



Infosafe No™	1CH1H	Issue Date : June 2019	RE-ISSUED by CHEMSUPP
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Product Name : **n-BUTYL ALCOHOL**

Classified as hazardous

**1. Identification**

<b>GHS Product Identifier</b>	n-BUTYL ALCOHOL	
<b>Company Name</b>	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)	
<b>Address</b>	38 - 50 Bedford Street GILLMAN SA 5013 Australia	
<b>Telephone/Fax Number</b>	Tel: (08) 8440-2000 Fax: (08) 8440-2001	
<b>Emergency phone number</b>	CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)	
<b>Recommended use of the chemical and restrictions on use</b>	Solvent for fats, waxes, resins, shellac, varnish, manufacture of lacquers, rayon, detergents, esters, glycol ethers, butyl acrylate and other butyl compounds, hydraulic fluids, dehydration agent, plasticisers, dyeing agent, intermediate and laboratory reagent.	
<b>Other Names</b>	<u>Name</u>	<u>Product Code</u>
	n-BUTYL ALCOHOL AR	BA012
	1-Butanol, Butan-1-ol, Propyl carbinol, 1-Hydroxybutane, Butyric alcohol, Butyl alcohol, n-Butanol	
	n-BUTYL ALCOHOL TG	BT012

**Other Information**

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

**2. Hazard Identification**

<b>GHS classification of the substance/mixture</b>	Eye Damage/Irritation: Category 1 Flammable Liquids: Category 3 Acute Toxicity - Oral: Category 4 Specific Target Organ Toxicity - Single Exposure Category 3 Skin Corrosion/Irritation: Category 2
<b>Signal Word (s)</b>	DANGER
<b>Hazard Statement (s)</b>	H226 Flammable liquid and vapour. H302 Harmful if swallowed. H315 Causes skin irritation. H318 Causes serious eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness.
<b>Pictogram (s)</b>	Flame, Corrosion, Exclamation mark,

**Precautionary statement – 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.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.



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**Precautionary statement – Response**

P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P332+P313 If skin irritation occurs: Get medical advice/attention.  
P362 Take off contaminated clothing and wash before reuse.  
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician 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.  
P310 Immediately call a POISON CENTER or doctor/physician.  
P370+P378 In case of fire: Use foam, dry chemical, CO2 or water spray for extinction.  
P403+P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.  
P501 Dispose of contents/container to an approved waste disposal plant.

**Precautionary statement – Storage  
Precautionary statement – Disposal****3. Composition/information on ingredients**

Chemical Liquid

**Characterization****Ingredients**

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>	<u>Hazard Symbol</u>	<u>Risk Phrase</u>
Butan-1-ol	71-36-3	100 %		

**4. First-aid measures**

**Inhalation** If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Consult a physician.

**Ingestion** Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

**Skin** Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical advice if effects persist.

**Eye contact** If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention.

**First Aid Facilities** Maintain eyewash fountain and safety shower in work area.

**Advice to Doctor** Treat symptomatically based on judgement of doctor and individual reactions of the patient.

**Other Information** For advice, contact the National Poisons Information Centre (Phone Australia 13 11 26; New Zealand 0800 764 766) or a doctor.

**5. Fire-fighting measures**

**Hazards from Combustion Products** Oxides of carbon.

**Specific Methods** Caution: Use of water spray when fighting fire may be inefficient.  
Small fire: Use foam, dry chemical, CO2 or water spray.  
Large fire: Use foam, fog or water spray - Do NOT use water jets.  
If safe to do so, move undamaged containers from the fire area. Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

**Specific hazards arising from the chemical** HIGHLY FLAMMABLE: This product has a low flash point. Will be easily ignited by heat, sparks or flames at ambient temperatures. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Many vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Many liquids are lighter than water. Containers may explode on heating. Fire will produce irritating, poisonous or corrosive gases. Vapours from run-off may create an explosion hazard.

**Hazchem Code** •2Y

**Precautions in connection with Fire** Wear SCBA and fully encapsulating, gas-tight suit when handling these substances. Structural firefighter's uniform is NOT effective for these materials.



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**6. Accidental release measures**

<b>Spills &amp; Disposal</b>	Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 50m. All equipment used when handling the product must be earthed. Do NOT touch or walk through spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas. Vapour-suppressing foam may be used to control vapours. Water spray may be used to knock down or divert vapour clouds. Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tool to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
<b>Personal Precautions</b>	Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Remove all possible sources of ignition in the surrounding area. Do not breathe fumes, vapour, gas. Evacuate the area of all non-essential personnel.
<b>Personal Protection</b>	Wear protective clothing specified for normal operations (see Section 8)

**7. Handling and storage**

<b>Precautions for Safe Handling</b>	Avoid prolonged or repeated contact with skin and eyes. Avoid breathing vapour, spray or mists. Use in well ventilated areas away from all ignition sources. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Keep material away from sparks, flames and other ignition sources. Keep away from incompatibles. Ensure all electrical equipment is flameproofed.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep containers closed at all times. Keep in a cool, dry, well-ventilated place. Store away from sources of heat or ignition.

**8. Exposure controls/personal protection**

Occupational exposure limit values	Name	STEL		TWA		Footnote
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
	Butan-1-ol			152	50	Peak Limitation
<b>Other Exposure Information</b>	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. A time weighted average (TWA) has been established for Butan-1-ol (Safe Work Australia) of 152 mg/m <sup>3</sup> , (50 ppm). STEL: Peak limitation - n-Butyl alcohol - Safe Work Australia. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. SK notice - Absorption through skin may be a significant route of exposure.					
<b>Appropriate engineering controls</b>	Provide sufficient ventilation to ensure that the working environment is below the TWA (time weighted average). Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flame proof exhaust ventilation system is required. Refer to AS 1940-The storage and handling of flammable and combustible liquids and AS 2430-Explosive gas atmospheres for further information concerning ventilation requirements.					
<b>Respiratory Protection</b>	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.					
<b>Eye Protection</b>	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.					
<b>Hand Protection</b>	Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments.					



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<b>Personal Protective Equipment</b>	Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.
<b>Footwear</b>	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
<b>Body Protection</b>	Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
<b>Hygiene Measures</b>	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

**9. Physical and chemical properties**

<b>Form</b>	Liquid
<b>Appearance</b>	Clear, colourless liquid.
<b>Odour</b>	Vinous or pungent, sweet, rancid odour; characteristic.
<b>Melting Point</b>	-89 °C
<b>Boiling Point</b>	117.7 °C
<b>Solubility in Water</b>	Soluble in water (77g/L at 20°C)
<b>Solubility in Organic Solvents</b>	Soluble in alcohol, ether and most other organic solvents.
<b>Specific Gravity</b>	0.81 (@ 20 °C)
<b>pH</b>	7 (70 g/l, H <sub>2</sub> O, 20 °C)
<b>Vapour Pressure</b>	4 mm Hg (5 hPa) @ 20 °C
<b>Vapour Density (Air=1)</b>	2.6
<b>Evaporation Rate</b>	0.4 (BuAc=1)
<b>Viscosity</b>	3.0 mPa.s (3.0 cP, @ 20 °C)
<b>Partition Coefficient: n-octanol/water</b>	Log P(octanol/water) = 0.88
<b>Flash Point</b>	29 °C (closed cup); 36.1 °C (open cup).
<b>Flammability</b>	Flammable.
<b>Auto-Ignition Temperature</b>	340 - 343 °C
<b>Flammable Limits - Lower</b>	1.4 Vol%
<b>Flammable Limits - Upper</b>	11.3 Vol%
<b>Molecular Weight</b>	74.12
<b>Other Information</b>	Dielectric constant: 17.8 (20 °C) Dipole moment: 1.66 Debye (20 °C) Refractive index: 1.3993 (589 nm, 20 °C) Saturated vapour concentration: 20 g/m <sup>3</sup> (20 °C); 39 g/m <sup>3</sup> (30 °C)

**10. Stability and reactivity**

<b>Chemical Stability</b>	Stable under ordinary conditions of storage.
<b>Conditions to Avoid</b>	Heat, flames, ignition sources and incompatibles.
<b>Incompatible Materials</b>	Aluminium and alkali metals, alkaline earth metals, bases, strong acids, halogens, reducing materials, chromium trioxide, combustible materials, and strong oxidising agents such as nitrates, perchlorates, peroxides.
<b>Hazardous Decomposition Products</b>	Carbon dioxide and carbon monoxide.
<b>Possibility of hazardous reactions</b>	Reacts with aluminium at elevated temperatures. Contact with strong oxidising agents may cause fire and explosion. May form explosive mixtures with air. May burn near invisible flame.



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<b>Hazardous Polymerization</b>	Will not occur.
<b>Other Information</b>	Alcohols may interact synergistically (enhanced effect) with chlorinated solvents, aromatic hydrocarbons or dithiocarbamates.

**11. Toxicological Information**

<b>Acute Toxicity - Oral</b>	LD50 (rat): 790 mg/kg (RTECS)
<b>Acute Toxicity - Dermal</b>	LD50 (rabbit): 3400 mg/kg (RTECS).
<b>Acute Toxicity - Inhalation</b>	LC50 (rat): 8000 ppm/4h.
<b>Ingestion</b>	Harmful if swallowed. May have a narcotic effect. May cause abdominal discomfort, nausea, headaches, dizziness, vomiting and diarrhea. The liquid is harmful if aspirated into the lungs. Long term effects include central nervous system depression, gastrointestinal disturbances and ear, blood, liver and kidney problems.
<b>Inhalation</b>	May be harmful if inhaled. Vapour is irritating to mucous membranes and respiratory tract. Inhalation of vapour can result in headaches, difficult breathing, coughing, dizziness, drowsiness and possible nausea. May be absorbed into the bloodstream with symptoms similar to ingestion. Few cases of butyl alcohol poisoning (in industries) have been reported due to the low volatility. Inhalation of high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and, if exposure is prolonged, unconsciousness.
<b>Skin</b>	May be harmful if absorbed by skin. Causes skin irritation. An irritant to the skin, causing a loss of natural oils. Other symptoms include crackling of the skin, drying, itching, scaling, degreasing of the skin, tingling sensation, reddening or occasionally blistering. Can be absorbed through skin with symptoms paralleling those from ingestion.
<b>Eye</b>	Causes severe eye irritation. Vapour concentrations above 50 ppm can irritate the eyes. Serious corneal injury (chemical burns) may occur from both the liquid and vapour. Risk of serious damage to eyes. Vapours can be irritating, causing tearing, redness, watering, itching, and pain, Splashes cause inflammation and blurred vision.
<b>Carcinogenicity</b>	No evidence of carcinogenic properties.
<b>Chronic Effects</b>	Toxic on prolonged inhalation. Can be absorbed through the skin with resultant toxic effects. There is evidence that long-term repeated exposure to vapour concentrations greater than 50 ppm may result in some loss of hearing. Repeated or prolonged skin contact may cause dermatitis. Prolonged or over exposure can cause hearing loss, sense of balance, and affect the liver and kidney organs.
<b>Mutagenicity</b>	No evidence of mutagenic properties.

**12. Ecological information**

<b>Persistence and degradability</b>	Readily biodegradable.
<b>Bioaccumulative Potential</b>	No appreciable bioaccumulation is to be expected (log P(o/w) 1-3).
<b>Environmental Protection</b>	Avoid contaminating waterways.
<b>Acute Toxicity - Daphnia</b>	EC50 (Daphnia magna): 1983 mg/l/48 h.
<b>Other Information</b>	Distribution: log P(o/w): 0.88

**13. Disposal considerations**

<b>Disposal Considerations</b>	Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and disposed of according to relevant local, state and federal government regulations.
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**14. Transport information**

<b>Transport Information</b>	Dangerous goods of Class 3 (Flammable Liquid) are incompatible in a placard load with any of the following: Class 1, Class 2.1, if both the Class 3 and Class 2.1 dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane, Class 7.
<b>U.N. Number</b>	1120
<b>UN proper shipping name</b>	BUTANOLS





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<b>Transport hazard class(es)</b>	3
<b>Hazchem Code</b>	•2Y
<b>Packaging Method</b>	3.8.3RT1
<b>Packing Group</b>	III
<b>EPG Number</b>	3A1
<b>IERG Number</b>	16

**15. Regulatory information**

<b>Regulatory Information</b>	Listed in the Australian Inventory of Chemical Substances (AICS). Not listed under WHS Regulation 2011, Schedule 10 - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.
<b>Poisons Schedule</b>	Not Scheduled

**16. Other Information**

<b>Literature References</b>	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Chemical Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
<b>Contact Person/Point</b>	Paul McCarthy Ph. (08) 8440 2000 <b>DISCLAIMER STATEMENT:</b> All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Chem-Supply accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
<b>Empirical Formula &amp; Structural Formula</b>	C4 H10 O ...End Of MSDS...

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