nocif en cas d'ingestion.

· Valeurs LD/LC50 déterminantes pour la classification:

Oral	LD50	790 mg/kg (rat)
Dermique	LD50	3.400 mg/kg (lapin)
Inhalatoire	LC50/4 h	8.000 mg/l (rat)

- Effet primaire d'irritation:
- Corrosion cutanée/irritation cutanée  
Provoque une irritation cutanée.
- Lésions oculaires graves/irritation oculaire  
Provoque de graves lésions des yeux.
- Sensibilisation respiratoire ou cutanée  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- Effets CMR (cancérogène, mutagène et toxique pour la reproduction)
- Mutagénicité sur les cellules germinales  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- Cancérogénicité Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- Toxicité pour la reproduction  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- Toxicité spécifique pour certains organes cibles - exposition unique  
Peut irriter les voies respiratoires. Peut provoquer somnolence ou vertiges.
- Toxicité spécifique pour certains organes cibles - exposition répétée  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- Danger par aspiration  
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

### RUBRIQUE 12: Informations écologiques

- 12.1 Toxicité
- Toxicité aquatique: Pas d'autres informations importantes disponibles.
- 12.2 Persistance et dégradabilité Pas d'autres informations importantes disponibles.

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- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**  
Catégorie de pollution des eaux 1 (D) (classification selon liste): peu polluant  
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
- **12.5 Résultats des évaluations PBT et VPVB**
- **PBT:** Non applicable.
- **vPvB:** Non applicable.
- **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

### RUBRIQUE 13: Considérations relatives à l'élimination

- **13.1 Méthodes de traitement des déchets**
- **Recommandation:**  
Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

### RUBRIQUE 14: Informations relatives au transport

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>· <b>14.1 Numéro ONU</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | UN1120  |
| <ul style="list-style-type: none"> <li>· <b>14.2 Désignation officielle de transport de l'ONU</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul>  | 1120 BUTANOLS<br>BUTANOLS                       |
| <ul style="list-style-type: none"> <li>· <b>14.3 Classe(s) de danger pour le transport</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>  |   |
|   |   |
| <ul style="list-style-type: none"> <li>· <b>Classe</b></li> <li>· <b>Étiquette</b></li> </ul>  | 3 Liquides inflammables.<br>3                   |
| <ul style="list-style-type: none"> <li>· <b>14.4 Groupe d'emballage</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | III   |
| <ul style="list-style-type: none"> <li>· <b>14.5 Dangers pour l'environnement:</b></li> </ul>  | Non applicable.                                 |
| <ul style="list-style-type: none"> <li>· <b>14.6 Précautions particulières à prendre par l'utilisateur</b></li> <li>· <b>Numéro d'identification du danger (Indice Kemler):</b></li> <li>· <b>No EMS:</b></li> </ul> | Attention: Liquides inflammables.<br>30<br>3-06 |

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· <b>Stowage Category</b>	A
· <b>14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC</b>	Non applicable.
· <b>Indications complémentaires de transport:</b>	
· <b>ADR</b>	
· <b>Quantités limitées (LQ)</b>	5L
· <b>Quantités exceptées (EQ)</b>	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 1000 ml
· <b>Catégorie de transport</b>	3
· <b>Code de restriction en tunnels</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>"Règlement type" de l'ONU:</b>	UN 1120 BUTANOLS, 3, III

### RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** la substance n'est pas comprise
- **Catégorie SEVESO P5c LIQUIDES INFLAMMABLES**
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas** 5.000 t
- **Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut** 50.000 t
- **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 3, 40
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

### RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

#### · **Acronymes et abréviations:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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**Fiche de données de sécurité**  
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*Flam. Liq. 3: Liquides inflammables – Catégorie 3**Acute Tox. 4: Toxicité aiguë - voie orale – Catégorie 4**Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2**Eye Dam. 1: Lésions oculaires graves/irritation oculaire – Catégorie 1**STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3*

FR

# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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### ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

· **1.1 Produktidentifikator**

- **Handelsname:** Butan-1-ol
- **Artikelnummer:** 11920, 11921
- **CAS-Nummer:**  
71-36-3
- **EG-Nummer:**  
200-751-6
- **Indexnummer:**  
603-004-00-6

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

- **Verwendung des Stoffes / des Gemisches** Laborchemikalien

· **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**

· **Hersteller/Lieferant:**

Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: [info@emsdiasum.com](mailto:info@emsdiasum.com)  
[www.emsdiasum.com](http://www.emsdiasum.com)

Science Services GmbH  
Unterhachinger Str. 75  
81737 München Germany

Tel: +49(0)89 18 93 668-0  
[safety@scienceservices.de](mailto:safety@scienceservices.de)

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, [www.toxinfo.org](http://www.toxinfo.org)  
Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h

- **Auskunftgebender Bereich:** Product safety department

· **1.4 Notrufnummer:**

ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### ABSCHNITT 2: Mögliche Gefahren

· **2.1 Einstufung des Stoffs oder Gemischs**

- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS02 Flamme

Flam. Liq. 3 H226 Flüssigkeit und Dampf entzündbar.



GHS05 Ätzwirkung

Eye Dam. 1 H318 Verursacht schwere Augenschäden.

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GHS07

Acute Tox. 4 H302      *Gesundheitsschädlich bei Verschlucken.*  
 Skin Irrit. 2 H315      *Verursacht Hautreizungen.*  
 STOT SE 3 H335-H336 *Kann die Atemwege reizen. Kann Schläfrigkeit und Benommenheit verursachen.*

### · 2.2 Kennzeichnungselemente

#### · Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008

*Der Stoff ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.*

#### · Gefahrenpiktogramme



GHS02    GHS05    GHS07

#### · Signalwort Gefahr

#### · Gefahrenhinweise

H226      *Flüssigkeit und Dampf entzündbar.*  
 H302      *Gesundheitsschädlich bei Verschlucken.*  
 H315      *Verursacht Hautreizungen.*  
 H318      *Verursacht schwere Augenschäden.*  
 H335-H336 *Kann die Atemwege reizen. Kann Schläfrigkeit und Benommenheit verursachen.*

#### · Sicherheitshinweise

P303+P361+P353 *BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen [oder duschen].*  
 P305+P351+P338 *BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.*  
 P310      *Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.*  
 P321      *Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).*  
 P330      *Mund ausspülen.*  
 P362+P364      *Kontaminierte Kleidung ausziehen und vor erneutem Tragen waschen.*  
 P405      *Unter Verschluss aufbewahren.*  
 P501      *Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.*

### · 2.3 Sonstige Gefahren

#### · Ergebnisse der PBT- und vPvB-Beurteilung

- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.

## ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

### · 3.1 Chemische Charakterisierung: Stoffe

#### · CAS-Nr. Bezeichnung

71-36-3 Butan-1-ol

#### · Identifikationsnummer(n)

· **EG-Nummer:** 200-751-6

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### ABSCHNITT 4: Erste-Hilfe-Maßnahmen

- **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**

- **Allgemeine Hinweise:**

Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.

- **Nach Einatmen:** Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.

- **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.

- **Nach Augenkontakt:**

Augen bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und Arzt konsultieren.

- **Nach Verschlucken:** Sofort Arzt aufsuchen.

- **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**

Keine weiteren relevanten Informationen verfügbar.

- **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**

Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

- **5.1 Löschmittel**

- **Geeignete Löschmittel:**

CO<sub>2</sub>, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.

- **Aus Sicherheitsgründen ungeeignete Löschmittel:** Wasser im Vollstrahl

- **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**

Keine weiteren relevanten Informationen verfügbar.

- **5.3 Hinweise für die Brandbekämpfung**

- **Besondere Schutzausrüstung:** Keine besonderen Maßnahmen erforderlich.

### ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**

Schutzausrüstung tragen. Ungeschützte Personen fernhalten.

- **6.2 Umweltschutzmaßnahmen:**

Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

- **6.3 Methoden und Material für Rückhaltung und Reinigung:**

Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen. Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.

Für ausreichende Lüftung sorgen.

- **6.4 Verweis auf andere Abschnitte**

Informationen zur sicheren Handhabung siehe Abschnitt 7.

Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.

Informationen zur Entsorgung siehe Abschnitt 13.

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### ABSCHNITT 7: Handhabung und Lagerung

- **7.1 Schutzmaßnahmen zur sicheren Handhabung**  
Bei sachgemäßer Verwendung keine besonderen Maßnahmen erforderlich.
- **Hinweise zum Brand- und Explosionsschutz:**  
Zündquellen fernhalten - nicht rauchen.  
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebsicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.

- **8.1 Zu überwachende Parameter**

- **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

#### 71-36-3 Butan-1-ol

AGW	Langzeitwert: 310 mg/m <sup>3</sup> , 100 ml/m <sup>3</sup> I(1);DFG, Y
-----	--

- **Bestandteile mit biologischen Grenzwerten:**

#### 71-36-3 Butan-1-ol

BGW	2 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: vor nachfolgender Schicht Parameter: Butan-1-ol (1-Butanol) (nach Hydrolyse)
	10 mg/g Kreatinin Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Butan-1-ol (1-Butanol) (nach Hydrolyse)

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.

- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**  
Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.  
Beschmutzte, getränkte Kleidung sofort ausziehen.  
Vor den Pausen und bei Arbeitsende Hände waschen.  
Berührung mit der Haut vermeiden.  
Berührung mit den Augen und der Haut vermeiden.

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- **Atemschutz:**  
Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges Atemschutzgerät verwenden.

- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein.

Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

- **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich.

- **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

- **Augenschutz:**



Dichtschließende Schutzbrille

### ABSCHNITT 9: Physikalische und chemische Eigenschaften

- **9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften**

- **Allgemeine Angaben**

- **Aussehen:**

<b>Form:</b>	Flüssig
<b>Farbe:</b>	Farblos
<b>Geruch:</b>	Alkoholartig
<b>Geruchsschwelle:</b>	Nicht bestimmt.

- **pH-Wert:** 7

- **Zustandsänderung**

<b>Schmelzpunkt/Gefrierpunkt:</b>	-89 °C
<b>Siedebeginn und Siedebereich:</b>	116-118 °C

- **Flammpunkt:** 35 °C

- **Entzündbarkeit (fest, gasförmig):** Nicht anwendbar.

- **Zündtemperatur:** 340 °C

- **Zersetzungstemperatur:** Nicht bestimmt.

- **Selbstentzündungstemperatur:** Nicht bestimmt.

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# Sicherheitsdatenblatt

## gemäß 1907/2006/EG, Artikel 31

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· <b>Explosive Eigenschaften:</b>	Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.
· <b>Explosionsgrenzen:</b>	
<b>Untere:</b>	1,5 Vol %
<b>Obere:</b>	9,4 Vol %
· <b>Dampfdruck bei 20 °C:</b>	6,7 hPa
· <b>Dichte bei 20 °C:</b>	0,81 g/cm <sup>3</sup>
· <b>Relative Dichte</b>	Nicht bestimmt.
· <b>Dampfdichte</b>	Nicht bestimmt.
· <b>Verdampfungsgeschwindigkeit</b>	Nicht bestimmt.
· <b>Löslichkeit in / Mischbarkeit mit Wasser bei 20 °C:</b>	77 g/l
· <b>Verteilungskoeffizient: n-Octanol/Wasser:</b>	Nicht bestimmt.
· <b>Viskosität:</b>	
<b>Dynamisch bei 20 °C:</b>	2,95 mPas
<b>Kinematisch:</b>	Nicht bestimmt.
· <b>9.2 Sonstige Angaben</b>	Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**  
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

### ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**  
Gesundheitsschädlich bei Verschlucken.

· **Einstufungsrelevante LD/LC50-Werte:**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3.400 mg/kg (rabbit)
Inhalativ	LC50/4 h	8.000 mg/l (rat)

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut**  
Verursacht Hautreizungen.
- **Schwere Augenschädigung/-reizung**  
Verursacht schwere Augenschäden.

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- **Sensibilisierung der Atemwege/Haut**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Karzinogenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**  
Kann die Atemwege reizen. Kann Schläfrigkeit und Benommenheit verursachen.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**  
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

### ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**  
Wassergefährdungsklasse 1 (Listeneinstufung): schwach wassergefährdend  
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

### ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:**  
Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.

### ABSCHNITT 14: Angaben zum Transport

- |   |                           |
|---|---------------------------|
| <ul style="list-style-type: none"> <li>· <b>14.1 UN-Nummer</b></li> <li>· <b>ADR, IMDG, IATA</b></li> </ul>   | UN1120                    |
| <ul style="list-style-type: none"> <li>· <b>14.2 Ordnungsgemäße UN-Versandbezeichnung</b></li> <li>· <b>ADR</b></li> <li>· <b>IMDG, IATA</b></li> </ul> | 1120 BUTANOLE<br>BUTANOLS |

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· **14.3 Transportgefahrenklassen**

· **ADR, IMDG, IATA**



· **Klasse** 3 Entzündbare flüssige Stoffe  
 · **Gefahrzettel** 3

· **14.4 Verpackungsgruppe**

· **ADR, IMDG, IATA** III

· **14.5 Umweltgefahren:** Nicht anwendbar.

· **14.6 Besondere Vorsichtsmaßnahmen für den Verwender**

Achtung: Entzündbare flüssige Stoffe

· **Nummer zur Kennzeichnung der Gefahr (Kemler-Zahl):** 30

· **EMS-Nummer:** 3-06

· **Stowage Category** A

· **14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code** Nicht anwendbar.

· **Transport/weitere Angaben:**

· **ADR**

· **Begrenzte Menge (LQ)** 5L

· **Freigestellte Mengen (EQ)** Code: E1

Höchste Nettomenge je Innenverpackung: 30 ml

Höchste Nettomenge je Außenverpackung: 1000 ml

· **Beförderungskategorie** 3

· **Tunnelbeschränkungscode** D/E

· **IMDG**

· **Limited quantities (LQ)** 5L

· **Excepted quantities (EQ)** Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":** UN 1120 BUTANOLE, 3, III

### ABSCHNITT 15: Rechtsvorschriften

· **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

· **Richtlinie 2012/18/EU**

· **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Der Stoff ist nicht enthalten.

· **Seveso-Kategorie P5c** ENTZÜNDBARE FLÜSSIGKEITEN

· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse** 5.000 t

· **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse** 50.000 t

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· **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII Beschränkungsbedingungen:** 3, 40· **Nationale Vorschriften:**· **Technische Anleitung Luft:**

Klasse	Anteil in %
NK	100,0

· **Wassergefährdungsklasse: WGK 1 (Listeneinstufung):** schwach wassergefährdend.· **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

### ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

· **Abkürzungen und Akronyme:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 3: Entzündbare Flüssigkeiten – Kategorie 3

Acute Tox. 4: Akute Toxizität - oral – Kategorie 4

Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2

Eye Dam. 1: Schwere Augenschädigung/Augenreizung – Kategorie 1

STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3

DE

**Scheda di dati di sicurezza**  
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### SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

- **1.1 Identificatore del prodotto**
- **Denominazione commerciale:** butan-1-olo
- **Articolo numero:** 11920, 11921
- **Numero CAS:**  
71-36-3
- **Numeri CE:**  
200-751-6
- **Numero indice:**  
603-004-00-6
- **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**  
Non sono disponibili altre informazioni.
- **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio
- **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**
- **Produttore/fornitore:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Società Italiana Chimici**  
Via Rio Nell Ellba 140  
00138 Rome, Italy  
Tel: 39 06 8800211  
Fax: 39 30 06 8815313  
Web: www.sichim.com
- **Informazioni fornite da:** Product safety department
- **1.4 Numero telefonico di emergenza:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SEZIONE 2: Identificazione dei pericoli

- **2.1 Classificazione della sostanza o della miscela**
- **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS02 fiamma

Flam. Liq. 3 H226      Liquido e vapori infiammabili.



GHS05 corrosione

Eye Dam. 1 H318      Provoca gravi lesioni oculari.



GHS07

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Acute Tox. 4 H302      Nocivo se ingerito.  
Skin Irrit. 2 H315      Provoca irritazione cutanea.  
STOT SE 3 H335-H336 Può irritare le vie respiratorie. Può provocare sonnolenza o vertigini.

**2.2 Elementi dell'etichetta****Etichettatura secondo il regolamento (CE) n. 1272/2008**

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

**Pittogrammi di pericolo**

GHS02    GHS05    GHS07

**Avvertenza Pericolo****Indicazioni di pericolo**

H226      Liquido e vapori infiammabili.  
H302      Nocivo se ingerito.  
H315      Provoca irritazione cutanea.  
H318      Provoca gravi lesioni oculari.  
H335-H336 Può irritare le vie respiratorie. Può provocare sonnolenza o vertigini.

**Consigli di prudenza**

P303+P361+P353 **IN CASO DI CONTATTO CON LA PELLE (o con i capelli):** togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle [o fare una doccia].

P305+P351+P338 **IN CASO DI CONTATTO CON GLI OCCHI:** sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.

P310      Contattare immediatamente un CENTRO ANTIVELENI/un medico.

P321      Trattamento specifico (vedere su questa etichetta).

P330      Sciacquare la bocca.

P362+P364 Togliere tutti gli indumenti contaminati e lavarli prima di indossarli nuovamente.

P405      Conservare sotto chiave.

P501      Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

**2.3 Altri pericoli****Risultati della valutazione PBT e vPvB**

**PBT:** Non applicabile.

**vPvB:** Non applicabile.

### SEZIONE 3: Composizione/informazioni sugli ingredienti

**3.1 Caratteristiche chimiche: Sostanze****Numero CAS**

71-36-3 butan-1-olo

**Numero/i di identificazione****Numeri CE:** 200-751-6

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· **Numero indice:** 603-004-00-6

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#### **SEZIONE 4: Misure di primo soccorso**

· **4.1 Descrizione delle misure di primo soccorso**

· **Indicazioni generali:**

*I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.*

· **Inalazione:**

*Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.*

· **Contatto con la pelle:** *Lavare immediatamente con acqua e sapone sciacquando accuratamente.*

· **Contatto con gli occhi:**

*Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte e consultare il medico.*

· **Ingestione:** *Chiamare subito il medico.*

· **4.2 Principali sintomi ed effetti, sia acuti che ritardati** *Non sono disponibili altre informazioni.*

· **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali** *Non sono disponibili altre informazioni.*

#### **SEZIONE 5: Misure antincendio**

· **5.1 Mezzi di estinzione**

· **Mezzi di estinzione idonei:**

*CO<sub>2</sub>, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.*

· **Mezzi di estinzione inadatti per motivi di sicurezza:** *Getti d'acqua*

· **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** *Non sono disponibili altre informazioni.*

· **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**

· **Mezzi protettivi specifici:** *Non sono richiesti provvedimenti particolari.*

#### **SEZIONE 6: Misure in caso di rilascio accidentale**

· **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza**

*Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.*

· **6.2 Precauzioni ambientali:**

*Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.*

· **6.3 Metodi e materiali per il contenimento e per la bonifica:**

*Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).*

*Smaltimento del materiale contaminato conformemente al punto 13.*

*Provvedere ad una sufficiente areazione.*

· **6.4 Riferimento ad altre sezioni**

*Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.*

*Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.*

*Per informazioni relative allo smaltimento vedere Capitolo 13.*

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### SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**  
Per un uso corretto non sono necessari provvedimenti particolari.
- **Indicazioni in caso di incendio ed esplosione:**  
Tenere lontano da fonti di calore, non fumare.  
Adottare provvedimenti contro cariche elettrostatiche.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**  
Mantenere i recipienti ermeticamente chiusi.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

### SEZIONE 8: Controllo dell'esposizione/protezione individuale

- **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

- **8.1 Parametri di controllo**

- **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

**71-36-3 butan-1-olo**

TWA	Valore a lungo termine: 61 mg/m <sup>3</sup> , 20 ppm
-----	---

- **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.
- **8.2 Controlli dell'esposizione**
- **Mezzi protettivi individuali:**
- **Norme generali protettive e di igiene del lavoro:**  
Tenere lontano da cibo, bevande e foraggi.  
Togliere immediatamente gli abiti contaminati.  
Lavarsi le mani prima dell'intervallo o a lavoro terminato.  
Evitare il contatto con la pelle.  
Evitare il contatto con gli occhi e la pelle.
- **Maschera protettiva:**  
Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.
- **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione. A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche. Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

- **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.

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- **Tempo di permeazione del materiale dei guanti**  
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
- **Occhiali protettivi:**



Occhiali protettivi a tenuta

### SEZIONE 9: Proprietà fisiche e chimiche

· <b>9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali</b>	
· <b>Indicazioni generali</b>	
· <b>Aspetto:</b>	
<b>Forma:</b>	Liquido
<b>Colore:</b>	Incolore
· <b>Odore:</b>	Simile all'alcool
· <b>Soglia olfattiva:</b>	Non definito.
· <b>valori di pH:</b>	7
· <b>Cambiamento di stato</b>	
<b>Punto di fusione/punto di congelamento:</b>	-89 °C
<b>Punto di ebollizione iniziale e intervallo di ebollizione:</b>	116-118 °C
· <b>Punto di infiammabilità:</b>	35 °C
· <b>Infiammabilità (solidi, gas):</b>	Non applicabile.
· <b>Temperatura di accensione:</b>	340 °C
· <b>Temperatura di decomposizione:</b>	Non definito.
· <b>Temperatura di autoaccensione:</b>	Non definito.
· <b>Proprietà esplosive:</b>	Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.
· <b>Limiti di infiammabilità:</b>	
<b>Inferiore:</b>	1,5 Vol %
<b>Superiore:</b>	9,4 Vol %
· <b>Tensione di vapore a 20 °C:</b>	6,7 hPa
· <b>Densità a 20 °C:</b>	0,81 g/cm <sup>3</sup>
· <b>Densità relativa</b>	Non definito.
· <b>Densità di vapore:</b>	Non definito.
· <b>Velocità di evaporazione</b>	Non definito.
· <b>Solubilità in/Miscibilità con acqua a 20 °C:</b>	77 g/l
· <b>Coefficiente di ripartizione: n-ottanolo/acqua:</b>	Non definito.
· <b>Viscosità:</b>	
<b>Dinamica a 20 °C:</b>	2,95 mPas

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<b>Cinematica:</b>	Non definito.
<b>9.2 Altre informazioni</b>	Non sono disponibili altre informazioni.

### SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:**  
Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.
- **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

### SEZIONE 11: Informazioni tossicologiche

- **11.1 Informazioni sugli effetti tossicologici**
- **Tossicità acuta**  
Nocivo se ingerito.

- **Valori LD/LC50 rilevanti per la classificazione:**

Orale	LD50	790 mg/kg (rat)
Cutaneo	LD50	3.400 mg/kg (rabbit)
Per inalazione	LC50/4 h	8.000 mg/l (rat)

- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea**  
Provoca irritazione cutanea.
- **Lesioni oculari gravi/irritazioni oculari gravi**  
Provoca gravi lesioni oculari.
- **Sensibilizzazione respiratoria o cutanea**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Cancerogenicità** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**  
Può irritare le vie respiratorie. Può provocare sonnolenza o vertigini.
- **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Pericolo in caso di aspirazione**  
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

### SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.

(continua a pagina 7)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 07.04.2020

Revisione: 07.04.2020

**Denominazione commerciale: butan-1-olo**


(Segue da pagina 6)

- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**  
Pericolosità per le acque classe 1 (D) (Classif. secondo le liste): poco pericoloso  
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- **12.5 Risultati della valutazione PBT e vPvB**
- **PBT:** Non applicabile.
- **vPvB:** Non applicabile.
- **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

### SEZIONE 13: Considerazioni sullo smaltimento

- **13.1 Metodi di trattamento dei rifiuti**
- **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

### SEZIONE 14: Informazioni sul trasporto

- |   |   |
|---|---|
| · <b>14.1 Numero ONU</b><br>· <b>ADR, IMDG, IATA</b>  | UN1120  |
| · <b>14.2 Nome di spedizione dell'ONU</b><br>· <b>ADR</b><br>· <b>IMDG, IATA</b>  | 1120 BUTANOLI<br>BUTANOLS                           |
| · <b>14.3 Classi di pericolo connesso al trasporto</b><br>· <b>ADR, IMDG, IATA</b>  |   |
|    |   |
| · <b>Classe</b><br>· <b>Etichetta</b>   | 3 Liquidi infiammabili<br>3                         |
| · <b>14.4 Gruppo di imballaggio</b><br>· <b>ADR, IMDG, IATA</b>   | III   |
| · <b>14.5 Pericoli per l'ambiente:</b>  | Non applicabile.                                    |
| · <b>14.6 Precauzioni speciali per gli utilizzatori</b><br>· <b>N° identificazione pericolo (Numero Kemler):</b><br>· <b>Numero EMS:</b><br>· <b>Stowage Category</b> | Attenzione: Liquidi infiammabili<br>30<br>3-06<br>A |
| · <b>14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC</b>   | Non applicabile.                                    |

(continua a pagina 8)

**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 07.04.2020

Revisione: 07.04.2020

**Denominazione commerciale: butan-1-olo**

(Segue da pagina 7)

**· Trasporto/ulteriori indicazioni:**

**· ADR**

· **Quantità limitate (LQ)**

5L

· **Quantità esenti (EQ)**

Codice: E1

Quantità massima netta per imballaggio interno: 30 ml

Quantità massima netta per imballaggio esterno: 1000 ml

· **Categoria di trasporto**

3

· **Codice di restrizione in galleria**

D/E

**· IMDG**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN 1120 BUTANOLI, 3, III

### SEZIONE 15: Informazioni sulla regolamentazione

· **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**

· **Direttiva 2012/18/UE**

· **Sostanze pericolose specificate - ALLEGATO I** La sostanza non è contenuta

· **Categoria Seveso P5c** **LIQUIDI INFIAMMABILI**

· **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore** 5.000 t

· **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore** 50.000 t

· **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3, 40

· **Disposizioni nazionali:**

· **Istruzione tecnica aria:**

Classe	quota in %
NC	100,0

· **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

### SEZIONE 16: Altre informazioni

*I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.*

**· Abbreviazioni e acronimi:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

(continua a pagina 9)

**Scheda di dati di sicurezza**  
**ai sensi del regolamento 1907/2006/CE, Articolo 31**

Stampato il: 07.04.2020

Revisione: 07.04.2020

**Denominazione commerciale: butan-1-olo**

(Segue da pagina 8)

*vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 3: Liquidi infiammabili – Categoria 3**Acute Tox. 4: Tossicità acuta per via orale – Categoria 4**Skin Irrit. 2: Corrosione/irritazione della pelle – Categoria 2**Eye Dam. 1: Gravi lesioni oculari/irritazione oculare – Categoria 1**STOT SE 3: Tossicità specifica per organi bersaglio (esposizione singola) – Categoria 3*

IT



# 물질안전보건자료

## GHS에 따라라따

인쇄일자: 2020.04.07

개정: 2020.04.07

### 1 화학제품과 회사에 관한 정보

**제품제조사명**

- **제품명:** n-Butyl Alcohol
- **상품번호:** 11920, 11921
- **번호번호번호**  
71-36-3
- **EC 의번호:**  
200-751-6

**색인색인번호:**

603-004-00-6

해당해당제품질이나 혼합물과 관련 위험도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.

- **제품의 권고용도와 사용상의 제한사항** 실 화 학 품
- **안전데이터표(Safety Data Sheet) 내 공급업체 관련 연락처 정보**
- **제조사/수입자/유통업체 정보**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com

Samchang Commercial Co., Ltd.  
Yeo Eui Do  
PO Box 1110  
Seoul, Korea  
Tel: 82 2 703 3040  
Fax: 82 2 717 3298

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Daedok Science, Co. Ltd.  
34141 E10 Korea Advanced Institute of Science  
Guseong-Dong, Yuseong-gu, Daejeon,  
Korea  
Phone: 82 42 710 2091  
Fax: 82 42 367 0005  
Website: www.labsmro.com

- **추가적인 정보 제공 가능** duct safety department
- **비상연락 전화번호:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### 2 유해성·위험성

- **순물질 또는 혼합물**의 분류분류



화염

인화성 액체 - 구분 3

H226

인화성 액체 및 증기

(2 쪽에 계속)

# 물질안전보건자료

## GHS에 따라라따

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(1 쪽부터계속)



부식

심한 눈 손상성/눈 자극성 - 구분 1 H318 눈에 심한 손상을 일으킴



급성 독성 - 경구 - 구분 4 H302 삼키면 유해함  
피부 부식성/피부 자극성 - 구분 2 H315 피부에 자극을 일으킴  
특정표적장기 독성 - 1회 노출 - 구분 3 H335-H336 호흡 자극성을 일으킬 수 있음 졸음 또는 현기증을 일으킬 수 있음

· 라벨표가요소요소

· 라벨라벨구분요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS02 GHS05 GHS07

· 신호어 위험

유해 위험구분구분문구

인화성 액체 및 증기  
삼키면 유해함  
피부에 자극을 일으킴  
눈에 심한 손상을 일으킴  
호흡 자극성을 일으킬 수 있음 졸음 또는 현기증을 일으킬 수 있음

· 예방조치문구문구

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오.  
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.  
즉시 독성물질센터/병원 연락 필요.  
(라벨 참조) 처치를 하시오.  
입을 씻어내시오.  
오염된 의복은 벗고 다시 사용 전 세척하십시오.  
밀봉하여 저장하십시오.  
(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

기타기타유해성

- PBT(잔류성, 생물농축성, 물질독성) 및 vPvB(고 잔류성, 고 생물농축성, 물질독성) 평가 결과
- PBT(잔류성, 생물농축성, 물질독성) 물질독성물질독성당사항 없음.
- vPvB(고 잔류성, 고 생물농축성, 물질독성) 물질독성물질독성당사항 없음.

KR

(3 쪽에계속)

# 물질안전보건자료

## GHS에 따라라따

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(2 쪽부터계속)

### 3 구성성분의 명칭 및 함유량

- **화 학 적 특 성:** 화학물질
- CAS-번호표시  
71-36-3 n-Butyl Alcohol
- **식별식별번호**
- EC 의번호: 200-751-6
- 색인색인번호: 603-004-00-6

### 4 응급조치 요령

- **응급조치요령 내용내용**
- **일 반적 정보정보**  
중독 증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간 동안은 의료진의 관찰을 받아야 한다.
- **흡입했을 때:** 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- **피부에 접촉했을 때:** 즉시물과비누로씻고잘행군다.
- **눈에눈에들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어내고나서, 의사와 상담한다
- **먹었을 때:** 즉시 의사의 도움을 구한다.
- 기타기타 **각각의 주의사항:**  
가장가장 **중요한정보는중독증상정보와영향정보**가 존재하지 않습니다.
- **즉각적인 의료처리 및 특별처리가 필요함을 시사하는 중독후정황**적인 정보가 존재하지 않습니다.

### 5 폭발·화재시 대처방법

- 소화제
- **적절한 소화제:**  
이산화탄소, 진화용석회가루 또는 물방사를 사용하고, 더 큰 화재는 물을 분사하거나 알코올이 함유된 거품으로 끈다.
- **부적절한 소화제:** 플레트용 물
- **본 화학물질이나 혼합물에서 발생가능한특별특수화재성** 추가적인 정보가 존재하지 않습니다.
- **소방관에게 대한 대안사항**  
화재화재시 **적용할 보호구 및 예방조치:** 특별한 조치가 필요없음.

### 6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치절차절차**  
안전장비착용하고, 무방비의 사람은 격리시킨다.
- **환경환경환경관리조치:** 하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐밀폐밀폐밀폐소재소재**  
액체가 혼합된 물질 (모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.  
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.  
충분한 환기가 되도록 한다.
- **식더 식더 식더**  
안전관리에 대한 정보는 제7 장을 참고하시오.  
개인 보호 장비에 대한 정보는 제8 장을 참고하시오.

(4 쪽에계속)

# 물질안전보건자료

## GHS에 따라라다

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(3 쪽부터계속)

쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

### 7 취급 및 저장방법

취급취급취급

안전안전안전을 위한 예방조치를 올바르게 사용할 경우에는 특별한 주의가 필요없다.

화재화재화재발발발에 대한 예방대책에 관한 관련 정보

- 발화요소는 멀리둔다. 금연.
- 정전기 의충전으로부터 보호한다.

· 혼합위험성: 혼합양액의 조건

보관보관보관

- 안전장 저장방법별 한 요구사항이 없음.
- 하중을 공중공중보관에 대한 안전장 정보 없음
- 보관 조건에 관한 추가적인 정보를 새지않게 밀폐한채보관한다.
- 구체적 최종사용자 추가적인 정보가 존재하지 않습니다.

### 8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이상 의 자료는 없음. 항목 7 을 참고하십시오.

통제물질번호

- 화학물질의 노출기준, 생물학적 노출기준 등:

71-36-3 n-Butyl Alcohol

TLV (KR)	장기간의값: 20 ppm
PEL (US)	장기간의값: 300 mg/m <sup>3</sup> , 100 ppm
REL (US)	최고노출기준: 150 mg/m <sup>3</sup> , 50 ppm
	Skin
TLV (US)	장기간의값: 61 mg/m <sup>3</sup> , 20 ppm

- 추가정보정보조 할 당시에 유효한 목록을 기초로 사용했다.

노출통제통제통제

개인개인개인

· 일반적보호조치및위생조치:

- 식료품, 음료수와 사료로부터 멀리떨어뜨려놓는다.
- 더러워지거나음료수가물은옷은즉시탈의한다.
- 휴식전이나작업이 끝날때마다 손을 씻는다.
- 피부와의 접촉을 피한다.
- 눈과 피부와의 접촉은 피한다.

· 호흡기보호보호

- 단시간 또는경미한오염의 경우에는 호흡여과기를 사용한다. 심각한 또는 장기간 노출 시에는 호흡보호장비를 사용한다.

보수보호보호



보호용장갑

(5 쪽에계속)

# 물질안전보건자료 GHS에 따라라다

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(4 쪽부터계속)

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.

테스트를하지않았기때문에제품 / 조제 / 화학혼합물에적합한장갑재질에대한추천이없다.

투과시간, 침투율과저하를고려해서장갑재료를선택한다.

**· 장갑의재료**

적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

**· 장갑재료의 투과시간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.  
**보호보호호호**



꼭조이는보안경

## 9 물리화학적 특성

**기본정보 물리화학적 특성에 대한 기본 정보**

**· 일반정보**

외형외형외형

**물리적 상태상 태**

액체의

**색:**

색소가없는

냄새냄새냄새

알코올종류의

**· 후각역치**

알맞지않다.

**· pH:**

7

**· 상태변화**

**녹는점/어는점:**

-89 °C

초기초기 **끓는점과 끓는점범위범위** 116-118 °C

**· 인화점:**

35 °C

**· 인화성고체/기체기체**

해당사항 없음.

**· 점화온도:**

340 °C

**분해온도온도**

알맞지않다.

**· 자기점화:**

알맞지않다.

**· 폭발위험:**

이제품은폭발위험성이없지만, 폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

**인화안화인화성폭발폭발 위험성의 상한(상한) 하한**

**아래로:**

1.5 Vol %

위로위로위로

9.4 Vol %

**· 증기압 의경우 20 °C:**

6.7 hPa

**밀도밀도 밀도경우 20 °C:**

0.81 g/cm<sup>3</sup>

**비중비중비중**

알맞지않다.

**· 증기밀도:**

알맞지않다.

**증발증발증발 속도**

알맞지않다.

(6 쪽에계속)

# 물질안전보건자료

## GHS에 따라라다

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(5 쪽부터계속)

· **용해도:**  
**물 의경우 20 °C:** 77 g/l

· **n 옥탄올/물 분배계수:** 알맞지않다.

점도점도점도

**역학성 의경우 20 °C:** 2.95 mPas

**등점성:** 알맞지않다.

기타정보정보

추가적인 정보가 존재 하지 않습니다.

### 10 안정성 및 반응성

- **반응성** 추가적인 정보가 존재 하지 않습니다.
- **화학적 안정성**
- **화학적 안정성 유해 반응의 가능성 / 피해 야할 조건 조건**에 따라사용할 경우해체는없다
- **유해반응 가능성** 위험한반응으로는알려지지않았다.
- **피해 야할 조건 조건**적인 정보가 존재 하지 않습니다.
- **혼합 혼합물 혼합물** 추가적인 정보가 존재 하지 않습니다.
- **유해분해물질:** 위험성있는분해물들은알려지지않았다.

### 11 독성에 관한 정보

· **독성학적 영향에 대한 정보**  
 급성독성독성독성

· **LD/LC50-수 체에 따른 분류**

구강의	LD50	790 mg/kg (rat)
피부의	LD50	3,400 mg/kg (rabbit)
흡입의	LC50/4 h	8,000 mg/l (rat)

· **일차적 자극 효과**

- **피부피부 자극성 또는 자극성:** 피부와점막을자극한다.
- **심한심한 자극 또는 자극성:** 심각한안구상처의위험이있는강한자극
- **감각화:** 민감한영향이없는것으로알려져있다.

### 12 환경에 미치는 영향

독성독성독성

- **수생독성:** 추가적인 정보가 존재 하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재 하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재 하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재 하지 않습니다.
- **추가적인 생태학 정보정보**

일반 환경영향특징

- **수질오염등급 1 (목록분류):** 약하게수질오염이된
- **희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.**

(7 쪽에계속)

# 물질안전보건자료

## GHS에 따라라다

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명:** n-Butyl Alcohol

(6 쪽부터계속)


- PBT(잔류성, 생물농축성, 물성물질물질) vPvB(고 잔류성, 고 생물농축성) 물질에 해당하지 않음.
- PBT(잔류성, 생물농축성) 물질에 해당하지 않음.
- vPvB(고 잔류성, 고 생물농축성) 물질에 해당하지 않음.

기타기타 **부작용** 추가적인 정보가 존재하지 않습니다.

### 13 폐기시 주의사항

- 폐기물 **계류** 처리 방법  
권고 권고 **생물** 쓰레기와 함께 처리되어서는 안 된다. 하수도망으로 유입되어서는 안 된다.
- **비위생적** 포장 포장  
권고 권고 **생물** 의지 침에 입각 한 쓰레기 처리.

### 14 운송에 필요한 정보

<b>유엔 유엔 번호</b>	UN1120
· ADR, IMDG, IATA	
<b>적정적정적정명</b>	1120 BUTANOLS
· ADR	
· IMDG, IATA	BUTANOLS
<b>교통 교통 위험 위험 클래스</b>	
· ADR, IMDG, IATA	
	
<b>등급 등급 등급</b>	3 발화성용액
· 위험 라벨 라벨	3
· 용기 등급	
· ADR, IMDG, IATA	III
· 환경적 유해물질:	해당 사항 없음.
· <b>이 용기</b> 특별 특별 조치	경고: 발화성용액
<b>위험 위험 위험 코드</b>	30
· E 번호 번호 번호	3-06
· Stowage Category	A
· MARPOL 73/78(선박으로부터의 해양오염방지협약) 부속서 2 및 IBC Code(국제선적화물코드)에 따른 다른 다른 다른 다른 운송 운송	해당 사항 없음.
· <b>운송/ 추가 정보</b>	
· ADR	
<b>한정 한정 한정 수량</b>	5L
· Exempted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

(8 쪽에계속)

# 물질안전보건자료

## GHS에 따라라다

인쇄일자: 2020.04.07


개정: 2020.04.07

**제품명: n-Butyl Alcohol**


(7 쪽부터계속)

운송위험등급 구분	3
터널제한지침 코드	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
· UN번호	UN 1120 BUTANOLS, 3, III


### 15 법적 규제현황

- 산업안전보건법에 의해위험계규제
  - 제조제조물질: 성분이포함되어있지않다
  - 허가대상물질: 성분이포함되어있지않다
  - 관리대상유해물질: 성분이포함되어있다
  - 작업환경측정 대상유해인자 1A42
  - 특수건강진단 대상유해인자 1A41
  - 해당해당수용물 또는 혼합물에는 대한대한안전보건규제규정을 법률
  - Korean Existing Chemical Inventory KE-03867
  - 화학물질관리법
  - 사고대비물질 성분이포함되어있지않다
  - 금지물질 성분이포함되어있지않다
  - 제한물질 성분이포함되어있지않다
  - 유독물질 성분이포함되어있지않다
  - 허가물질 성분이포함되어있지않다
  - 위험물안전관리법 (위험물 및 지정수량) 제 4: 1,000 리터
  - 등록등록등록 또는 선제대상 화학물질 성분이포함되어있지않다
  - '21년까지 등록하여야 할 압, 들연변이, 생식능력 이상을 일으키거나 일으킬 우려가 있는 기존화학물질
  - 중점관리물 지정지정
  - 표1 중점관리물질(제한관련관상) 성분이포함되어있지않다
  - 표2 중점관리물질(제한관련관상) 성분이포함되어있지않다
  - 라벨라벨라벨 요소
  - 본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
  - 그림문자
- 

GHS02



GHS05



GHS07
- 신호어 위험
  - 유해유해유해유해 문구
  - 인화성 액체 및 증기
  - 삼키면 유해함
  - 피부에 자극을 일으킴

(9 쪽에계속)



# 물질안전보건자료

## GHS에 따라라다

인쇄일자: 2020.04.07

개정: 2020.04.07

**제품명: n-Butyl Alcohol**

(8 쪽부터계속)

눈에 심한 손상을 일으킴  
호흡 자극성을 일으킬 수 있음 졸음 또는 현기증을 일으킬 수 있음

**· 예방조치 문구문구**

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오.

눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.

즉시 독성물질센터/병원 연락 필요.

(라벨 참조) 처치를 하시오.

입을 씻어내시오.

오염된 의복은 벗고 다시 사용 전 세척하십시오.

밀봉하여 저장하십시오.

(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

**· 화학물질 안전성 평가** 화학물질 안전성 평가가 수행되지 않음

**16 그 밖의 참고사항**

이 보고는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다, 하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

최초 작성 일자: 2020.04.07

개정 일자: 1 / 2020.04.07

**· 약어와 두문자어:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 07.04.2020

Revisión: 07.04.2020

### SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

- **1.1 Identificador del producto**
- **Nombre comercial:** butan-1-ol
- **Número del artículo:** 11920, 11921
- **Número CAS:**  
71-36-3
- **Número CE:**  
200-751-6
- **Número de clasificación:**  
603-004-00-6
- **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**  
No existen más datos relevantes disponibles.
- **Utilización del producto / de la elaboración** Sustancias químicas de laboratorio
- **1.3 Datos del proveedor de la ficha de datos de seguridad**
- **Fabricante/distribuidor:**  
Electron Microscopy Sciences  
1560 Industry Road  
USA-Hatfield, PA 19440  
Tel: 215-412-8400 Fax: 215-412-8450  
email: info@emsdiasum.com  
www.emsdiasum.com
- **Aname**  
C/ Perez Galdos no. 2  
28693 Quijorna  
Madrid, Spain  
Tel: +34.91.816.89.50  
Fax: +34.91.816.85.94  
email: ventas@aname.es
- **Área de información:** Product safety department
- **1.4 Teléfono de emergencia:**  
ChemTrec 1-800-424-9300 Contract CCN7661  
1-703-527-3887

### SECCIÓN 2: Identificación de los peligros

- **2.1 Clasificación de la sustancia o de la mezcla**
- **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS02 llama

Flam. Liq. 3 H226 Líquidos y vapores inflamables.



GHS05 corrosión

Eye Dam. 1 H318 Provoca lesiones oculares graves.

( se continua en página 2 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 07.04.2020

Revisión: 07.04.2020

Nombre comercial: butan-1-ol

( se continua en página 1 )



GHS07

Acute Tox. 4 H302      Nocivo en caso de ingestión.  
 Skin Irrit. 2 H315      Provoca irritación cutánea.  
 STOT SE 3 H335-H336 Puede irritar las vías respiratorias. Puede provocar somnolencia o vértigo.

### · 2.2 Elementos de la etiqueta

#### · Etiquetado con arreglo al Reglamento (CE) n° 1272/2008

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

#### · Pictogramas de peligro



GHS02    GHS05    GHS07

#### · Palabra de advertencia Peligro

#### · Indicaciones de peligro

H226      Líquidos y vapores inflamables.  
 H302      Nocivo en caso de ingestión.  
 H315      Provoca irritación cutánea.  
 H318      Provoca lesiones oculares graves.  
 H335-H336 Puede irritar las vías respiratorias. Puede provocar somnolencia o vértigo.

#### · Consejos de prudencia

P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente toda la ropa contaminada. Enjuagar la piel con agua [o ducharse].  
 P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Enjuagar con agua cuidadosamente durante varios minutos. Quitar las lentes de contacto cuando estén presentes y pueda hacerse con facilidad. Proseguir con el lavado.  
 P310      Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.  
 P321      Se necesita un tratamiento específico (ver en esta etiqueta).  
 P330      Enjuagarse la boca.  
 P362+P364      Quitar las prendas contaminadas y lavarlas antes de volver a usarlas.  
 P405      Guardar bajo llave.  
 P501      Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

#### · 2.3 Otros peligros

#### · Resultados de la valoración PBT y mPmB

- PBT: No aplicable.
- mPmB: No aplicable.

## SECCIÓN 3: Composición/información sobre los componentes

### · 3.1 Caracterización química: Sustancias

#### · Denominación N° CAS

71-36-3 butan-1-ol

#### · Número(s) de identificación

· Número CE: 200-751-6

( se continua en página 3 )

# Ficha de datos de seguridad

## según 1907/2006/CE, Artículo 31

fecha de impresión 07.04.2020

Revisión: 07.04.2020

Nombre comercial: butan-1-ol

· Número de clasificación: 603-004-00-6

( se continua en página 2 )

### SECCIÓN 4: Primeros auxilios

- **4.1 Descripción de los primeros auxilios**
- **Instrucciones generales:**  
Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.
- **En caso de inhalación del producto:**  
Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.
- **En caso de contacto con la piel:** Lavar inmediatamente con agua y jabón y enjuagar bien.
- **En caso de con los ojos:**  
Limpiar los ojos abiertos durante varios minutos con agua corriente y consultar un médico.
- **En caso de ingestión:** Consultar inmediatamente un médico.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**  
No existen más datos relevantes disponibles.

### SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**  
CO<sub>2</sub>, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.
- **Sustancias extintoras inapropiadas por razones de seguridad:** Agua a pleno chorro
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** No se requieren medidas especiales.

### SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia**  
Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.
- **6.2 Precauciones relativas al medio ambiente:**  
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**  
Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).  
Desechar el material contaminado como vertido según ítem 13.  
Asegurar suficiente ventilación.
- **6.4 Referencia a otras secciones**  
Ver capítulo 7 para mayor información sobre una manipulación segura.  
Ver capítulo 8 para mayor información sobre el equipo personal de protección.  
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

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### SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**  
Si se manipulan correctamente, no se requieren medidas especiales.
- **Prevención de incendios y explosiones:**  
Mantener alejadas las fuentes de encendido. No fumar.  
Tomar medidas contra las cargas electrostáticas.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**  
Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

### SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**  
Sin datos adicionales, ver punto 7.

#### · 8.1 Parámetros de control

- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

#### 71-36-3 butan-1-ol

LEP	Valor de corta duración: 154 mg/m <sup>3</sup> , 50 ppm Valor de larga duración: 61 mg/m <sup>3</sup> , 20 ppm
-----	---

- **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.
- **8.2 Controles de la exposición**
- **Equipo de protección individual:**
- **Medidas generales de protección e higiene:**  
Mantener alejado de alimentos, bebidas y alimentos para animales.  
Quitarse de inmediato la ropa ensuciada o impregnada.  
Lavarse las manos antes de las pausas y al final del trabajo.  
Evitar el contacto con la piel.  
Evitar el contacto con los ojos y la piel.
- **Protección respiratoria:**  
Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.
- **Protección de manos:**



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.  
Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.  
Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

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- **Material de los guantes**  
La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro.
- **Tiempo de penetración del material de los guantes**  
El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.
- **Protección de ojos:**



Gafas de protección herméticas

### SECCIÓN 9: Propiedades físicas y químicas

#### · 9.1 Información sobre propiedades físicas y químicas básicas

##### · Datos generales

##### · Aspecto:

· Forma:	Líquido
· Color:	Incoloro
· Olor:	Similar al del alcohol
· Umbral olfativo:	No determinado.

· valor pH:	7
-------------	---

##### · Cambio de estado

· Punto de fusión/punto de congelación:	-89 °C
· Punto inicial de ebullición e intervalo de ebullición:	116-118 °C

· Punto de inflamación:	35 °C
-------------------------	-------

· Inflamabilidad (sólido, gas):	No aplicable.
---------------------------------	---------------

· Temperatura de ignición:	340 °C
----------------------------	--------

· Temperatura de descomposición:	No determinado.
----------------------------------	-----------------

· Temperatura de auto-inflamación:	No determinado.
------------------------------------	-----------------

· Propiedades explosivas:	El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.
---------------------------	---

##### · Límites de explosión:

· Inferior:	1,5 Vol %
· Superior:	9,4 Vol %

· Presión de vapor a 20 °C:	6,7 hPa
-----------------------------	---------

· Densidad a 20 °C:	0,81 g/cm <sup>3</sup>
· Densidad relativa	No determinado.
· Densidad de vapor	No determinado.
· Tasa de evaporación:	No determinado.

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- |   |  |
|---|--|
| · Solubilidad en / miscibilidad con agua a 20 °C: | 77 g/l                                       |
| · Coeficiente de reparto: n-octanol/agua:         | No determinado.                              |
| · Viscosidad:                                     |  |
| Dinámica a 20 °C:                                 | 2,95 mPas                                    |
| Cinemática:                                       | No determinado.                              |
| · 9.2 Otros datos                                 | No existen más datos relevantes disponibles. |

### SECCIÓN 10: Estabilidad y reactividad

- **10.1 Reactividad** No existen más datos relevantes disponibles.
- **10.2 Estabilidad química**
- **Descomposición térmica / condiciones que deben evitarse:**  
No se descompone al emplearse adecuadamente.
- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

### SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda**  
Nocivo en caso de ingestión.

- **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

Oral	LD50	790 mg/kg (rat)
Dermal	LD50	3.400 mg/kg (rabbit)
Inhalatorio	LC50/4 h	8.000 mg/l (rat)

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas**  
Provoca irritación cutánea.
- **Lesiones o irritación ocular graves**  
Provoca lesiones oculares graves.
- **Sensibilización respiratoria o cutánea**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Carcinogenicidad** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad para la reproducción**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**  
Puede irritar las vías respiratorias. Puede provocar somnolencia o vértigo.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**  
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

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· **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.


### SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**  
Nivel de riesgo para el agua 1 (clasificación de listas): escasamente peligroso para el agua  
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

### SECCIÓN 13: Consideraciones relativas a la eliminación

- **13.1 Métodos para el tratamiento de residuos**
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.

### SECCIÓN 14: Información relativa al transporte

- |   |                        |
|---|------------------------|
| · <b>14.1 Número ONU</b>  |                        |
| · <b>ADR, IMDG, IATA</b>  | UN1120                 |
| · <b>14.2 Designación oficial de transporte de las Naciones Unidas</b>              |                        |
| · <b>ADR</b>  | 1120 BUTANOLES         |
| · <b>IMDG, IATA</b>   | BUTANOLS               |
| · <b>14.3 Clase(s) de peligro para el transporte</b>                                |                        |
| · <b>ADR, IMDG, IATA</b>  |                        |
|  |                        |
| · <b>Clase</b>  | 3 Líquidos inflamables |
| · <b>Etiqueta</b>   | 3                      |
| · <b>14.4 Grupo de embalaje</b>   |                        |
| · <b>ADR, IMDG, IATA</b>  | III                    |

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· <b>14.5 Peligros para el medio ambiente:</b>	No aplicable.
· <b>14.6 Precauciones particulares para los usuarios</b>	Atención: Líquidos inflamables
· <b>Número de identificación de peligro (Número Kemler):</b>	30
· <b>Número EMS:</b>	3-06
· <b>Stowage Category</b>	A
· <b>14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC</b>	No aplicable.
· <b>Transporte/datos adicionales:</b>	
· <b>ADR</b>	
· <b>Cantidades limitadas (LQ)</b>	5L
· <b>Cantidades exceptuadas (EQ)</b>	Código: E1 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 1000 ml
· <b>Categoría de transporte</b>	3
· <b>Código de restricción del túnel</b>	D/E
· <b>IMDG</b>	
· <b>Limited quantities (LQ)</b>	5L
· <b>Excepted quantities (EQ)</b>	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· <b>"Reglamentación Modelo" de la UNECE:</b>	UN 1120 BUTANOL, 3, III

### SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** No contiene la sustancia.
- **Categoría Seveso P5c** LÍQUIDOS INFLAMABLES
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior** 5.000 t
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior** 50.000 t
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3, 40
- **15.2 Evaluación de la seguridad química:**  
Una evaluación de la seguridad química no se ha llevado a cabo.

### SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

#### · **Abreviaturas y acrónimos:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association

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*GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 3: Líquidos inflamables – Categoría 3**Acute Tox. 4: Toxicidad aguda - oral – Categoría 4**Skin Irrit. 2: Corrosión o irritación cutáneas – Categoría 2**Eye Dam. 1: Lesiones oculares graves o irritación ocular – Categoría 1**STOT SE 3: Toxicidad específica en determinados órganos ( exposición única) – Categoría 3*

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