

## n-Butanol

### 1. Chemical product and company identification

**Trade name** : n- Butanol  
**Synonym** : n-Butanol, 1- Hydroxybutane, Methylolpropane, n- Butan-1-01, Propylcarbinol  
**Product code** : 3100  
**Use** : Solvent, for industrial use only

#### Manufacturer / Supplier / Distributor Information

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### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

#### Identification of the risk

**R10** : Flammable  
**R36** : Harmful if swallowed.  
**R66** : Irritating to respiratory system and skin.  
**R67** : Vapours may cause drowsiness and dizziness.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Preparation on the base:

Butan-1-ol; n-butanol

Contents : 99.85 % W/W

CAS-No : 71-36-3 Index-No. :603-004-00-6 EC-No. : 200-751-6  
Symbol(s) : Xn R-phrase(s) -R10-R22-R37/38 - R41- R67

For the full text of the R-phrase mentioned in this Section, see Section 16

### 4. FIRST AID MEASURES

**General advice** : If you feel unwell, seek medical advice (show the label where possible)

**Inhalation** : In case of shortness of breath, give oxygen.  
Move to fresh air in case of accidental inhalation of vapours. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.

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<b>Skin contact</b>	: Wash off immediately with plenty of water for at least 15 minutes. Call a physician immediately.
<b>Eye contact</b>	: Rinse immediately with plenty of running water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Call a physician immediately.
<b>Ingestion</b>	: if swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

## 5. FIREFIGHTING MEASURES

<b>Suitable extinguishing media</b>	: Water spray, Dry powder, Alcohol - resistant foam
<b>Special hazards during</b>	: Flash back possible over considerable distance. Do not allow run- off firefighting from fire fighting to enter drains or water courses.
<b>Special protective equipment for fire fighters</b>	: Standard procedure for chemical fires. In the event of fire, cool tanks with water spray.
<b>Further information</b>	: Standard procedure for chemical fires. In the event of fire, cool tanks with water spray.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal precautions</b>	: Use personal protective equipment. Do not breath vapours or spray mist. Ensure adequate ventilation. Keep away from sources of ignition-No smoking.
<b>Environmental precautions</b>	: Avoid subsoil penetration. Do not flush into surface water or sanitary sewer system.
<b>Methods for cleaning up</b>	: Soak up with inert absorbent material( e.g. sand, silica gel, acid binder, universal binder, sawdust). The material taken up must be disposed of in accordance with regulations.

## 7. HANDLING AND STORAGE

<b>Handling</b>	
<b>Safe handling advice</b>	: Wear personal protective equipment. Avoid contact with skin and eyes, Keep away from sources of ignition - No smoking.
<b>Advice on protection against fire and explosion</b>	: Use explosion- proof equipment. Provide sufficient air exchange and/or exhaust in work rooms. Keep away from sources of ignition. - No smoking.
<b>Storage</b>	
<b>Requirements for storage areas and containers</b>	: Keep containers tightly closed in a dry, cool and well- ventilated place. Keep away from sources of ignition- No smoking.

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## 8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Components with workplace control parameter

NATIONAL OCCUPATIONAL EXPOSURE LIMITS

EUROPEAN OCCUPATIONAL EXPOSURE LIMITS

### Engineering measures

Provide sufficient air exchange and/ or exhaust in work rooms.

### Personal protective equipment

<b>Hand protection</b>	: Gloves suitable for permanent contact: - Material: butyl-rubber - Break through time: 4 h - Material thickness: 0.5 mm
<b>Eye protection</b>	: Safety glasses with side- shields
<b>Skin and body protection</b>	: Protective suit, Safety shoes
<b>Hygiene measures</b>	: Wash hands before breaks and immediately after handling the product.
<b>Protective measures</b>	: Wear suitable protective equipment.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Form</b>	: Liquid
<b>State of matter</b>	: Liquid; at 20 deg C; 1,013 hPa
<b>Colour</b>	: Colourless, clear
<b>Odour</b>	: Alcohol-like
<b>Melting point/range</b>	: -89.5°C
<b>Boiling point/ boiling range</b>	: 117 °C
<b>Flash point</b>	: 37 °C; Closed cup
<b>Flash point</b>	: 98.6 °C; open cup
<b>Autoignition temperature</b>	: 443 deg C
<b>Lower explosion limit</b>	: 1.4 % (V)
<b>Upper explosion limit</b>	: 11.2 % (V)
<b>Vapour pressure</b>	: 9.333 hPa; 25 °C
<b>Density</b>	: 0.81 g/cm <sup>3</sup>
<b>Water Solubility</b>	: Partly soluble
<b>Viscosity, dynamic</b>	: 36.1 mPa.s
<b>Viscosity, kinematic</b>	: 44.568 mm <sup>2</sup> /s
<b>Relative vapour density</b>	: 2.6 (Air = 1.0)

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## 10. STABILITY AND REACTIVITY

<b>Materials to avoid</b>	: Oxidizing agents, Reducing agents, Acid and bases
<b>Hazardous decomposition products</b>	: No decomposition if stored normally.

## 11. TOXICOLOGICAL INFORMATION

<b>Acute oral toxicity</b>	: LD50 rat: 790 mg/kg; literature value
<b>Acute inhalation toxicity</b>	: LC50 rat: 8,000 mg/l; 4 h; literature value
<b>Acute dermal toxicity</b>	: LD50 rabbit: 3,400 mg/kg; literature
<b>Skin irritation</b>	: rabbit: moderately irritating; literature value, Irritating to skin.
<b>Eye irritation</b>	: rabbit: highly irritating; literature value; Risk of serious damage to eyes.

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity effects</b>	
<b>Toxicity to fish</b>	: LC50 Pimephales promelas: 1,730 mg/l; 96 h; literature value
<b>Toxicity daphnia and other aquatic invertebrates</b>	: EC50 Daphnia magna: 1,983 mg/l; 48 h literature

## 13. DISPOSAL CONSIDERATIONS

<b>Product</b>	: In accordance with local and national regulations.
<b>Contaminated packaging</b>	: Packaging that cannot be cleaned must be disposed of in the same way as the material itself.

## 14. TRANSFORM INFORMATION

<b>ADR</b>	: UN number: 1245; Class 3, Packaging group: II; F1; Description of the goods: METHYL ISOBUTYL KETONE
<b>RID</b>	: UN number: 1245; Class 3, Packaging group: II; F1; Description of the goods: METHYL ISOBUTYL KETONE
<b>ADNR</b>	: UN number: 1245; Class 3, Packaging group: II; F1; Description of the goods: METHYL ISOBUTYL KETONE
<b>IMDG</b>	: UN number: 1245; Class 3; Packaging group: II; Description of the goods: Methyl isobutyl ketone

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## 15. REGULATORY INFORMATION

### Labelling



**Regulatory base**  
**Symbol(s)**  
**R-phrase(s)**

: 67/548/EEC  
: Xn: Harmful  
R10: Flammable  
R22: Harmful if swallowed  
R37/38: irritating to respiratory system and skin  
R41: Risk of serious damage to eyes  
R67: Vapours may cause drowsiness and dizziness.

**S-phrase(s)**

S 2: Keep out of the reach of children  
S 7/9: keep container tightly closed and in a well- ventilated place.  
S 13: Keep away from food, drink and animal feeding stuffs.  
S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S37/39: Wear suitable gloves and eye/ face protection.  
S 46: If swallowed, seek medical advice immediately and show this container or label.  
: Butan-1-ol; n- butanol

**Hazardous components  
which must be listed on  
the label**

## 16. OTHER INFORMATION

Full text of R-phrases referred to under sections 2 and 3

R10	Flammable.
R22	Harmful if swallowed.
R37/38	Irritating to respiratory system and skin.
R41	Risk of serious damage to eyes.
R67	Vapours may cause drowsiness and dizziness.

All reasonable efforts were exercised to compile this SDS in accordance with ISO 11014 and ANSIZ400.1.1993. The SDS provides information regarding the health, safety and environmental hazards, at the date of issue, to facilitate the safe receipt, use and handling of the product in the workplace. Since RAR Resin & Chemical Industries and its subsidiaries cannot anticipate or control all conditions under which the product may be handled, used and received in the workplace, it remains the obligation of each user, receiver or handler to, prior to usage, review this SDS in the context within which the product will be received, handled or used in the workplace. The user, handler or receiver must ensure that the necessary mitigating measures are in place as regards health and safety. This does not substitute the need or requirement for any relevant risk assessments to be conducted. It further remains the responsibility of the receiver, handler or user to communicate such information to all relevant parties that may be involved in the receipt, use or handling of the product.

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