

Date of Issue/re-issue: 19/12/2018

Expiry: 01/01/2024

**1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER**

Company Name **ECP Limited**  
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<b>Product</b>	1-butanol				<b>Code</b>	9054
<b>CAS#</b>	<b>HSNO#</b>	<b>UN #</b>	<b>DG Class/es</b>	<b>Packing group #</b>	<b>Tracking?</b>	<b>Handlers Certificate?</b>
71-36-3	HSR001096	1120	3	III	No	No

**Recommended use:** Laboratory Investigations

**2. Hazards identification**

2.1 GHS Classification

- Flammable Liquids (Category C)
- Acute toxicity, Oral (Category D)
- Acute toxicity, Inhalation (Category E)
- Acute toxicity, Dermal (Category E)
- Skin irritation (Category A)
- Eye irritation (Category A)

2.2 GHS Label elements, including precautionary statements



Pictogram **Warning** Signal word

Hazard statement(s)

- H226 Flammable liquid and vapour.
  - H302 Harmful if swallowed.
  - H313 May be harmful in contact with skin.
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H333 May be harmful if inhaled.
- Precautionary statement(s)
- Prevention
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
  - P233 Keep container tightly closed.
  - P240 Ground/bond container and receiving equipment.
  - P241 Use explosion-proof electrical/ventilating/lighting/equipment.
  - P242 Use only non-sparking tools.
  - P243 Take precautionary measures against static discharge.
  - P264 Wash skin thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

- P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
- P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304 + P312 IF INHALED: Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 Call a POISON CENTER/doctor if you feel unwell.

P330 Rinse mouth.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P337 + P313 If eye irritation persists: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal

P501 Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards

None

### 3. Composition/information on ingredients

Substance/Mixture: Substance

3.1 Substances

Hazardous components

Component	Classification	Concentration
n-Butanol	3.1 C; 6.1 D; 6.1 E; 6.3 A; 6.4 A; H226, H302, H333, H313, H315, H319 Concentration limits: >= 20 %: STOT SE 3, H335; >= 20 %: STOT SE 3, H336;	<=100%

### 4. First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Drying, cracking of the skin, skin irritation

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

4.3 Indication of any immediate medical attention and special treatment needed

No data available

### 5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### 5.2 Special hazards arising from the substance or mixture

No data available

#### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### 5.4 Further information

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use water spray to cool unopened containers.

### 6. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

#### 6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal.

### 7. Handling and storage

#### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build-up of electrostatic charge.

#### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Handle and store under inert gas. hygroscopic

#### 7.3 Specific end use(s)

No data available

### 8. Exposure controls/personal protection

#### 8.1 Control parameters

Occupational Exposure Limits Table

Component	CAS No	Value	Control parameters	Basis	Remarks
n-Butanol	71-36-3	WES-Ceiling	50 ppm 150 mg/m <sup>3</sup>	New Zealand. Workplace Exposure Standards for Atmospheric Contaminants	Skin absorption

#### 8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards.

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 58 min

Body Protection

Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination or respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards.

## 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance

Form: liquid, clear

Colour: colourless

b) Odour

No data available

c) Odour Threshold

No data available

d) pH

No data available

e) Melting point/freezing point

Melting point/range: -90 °C

f) Initial boiling point and boiling range

116 - 118 °C

g) Flash point

35 °C - closed cup

h) Evaporation rate

No data available

i) Flammability (solid, gas)

No data available

j) Upper/lower flammability or explosive limits

Upper explosion limit: 11.2 %(V)

Lower explosion limit: 1.4 %(V)

k) Vapour pressure

5 hPa at 20 °C

l) Vapour density

2.56 - (Air = 1.0)

m) Relative density

0.81 g/mL at 25 °C

n) Water solubility

Soluble

o) Partition coefficient: n-octanol/water

No data available

p) Auto-ignition temperature

No data available

q) Decomposition temperature

No data available

r) Viscosity

No data available

## **10. Stability and reactivity**

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Exposure to moisture

Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents, Alkali metals, Bases, Strong acids, Halogens

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

## **11. Toxicological information**

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 790 mg/kg

Remarks: Liver: Fatty liver degeneration. Kidney, Ureter, Bladder: Other changes. Blood: Other changes.

LC50 Inhalation - Rat - 4 h - > 18 mg/l

LD50 Dermal - Rabbit - 3,400 mg/kg

Skin corrosion/irritation

Skin - Rabbit - Skin irritation - 24 h Serious eye damage/eye irritation

Eyes - Rabbit - Blindness - OECD Test Guideline 405

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Potential health effects

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Ingestion

Harmful if swallowed.

Skin

May be harmful if absorbed through skin. Causes skin irritation.

Eyes

Causes eye burns.

Signs and Symptoms of Exposure

Drying, cracking of the skin, skin irritation.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

RTECS: EO1400000

## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish

LC50 - Pimephales promelas (fathead minnow) - 1,840 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea) - 1,983 mg/l - 48 h

### 12.2 Persistence and degradability

### 12.3 Bioaccumulative potential

Bioaccumulation

Oncorhynchus mykiss (rainbow trout) - 24 h -921 mg/l

Bioconcentration factor (BCF): 0.38

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

No data available

## 13. Disposal considerations

### 13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

## 14. Transport Information Table

		<b>ADR/RID – European packaging certification</b>	<b>IMDG International Maritime Dangerous Goods Code</b>	<b>IATA – DGR International Air Travel Association – Dangerous Goods Regulations</b>
<b>14.1</b>	<b>UN Number</b>	1120	1120	1120
<b>14.2</b>	<b>UN Proper Shipping name</b>	BUTANOLS	BUTANOLS	Butanols
<b>14.3</b>	<b>Transport Hazard</b>	3	3	3

	<b>Class</b>			
<b>14.4</b>	<b>Packaging group</b>	III	III	III
<b>14.5</b>	<b>Environmental Hazards</b>	No	No	No
<b>14.6</b>	<b>Special precautions for user</b>	No data available		

## 15. Regulatory information

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

National regulatory information

HSNO Approval Code: HSR001096

HSNO Group Standard Approval: HSR002596 - Laboratory Chemicals and Reagent Kits Group

Standard 2006

Tracking Required: not required

Approved Handler Cert.: not required

## 16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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