

# SAFETY DATA SHEET



Revision date: 08-Jul-2021

Revision Number 7

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

### Product identifier

**Product Name** n-BUTANOL  
**Product Code(s)** 000030113401

### Other means of identification

**UN number** 1120  
**CAS No.** 71-36-3  
**Synonyms** n-Butyl alcohol; Butan-1-ol; 1-Butanol; Normal butyl alcohol; NBA; Alcohol, butyl; AABUT68000

### Recommended use of the chemical and restrictions on use

**Recommended use** Solvent.  
**Uses advised against** No information available.

### Supplier

Ixom Operations Pty Ltd  
ABN: 51 600 546 512  
Level 8, 1 Nicholson Street  
Melbourne 3000  
Australia

Telephone Number: +61 3 9906 3000

### Emergency telephone number

Emergency telephone number **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

## 2. HAZARDS IDENTIFICATION

### GHS Classification

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

<b>Flammable liquids</b>	Category 3
<b>Acute toxicity - Oral</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 2
<b>Serious eye damage/eye irritation</b>	Category 1
<b>Specific target organ toxicity (single exposure)</b>	Category 3

**SIGNAL WORD**

Danger

**Label elements**Flame  
Corrosion  
Exclamation mark**Hazard statements**H226 - Flammable liquid and vapor  
H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H318 - Causes serious eye damage  
H335 - May cause respiratory irritation  
H336 - May cause drowsiness or dizziness**Precautionary Statements - Prevention**Wash hands thoroughly after handling  
Avoid breathing dust / fume / gas / mist / vapours / spray  
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  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical, ventilating, lighting equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge**Precautionary Statements - Response**Specific treatment (see First aid on this SDS)  
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 or doctor/physician  
IF ON SKIN: Wash with plenty of soap and water  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower  
Take off contaminated clothing and wash before reuse  
If skin irritation occurs: Get medical advice/attention  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell  
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth  
In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet for extinction.**Precautionary Statements - Storage**Store in a well-ventilated place. Keep container tightly closed  
Store in a well-ventilated place. Keep cool  
Store locked up**Precautionary Statements - Disposal**

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

**Other hazards which do not result in classification****General Hazards****Poisons Schedule (SUSMP)**

None allocated

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### Substance

Chemical name	CAS No.	Weight-%
n-Butyl alcohol	71-36-3	>=99.8

### 4. FIRST AID MEASURES

#### Description of first aid measures

<b>Emergency telephone number</b>	Poisons Information Center, Australia: 13 11 26 Poisons Information Center, New Zealand: 0800 764 766
<b>Inhalation</b>	Remove to fresh air. If breathing is difficult, (trained personnel should) give oxygen. If breathing has stopped, give artificial respiration. Get medical attention immediately.
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water. Call a physician if symptoms occur.
<b>Ingestion</b>	Clean mouth with water. Drink 1 or 2 glasses of water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

#### Most important symptoms and effects, both acute and delayed

**Symptoms** Irritation/Corrosion. May cause redness and tearing of the eyes.

#### Indication of any immediate medical attention and special treatment needed

**Note to physicians** Treat symptomatically. Can cause corneal burns. No specific antidote.

### 5. FIRE FIGHTING MEASURES

#### Suitable Extinguishing Media

**Suitable Extinguishing Media** Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray or water fog can be used.

**Unsuitable extinguishing media** No information available.

#### Specific hazards arising from the chemical

**Specific hazards arising from the chemical** Flammable. Most vapors are heavier than air. Vapors may spread along ground and collect in low or confined areas (sewers, basements, tanks). Pay attention to flashback. Cool drums with water spray.

**Hazardous combustion products** Carbon oxides.

#### Special protective actions for fire-fighters

**Special protective equipment for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

Hazchem code •2Y

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Avoid contact with skin and eyes. Avoid breathing vapors or mists. Evacuate personnel to safe areas. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Take precautionary measures against static discharges. Do not touch or walk through spilled material. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

**For emergency responders** Use personal protection recommended in Section 8.

### Environmental precautions

**Environmental precautions** See Section 12 for additional Ecological Information.

### Methods and material for containment and cleaning up

**Methods for containment** Keep out of drains, sewers, ditches and waterways. Stop leak if you can do it without risk.

**Methods for cleaning up** Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use only non-sparking tools. For large amounts, pump off product.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

**Advice on safe handling** Avoid contact with skin, eyes, and clothing. Do not eat, drink or smoke when using this product. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond all lines and equipment associated with product system. All equipment should be non-sparking and explosion proof. Take precautionary measures against static discharges. Use personal protection equipment. Wash thoroughly after handling.

### Conditions for safe storage, including any incompatibilities

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from sources of heat or ignition. Keep container closed when not in use.

**Incompatible materials** Strong oxidizing agents.

**Poisons Schedule (SUSMP)** None allocated

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

**Exposure Limits**

n-Butyl alcohol (n-Butanol): Peak Limitation = 152 mg/m<sup>3</sup> (50 ppm), Sk

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

Peak Limitation - a maximum or peak airborne concentration of a particular substance determined over the shortest analytically practicable period of time which does not exceed 15 minutes.

'Sk' (skin) Notice - absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

### Appropriate engineering controls

#### Engineering controls

Eyewash stations. Apply technical measures to comply with the occupational exposure limits.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

### Individual protection measures, such as personal protective equipment

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.



#### Eye/face protection

Tight sealing safety goggles.

#### Skin and body protection

Boots. Wear suitable protective clothing. Overalls.

#### Hand protection

Impervious gloves.

#### Respiratory protection

If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.

#### Environmental exposure controls

No information available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical state	Liquid
Appearance	No information available.
Color	Colourless
Odor	Alcohol -like
Odor threshold	Not determined

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	7 (60 g/L, 20°C)	None known
pH (as aqueous solution)	No data available	None known
Melting point / freezing point	< -90°C	None known
Boiling point / boiling range	119°C (1013 hPa)	None known
Flash point	35°C	CC (closed cup)
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	<10 hPa @20°C	None known
Vapor density	No data available	None known
Relative density	0.8095 @20°C	None known
Water solubility	66 g/l @ 20 °C	None known
Solubility(ies)	No data available	None known
Partition coefficient	log Pow = 1 @25°C	None known
Autoignition temperature	355°C	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	2.947 mPa.s @20°C	None known

Other information**10. STABILITY AND REACTIVITY**Reactivity

Reactivity Reacts with strong oxidising agents.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid Heat, flames and sparks.

Incompatible materials

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

**11. TOXICOLOGICAL INFORMATION**

**Acute toxicity****Information on likely routes of exposure**

<b>Product Information</b>	No adverse health effects expected if the chemical is handled in accordance with this Safety Data Sheet and the chemical label. Symptoms or effects that may arise if the chemical is mishandled and overexposure occurs are:
<b>Inhalation</b>	Irritating to respiratory system. May cause drowsiness or dizziness.
<b>Eye contact</b>	Causes serious eye damage.
<b>Skin contact</b>	Causes skin irritation.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.
<b>Symptoms</b>	Irritation/Corrosion. May cause redness and tearing of the eyes.

**Numerical measures of toxicity - Product Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
n-Butyl alcohol	= 700 mg/kg ( Rat ) = 790 mg/kg ( Rat )	= 3402 mg/kg ( Rabbit ) = 3400 mg/kg ( Rabbit )	> 8000 ppm ( Rat ) 4 h

See section 16 for terms and abbreviations

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Irritating to skin.
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.
<b>Respiratory or skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Non-mutagenic (bacteria and/or yeast).
<b>Carcinogenicity</b>	No information available.
<b>Reproductive toxicity</b>	No information available.
<b>STOT - single exposure</b>	May cause respiratory irritation. May cause drowsiness or dizziness.
<b>STOT - repeated exposure</b>	No information available.
<b>Aspiration hazard</b>	No information available.
<b>Chronic effects:</b>	For n-Butanol: Evidence from animal tests indicate that repeated or prolonged exposure at concentrations of 200 ppm and above produces corneal inflammation, blurring of vision, watering of the eyes and photophobia (intolerance to light).

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

**Ecotoxicity** Keep out of waterways.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
n-Butyl alcohol	EC50: >500mg/L (96h, <i>Desmodesmus subspicatus</i> ) EC50: >500mg/L (72h, <i>Desmodesmus subspicatus</i> )	LC50: 1730 - 1910mg/L (96h, <i>Pimephales promelas</i> ) LC50: =1740mg/L (96h, <i>Pimephales promelas</i> ) LC50: 100000 - 500000µg/L (96h, <i>Lepomis macrochirus</i> ) LC50: =1910000µg/L (96h, <i>Pimephales promelas</i> )	-	EC50: =1983mg/L (48h, <i>Daphnia magna</i> ) EC50: 1897 - 2072mg/L (48h, <i>Daphnia magna</i> )

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** No information available.

Chemical name	Partition coefficient
n-Butyl alcohol	0.785

**Mobility**

**Mobility in soil** No information available.

**Other adverse effects****13. DISPOSAL CONSIDERATIONS****Waste treatment methods**

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

**14. TRANSPORT INFORMATION****ADG**

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

**UN number** 1120  
**Proper shipping name** BUTANOLS  
**Hazard class** 3  
**Packing group** III  
**Hazchem code** •2Y

**IATA**

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

**UN number** 1120  
**UN proper shipping name** BUTANOLS



Transport hazard class(es) 3  
Packing group III

**IMDG**

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN number 1120  
UN proper shipping name BUTANOLS  
Transport hazard class(es) 3  
Packing group III  
IMDG EMS Fire F-E  
IMDG EMS Spill S-D

**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Australia**

Classified as dangerous goods in accordance with the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG).

Classified as a hazardous chemical in accordance with the criteria of Safe Work Australia - Globally Harmonized System (GHS).

See section 8 for national exposure control parameters

Poisons Schedule (SUSMP) None allocated

**Major hazard (accident/incident planning) regulation**

Verify that license requirements are met

**Hazardous chemical**

Liquids that meet the criteria for Class 3 Packing Group II or III

Threshold quantity (T) \_

50 000

**National pollutant inventory**

Subject to reporting requirement

Chemical name	National pollutant inventory
n-Butyl alcohol - 71-36-3	20 MW Threshold category 2b total 60000 MWH Threshold category 2b total 1 tonne/h Threshold category 2a total 25 tonne/yr Threshold category 1a total 400 tonne/yr Threshold category 2a total 2000 tonne/yr Threshold category 2b total

**International Inventories****AICS**

This material is listed on the Australian Inventory of Industrial Chemicals.

**NZIoC**

This material is listed on the New Zealand Inventory of Chemicals.

**Legend:**

- Australian Inventory of Industrial Chemicals

**International Regulations**

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

## 16. OTHER INFORMATION

Supplier Safety Data Sheet 03/ 2021

**Reason(s) For Issue:** 5 Yearly Revised Primary SDS

**Issuing Date:** 08-Jul-2021

This Safety Data Sheet has been prepared by Ixom Operations Pty Ltd (Toxicology and SDS Services).

**Revision Note:**

The symbol (\*) in the margin of this SDS indicates that this line has been revised.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

**Key literature references and sources for data used to compile the SDS**

EPA (Environmental Protection Agency)  
 Acute Exposure Guideline Level(s) (AEGL(s))  
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
 U.S. Environmental Protection Agency High Production Volume Chemicals  
 Food Research Journal  
 Hazardous Substance Database  
 International Uniform Chemical Information Database (IUCLID)  
 Japan GHS Classification  
 Australian Industrial Chemicals Introduction Scheme (AICIS)  
 NIOSH (National Institute for Occupational Safety and Health)  
 National Library of Medicine's ChemID Plus (NLM CIP)  
 National Library of Medicine's PubMed database (NLM PUBMED)  
 National Toxicology Program (NTP)  
 New Zealand's Chemical Classification and Information Database (CCID)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 RTECS (Registry of Toxic Effects of Chemical Substances)  
 World Health Organization

**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 This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Ixom representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

**End of Safety Data Sheet**