

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

## Section 1 - Identification

**Product Name** Isobutanol

**CAS No** 78-83-1

**Synonyms** Isobutanol; Isobutyl alcohol

**Product Code** **36643**

**Address** ThermoFisher Scientific Australia Pty Ltd  
5 Caribbean Drive, Scoresby  
VICTORIA 3179, Australia

**Emergency Tel.** **CHEMTREC®**  
**03 9757 4559 or +613 9757 4559**

**Telephone / Fax Numbers** Tel: 1300 735 292  
Fax: 1800 067 639

**E-mail address** ANZinfo@thermofisher.com

**Recommended Use** Laboratory chemicals.

**Uses advised against** This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

## Section 2 - Hazard(s) Identification

### Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

#### Physical hazards

Flammable liquids

Category 3

#### Health hazards

Skin Corrosion/Irritation  
Serious Eye Damage/Eye Irritation  
Specific target organ toxicity - (single exposure)

Category 2  
Category 1  
Category 3

#### Environmental hazards

No hazards identified

### Label Elements



Flame



Exclamation Mark



Corrosion

**Signal Word****Danger****Hazard Statements**

H226 - Flammable liquid and vapor  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness

**Precautionary Statements**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
P233 - Keep container tightly closed  
P240 - Ground and bond container and receiving equipment  
P241 - Use explosion-proof electrical/ ventilating/ lighting equipment  
P242 - Use non-sparking tools  
P243 - Take action to prevent static discharges  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P271 - Use only outdoors or in a well-ventilated area  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P310 - Immediately call a POISON CENTER or doctor  
P363 - Wash contaminated clothing before reuse  
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed  
P501 - Dispose of contents/ container to an approved waste disposal plant

**Other information**

## Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Isobutyl alcohol	78-83-1	99

## Section 4 - First Aid Measures

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water.

**Skin Contact**

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>General Advice</b>	If symptoms persist, call a physician.
<b>Self-Protection of the First Aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
<b>First Aid Facilities</b>	Eyewash, safety shower and washroom.
<b>Most important symptoms and effects</b>	None reasonably foreseeable. Causes severe eye damage. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically. Symptoms may be delayed.

## Section 5 - Fire Fighting Measures

### Suitable Extinguishing Media

Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

### Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

### Hazardous Decomposition Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

### Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

### Special protective equipment and precautions for fire fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## Section 6 - Accidental Release Measures

### Emergency procedures

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

### Environmental Precautions

Should not be released into the environment.

### Methods for Containment and Clean Up

#### Clean-up methods - small spillage

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

#### Clean-up methods - large spillage

Typically only supplied in small quantities as packaged goods.

If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## Section 7 - Handling and Storage

### Precautions for Safe Handling

Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.

### Conditions for Safe Storage, Including any Incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals

AS 1940-2004 - The storage and handling of flammable and combustible liquids

## Section 8 - Exposure Controls and Personal Protection

### Exposure limits

**AUS** - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia **ACGIH** - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace. **UK** - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020. **DE** - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Isobutyl alcohol	TWA: 50 ppm TWA: 152 mg/m <sup>3</sup>	TWA: 50 ppm TWA: 152 mg/m <sup>3</sup>	TWA: 50 ppm	STEL: 75 ppm 15 min STEL: 231 mg/m <sup>3</sup> 15 min TWA: 50 ppm 8 hr TWA: 154 mg/m <sup>3</sup> 8 hr	TWA: 100 ppm (8 Stunden). AGW - exposure factor 1 TWA: 310 mg/m <sup>3</sup> (8 Stunden). AGW - exposure factor 1 TWA: 100 ppm (8 Stunden). MAK TWA: 310 mg/m <sup>3</sup> (8 Stunden). MAK Höhepunkt: 100 ppm Höhepunkt: 310 mg/m <sup>3</sup>

### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

### Exposure Controls

#### Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

#### Hand Protection

Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Nitrile rubber	> 480 minutes	0.38 mm	AS/NZS 2161	As tested under EN374-3 Determination of Resistance to Permeation by Chemicals
Butyl rubber	> 480 minutes	0.35 mm		
Neoprene gloves	> 480 minutes	0.45 mm		

Viton (R)	> 480 minutes	0.70 mm
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Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

<b>Skin and body protection</b>	Long sleeved clothing
<b>Respiratory Protection</b>	Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of respiratory protective devices
<b>Recommended Filter type:</b>	Organic gases and vapours filter Type A Brown conforming to EN14387 (or AUS/NZ equivalent)
<b>Recommended half mask:-</b>	Valve filtering: EN405 or Half mask: EN140 plus filter, EN 141 (or AUS/NZ equivalent) When RPE is used a face piece Fit Test should be conducted

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls** No information available.

## Section 9 - Physical and Chemical Properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Colorless	
<b>Physical State</b>	Liquid	
<b>Odor</b>	aromatic	
<b>Odor Threshold</b>	No data available	
<b>pH</b>	No information available	
<b>Melting Point/Range</b>	-108 °C / -162.4 °F	
<b>Softening Point</b>	No data available	
<b>Boiling Point/Range</b>	108 °C / 226.4 °F	
<b>Flash Point</b>	28 °C / 82.4 °F	<b>Method -</b> No information available
<b>Evaporation Rate</b>	0.6	(Butyl Acetate = 1.0)
<b>Flammability (solid,gas)</b>	Not applicable	Liquid
<b>Explosion Limits</b>	<b>Lower</b> 1.6 Vol% <b>Upper</b> 10.9 Vol%	
<b>Vapor Pressure</b>	11.7 mbar @ 20°C	
<b>Vapor Density</b>	2.6	(Air = 1.0)
<b>Specific Gravity / Density</b>	0.800	
<b>Bulk Density</b>	Not applicable	Liquid
<b>Water Solubility</b>	Soluble	
<b>Solubility in other solvents</b>	No information available	
<b>Partition Coefficient (n-octanol/water)</b>		
<b>Component</b>	<b>log Pow</b>	
Isobutyl alcohol	1	
<b>Autoignition Temperature</b>	430 °C / 806 °F	
<b>Decomposition Temperature</b>	No data available	
<b>Viscosity</b>	No data available	
<b>Explosive Properties</b>	Not explosive	explosive air/vapour mixtures possible
<b>Oxidizing Properties</b>	Not oxidising	(based on the chemical structure of the substance and oxidation states of the constituent elements)
<b>Other information</b>		
<b>Molecular Formula</b>	C4 H10 O	
<b>Molecular Weight</b>	74.12	

VOC Content(%) 100 %

## Section 10 - Stability and Reactivity

**Reactivity** None known, based on information available

**Stability** Stable under normal conditions.

**Conditions to Avoid** Incompatible products, Excess heat, Keep away from open flames, hot surfaces and sources of ignition.

**Incompatible Materials** Strong oxidizing agents, Acid anhydrides, Acid chlorides.

**Hazardous Decomposition Products** Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**Hazardous Polymerization** Hazardous polymerization does not occur.

## Section 11 - Toxicological Information

### Information on Toxicological Effects

**Product Information** See actual entry in RTECS for complete information.

**(a) acute toxicity;**

**Oral**

Based on available data, the classification criteria are not met

**Dermal**

Based on available data, the classification criteria are not met

**Inhalation**

Based on available data, the classification criteria are not met

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isobutyl alcohol	LD50 = 2460 mg/kg ( Rat )	LD50 = 3400 mg/kg ( Rabbit )	LC50 > 18.18 mg/L ( Rat ) 6 h

**(b) skin corrosion/irritation;** Category 2

**(c) serious eye damage/irritation;** Category 1

**(d) respiratory or skin sensitization;**

**Respiratory**

Based on available data, the classification criteria are not met

**Skin**

Based on available data, the classification criteria are not met

**(e) germ cell mutagenicity;** Based on available data, the classification criteria are not met

**(f) carcinogenicity;** Based on available data, the classification criteria are not met  
There are no known carcinogenic chemicals in this product

**(g) reproductive toxicity;** Based on available data, the classification criteria are not met

**(h) STOT-single exposure;** Category 3

**Results / Target organs**

Respiratory system  
Central nervous system (CNS)

**(i) STOT-repeated exposure;** Based on available data, the classification criteria are not met

**Target Organs**

None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

## Section 12 - Ecological Information

### Ecotoxicity effects

Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Isobutyl alcohol	LC50: 1370 - 1670 mg/L, 96h flow-through (Pimephales promelas) LC50: = 375 mg/L, 96h static (Pimephales promelas) LC50: 1120 - 1520 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: 1480 - 1730 mg/L, 96h flow-through (Lepomis macrochirus)	EC50: = 1300 mg/L, 48h (Daphnia magna) EC50: 1070 - 1933 mg/L, 48h Static (Daphnia magna)	1799 mg/L EC50 = 72 h 230 mg/L EC50 = 48 h	EC50 = 1224.6 mg/L 15 min

### Persistence and Degradability

Readily biodegradable

#### Persistence

Soluble in water, Persistence is unlikely, based on information available.

Component	Degradability
Isobutyl alcohol 78-83-1 ( 99 )	90% (14d)

#### Degradation in sewage treatment plant

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

#### Bioaccumulative Potential

Product has a low potential to bioconcentrate Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Isobutyl alcohol	1	< 100

#### Mobility

The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility Disperses rapidly in air: Highly mobile in soils

#### Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

#### Persistent Organic Pollutant

This product does not contain any known or suspected substance

#### Ozone Depletion Potential

This product does not contain any known or suspected substance

## Section 13 - Disposal Considerations

#### Waste from Residues/Unused Products

Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

#### Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

#### Other Information

Chemical wastes should be disposed through a licensed commercial waste collection service. Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations. Do not empty into drains.

## Section 14 - Transport Information

### IMDG/IMO

UN-No

UN1212

Proper Shipping Name ISOBUTANOL  
Hazard Class 3  
Packing Group III

**ADG**

UN-No UN1212  
Proper Shipping Name ISOBUTANOL  
Hazard Class 3  
Packing Group III

Component	Hazchem Code
Isobutyl alcohol 78-83-1 ( 99 )	3Y

**IATA**

UN-No UN1212  
Proper Shipping Name ISOBUTANOL  
Hazard Class 3  
Packing Group III

Environmental hazards No hazards identified

Special Precautions No special precautions required

Additional information None known

## Section 15 - Regulatory Information

**Safety, health and environmental regulations/legislation specific for the substance or mixture****National Regulations Australia**

See section 8 for national exposure control parameters.

**Standard for the Uniform Scheduling of Medicines and Poisons**

No poison schedule number allocated.

**Australian Industrial Chemicals Introduction Scheme (AICIS)**

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Isobutyl alcohol - 78-83-1	Present	-

**Australian - Illicit Drug Precursors/Reagents Substance List**

This product does not contain any substance(s) on the Illicit Drug Precursors/Reagents list.

**Chemicals of Security Concern**

This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

National pollutant inventory Not applicable



**Prohibition or notification/licensing requirements**

Shown below are details of specific prohibition/notifications or licensing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

**International Inventories**

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Isobutyl alcohol	X	X	201-148-0	-	X	X	-	X	X	X	X	KE-24894

**Legend:** X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**International Regulations**

**Ozone Depletion Potential** This product does not contain any known or suspected substance

**Persistent Organic Pollutant** This product does not contain any known or suspected substance

**Rotterdam Convention (PIC)** Not applicable

**Basel convention on the control of transboundary movements of hazardous wastes and their disposal**

Not applicable.

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Isobutyl alcohol	78-83-1	Listed	Not applicable	Not applicable	Not applicable

**Authorisation/Restrictions according to EU REACH**

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Isobutyl alcohol	-	Use restricted. See item 75. (see link for restriction details)	-

<https://echa.europa.eu/substances-restricted-under-reach>

**Section 16 - Other Information****Legend**

**AICS** - Australian Inventory of Chemical Substances  
**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory  
**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List  
**IECSC** - Chinese Inventory of Existing Chemical Substances  
**PICCS** - Philippines Inventory of Chemicals and Chemical Substances  
**TWA** - Time Weighted Average

**NZIoC** - New Zealand Inventory of Chemicals  
**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances  
**ENCS** - Japanese Existing and New Chemical Substances  
**KECL** - Korean Existing and Evaluated Chemical Substances  
**CAS** - Chemical Abstracts Service  
**ACGIH** - American Conference of Governmental Industrial Hygienists

**IARC** - International Agency for Research on Cancer  
**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association  
**MARPOL** - International Convention for the Prevention of Pollution from Ships  
**NZS 5433:2012** - Transport of Dangerous Goods on Land  
**LD50** - Lethal Dose 50%  
**EC50** - Effective Concentration 50%  
**WEL** - Workplace Exposure Limit  
**DNEL** - Derived No Effect Level  
**POW** - Partition coefficient Octanol:Water  
**vPvB** - very Persistent, very Bioaccumulative  
**VOC** - (Volatile Organic Compound)

Predicted No Effect Concentration (PNEC)  
**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code  
**ADG** Australian Code for the Transport of Dangerous Goods by Road and Rail  
**OECD** - Organisation for Economic Co-operation and Development  
**LC50** - Lethal Concentration 50%  
**ATE** - Acute Toxicity Estimate  
**RPE** - Respiratory Protective Equipment  
**NOEC** - No Observed Effect Concentration  
**BCF** - Bioconcentration factor  
**PBT** - Persistent, Bioaccumulative, Toxic

**Key literature references and sources for data**

<https://echa.europa.eu/information-on-chemicals>  
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

**Training Advice**

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

First aid for chemical exposure, including the use of eye wash and safety showers.

**Revision Date** 18-Nov-2022  
**Revision Summary** Not applicable.

**This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).**

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**