

SAFETY DATA SHEET

Isopropyl Alcohol

SECTION 1: IDENTIFICATION OF MATERIAL AND SUPPLIER

Product Name:	Isopropyl Alcohol
Other Names:	2-Propanol, 1-methylethanol, 1-methylethyl alcohol, 2-hydroxypropane, dimethyl carbinol, ethyl carbinol, hydroxypropane, I-propanol, isoethylcarbinol, propan-2-ol, sec-propanol, Isopropanol
Recommended Use:	Solvent
Applicable In:	Australia
Supplier:	ACB Group (ABN 79 724 186 134)
Address:	118 Swann Drive, Derrimut Victoria-3030
Telephone:	+ 61 3 93690220
Email Address:	info@acbgroup.com.au
Facsimile:	+61 3 93690883
Emergency Phone Number:	000 Fire Brigade and Police (available in Australia only).
Poisons Information Centre:	13 11 26 (available in Australia only).

This Material Safety Data Sheet (MSDS) is issued by the Supplier in accordance with National standards and guidelines from the Australian Safety and Compensation Council (ASCC, formerly National Occupational Health and Safety Commission - NOHSC). The information in it must not be altered, deleted or added to. The Supplier will not accept any responsibility for any changes made to its MSDS by any other person or organization. The Supplier will issue a new MSDS when there is a change in product specifications and/or ASCC standards, codes, guidelines, or Regulations.

SECTION 2: HAZARD IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE: Classified as **Hazardous** according to the criteria of the Australian Safety and Compensation Council ASCC (formerly NOHSC) Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

Isopropyl Alcohol is **classified** as **Dangerous** Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

GHS Classification:

Flammable Liquid (category 2)
Serious eye damage/ eye irritation (category 2A)
Target Organ Systemic Toxicant – Single Exposure (category 3)

GHS LABEL ELEMENTS

Symbol (s)



Signal Word: Danger

Hazard Statements:

HAZARDS STATEMENT:

H225: Highly flammable liquid and vapour

H319: Causes serious eye irritation

H336: May cause drowsiness and dizziness

PRECAUTIONARY STATEMENT(s)

Prevention

Prevention

P210: Keep away from heat/sparks/open flames/hot surfaces. – No Smoking.

P233: Keep container tightly closed.

P235: Keep cool

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.

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P264: Wash hands thoroughly after handling.

P280: Wear protective gloves/protective clothing/eye protection/ face protection.

P281: Use personal protective equipment as required.

Response

P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

Response

P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P353: IF IN EYES Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE or doctor/physician.

P312: Call a POISON CENTRE or doctor/physician if you feel unwell.

P322: Specific measures (see details on this label).

P321: Specific treatment (see details on label).

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

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

P363: Wash contaminated clothing before reuse.

P362: Take of contaminated clothing and wash before reuse.

P370 +P378: In case of fire: Use appropriate media for extinction.

Storage

Disposal

Disposal

P501: Dispose of contents and container to appropriate waste site of reclaimer in accordance with local and national regulations.

EC Hazards

EUH066: Repeated exposure may cause skin dryness or cracking.

Other Hazards which do not result in classification

None

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Classification of components according to GHS

Chemical name	Synonyms	CAS	Hazard Class (Category)	Hazard Statement	Conc.
Isopropyl Alcohol	IPA, 2-propanol	67-63-0	Flam. Liq., 2 Eye irrit., 2A STOT SE., 3	H225 H319 H336	>99.0 %W

SECTION 4: FIRST AID MEASURES

Information:

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

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

Eyes: Immediately flush eyes with large amounts of water for at least 15minutes while holding eyelids open. Transport to the nearest medical facility for additional treatment.

Skin: Remove contaminated clothing, wash off with plenty of water and soap. Consult a physician if any symptoms arise.

Inhaled: Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

First Aid Facilities: Eye wash fountains and safety showers should be available for emergency use.

Advice to Doctor: The most important known symptoms and effects are described in the labelling and in section 11

Most important symptoms and effects acute and delayed

EXPOSURE TO HIGH CONCENTRATIONS: Coughing, dry/sore throat, central nervous system depression. Dizziness. Headache Narcosis.

AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression, headache, dilation of the blood vessels, low arterial pressure, nausea, vomiting, abdominal pain, disturbed motor response, disturbances of consciousness.

FOLLOWING SYMPTOMS MAY APPEAR LATER: Body temperature fall, slowing respiration.

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin, dry skin, itching, cracking of the skin, skin rash/inflammation, impaired memory.

SECTION 5: FIRE FIGHTING MEASURES

Specific Hazards:

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO₂)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapour is heavier than air and can travel considerable distance to a source of ignition and flashback
Vapours may form explosive mixtures with air

Suitable extinguishing media:	Water spray, polyvalent foam. Alcohol-resistant foam. BC powder. Carbon dioxide.
Unsuitable extinguishing media	Solid fire jet is ineffective as extinguishing medium.
Special protective precautions and equipment for fire fighters:	Wear full protective clothing and self-contained breathing apparatus.
Other advice	Cool containers / tanks with water spray. Dike and collect water used to fight fire. Water run-off can cause environmental damage. Keep people away from and upwind of fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Avoid contact with spilled or released material. For guidance on selection of personal protective equipment see chapter 8 of this Material Safety Data Sheet.

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. For personal protection see section 8.
Environmental procedures	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and material 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 according to local regulations (see section 13).
Additional advice	: Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Local authorities should be advised if significant spillages cannot be contained. The vapor is heavier than air, spreads along the ground and distant ignition is possible. See Chapter 13 for information on disposal. For guidance on selection of personal protective equipment see chapter 8 of this Material Safety Data Sheet. For guidance on disposal of spilled material see chapter 13 of this Material Safety Data Sheet.

SECTION 7: HANDLING AND STORAGE

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. Refer to guidance under handling section.
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 open containers with care.
Unsuitable material	Steel with rubber inner lining. Aluminium.
Suitable material	stainless steel, mild steel, carbon steel, copper, nickel, bronze, glass, Teflon, polyethylene, polypropylene, zinc.
Incompatible material	Strong acids and bases, strong oxidising agents

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits

Material	Type	ppm	mg/m3
Isopropyl alcohol	STEL	400	980
Isopropyl alcohol	TWA	400	980

Biological Exposure Index (BEI):

No data available

ENGINEERING CONTROLS

- Ventilation:** Provide sufficient ventilation to keep airborne levels below the exposure limits. Where vapours or mists are generated, particularly in enclosed areas, and natural ventilation is inadequate, a flameproof exhaust ventilation system is required. Refer to AS 1940 - The storage and handling of flammable and combustible liquids and AS/NZS 2430.3.1:1997: Classification of hazardous areas - Examples of area classification - General, for further information concerning ventilation requirements.
- Appropriate Engineering Controls:** The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include: Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits. Use sealed systems as far as possible. Firewater monitors and deluge systems are recommended. Eye washes and showers for emergency use.

PERSONAL PROTECTION

- Hand Protection** Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739, AS/NZS:2161) made from the following materials may provide suitable chemical protection: Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

- Skin Protection:** Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.
- Eye Protection:** Safety glasses with side shields, goggles or full-face shield as appropriate recommended. Final choice of appropriate eye/face protection will vary according to individual circumstances i.e. methods of handling or engineering controls and according to risk assessments undertaken. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications..
- Respiratory Protection:** If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. Select a filter suitable for organic gases and vapors [Type A boiling point > 65°C (149°F)] meeting EN14387. Where respiratory protective equipment is required, use a full-face mask. Where air-filtering respirators are unsuitable (e.g., airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
- Body protection:** Chemical resistant gloves/gauntlets, boots, and apron. Where risk of splashing or in spillage clean up, use chemical resistant one-piece overall with integral hood. Wear antistatic and flame retardant clothing.
- Smoking & Other Dusts** Smoking must be prohibited in all areas where this product is used - see safety information on flammability.
- Thermal Hazards** Not Applicable
- Monitoring Methods** Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate. Examples of sources of recommended exposure measurement methods are given below or contact the supplier.
- Monitoring Methods** Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapor.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance Colourless clear liquid
Odour Alcohol odour, stuffy odour, mild odour.
Odour Threshold: 3-610ppm
Molecular weight: 60.10 g/mol
Solubility Completely soluble in water, ethanol and ether.
Specific Gravity (H₂O=1) at 20°C 785- 793 kg/m³
pH Value: No data available
Vapour Pressure 44 hPa at 20°C
Viscosity: 0.0020 Pa's @ 25°C
Vapour Density 2.1 (Air=1) @ 20°C
Flash Point 12°C
Auto-ignition Temperature 399°C
Flammable Limits UEL Upper explosion limit 13% (V)
Flammable Limits LEL Lower explosion limit 2% (V)
Boiling Point / Range: 82°C @ 1013hPa
Freezing Point -88°C @ 1013hPa

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal conditions.
Incompatible Materials:	Alkali metals, Ammonia, Oxidizing agents, Peroxides
Conditions to avoid:	Heat, sparks, flame and build-up of static electricity, direct sunlight.
Hazardous Decomposition Products:	Thermal decomposition may result in the release of toxic and/or irritating fumes including carbon monoxide and carbon dioxide.
Hazardous Reactions:	Hazardous polymerisation will not occur. Vapours may form explosive mixture with air.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 5045 mg/kg

LD50 Dermal – rabbit - > 12870 mg/kg

LC50 Inhalative – rat – 73 mg/L (4hr)

Skin Irritation or corrosion

No skin irritation on rabbit (OECD 44 & OECD 45)

Serious eye damage/irritation

May cause serious damage/irritation to the eye

Respiratory or skin sensitisation

Not classified

Germ cell mutagenicity

Not classified

Carcinogenity

Not classified

Reproductive toxicity

Not classified

Specific target organ toxicity

In high quantities single exposure can depress central nervous system,

Aspiration hazard

Not classified

Symptoms/injuries after inhalation

EXPOSURE TO HIGH CONCENTRATION: Coughing, dry/sore throat, central nervous system depression, dizziness, headache, narcosis.

Symptoms/injuries after skin contact

Dry skin

Symptoms/injuries after eye contact

Irritation of the eye tissue

Symptoms/injuries after ingestion

AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression, headache, dialation of the blood vessels, low arterial pressure, nausea, vomiting, abdominal pain, disturbed motor response, disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Body temperature fall, slowing respiration.

Chronic symptoms

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin, dry skin, itching, cracking of the skin. Skin rash/inflammation, impaired memory.

SECTION 12: ECOLOGICAL INFORMATION

Eco-toxicity:	Ground water pollutant. Not harmful to fishes, invertebrates nor to algae. It does show inhabitation of activated sludge.
Persistence and Degradability:	Low potential for bioaccumulation. Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions.
Mobility:	No test data available.
Note	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), not very persistent nor bioaccumulating. Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of waste according to federal, EPA, state and local regulations. Labels should not be removed from containers until they have been cleaned. Do not cut, puncture or weld on or near containers. Empty containers may contain hazardous residues. Contaminated containers must not be treated as household waste. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate. Do not incinerate closed containers.

SECTION 14: TRANSPORT INFORMATION

Proper Shipping Name:	Isopropyl Alcohol
UN number:	1219
DG Class:	3 Flammable
Subsidiary Risk 1:	None Allocated
Packaging Group:	II
HAZCHEM code:	2YE
Marine Pollutant:	No
Special Precautions for User:	Refer to incompatibilities in section 7 and stability and reactivity information in section 10.
ADDITIONAL TRANSPORT REQUIREMENTS:	Nil

SECTION 15: REGULATORY INFORMATION

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Chemical inventory status

Listed in AICS, DLS, INV (CN), ENCS (JP), TSCA, EINECS, KECI (KR) and PICCS (PH)

SECTION 16: OTHER INFORMATION

For further information on this product, please contact:

ACB Group (ABN 79 724 186 134)
118 Swann Drive, Derrimut Victoria-3030
Phone: +61 3 93690220
Fax: + 61 3 93690883

ADDITIONAL INFORMATION

Australian Standards References:

AS 1020	The Control of undesirable static electricity.
AS 1076	Code of Practice for selection, installation and maintenance of electrical apparatus and associated equipment for use in explosive atmospheres (other than mining applications) – Parts 1 to 13.
AS/NZS 1336	Recommended Practices for Occupational Eye Protection
AS/NZS 1715	Selection, Use and Maintenance of Respiratory Protective Devices
AS/NZS 1716	Respiratory Protective Devices
AS 1940	The Storage and Handling of Flammable and Combustible Liquids.
AS 2161	Industrial Safety Gloves and Mittens (excluding electrical and medical gloves)
AS 2380	Electrical equipment for explosive atmospheres – Explosion Protection Techniques (Parts 1 to 9).
AS 3000	Electrical installations (known as the Australian/New Zealand Wiring Rules).

Other References:

NOHSC:2011(2003)	National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition, April 2003, National Occupational Health and Safety Commission.
NOHSC; 2012 (1994)	National Code of Practice for the Labeling of Workplace Substances, March 1994, Australian Government Publishing Service, Canberra.
NES	National Occupational Exposure Standards for workplace Atmospheric Contaminants (NES) Australian Safety and Compensation Council, ASCC (Formerly NOHSC) 1995 as amended.
ADG Code 6 th Edition	Australian Dangerous Goods Code 6 th Edition

AUTHORISATION

Reason for Issue: 5 year review
Authorised by: ACB Technical Director
Date of Issue: 14 December 2015
Expiry Date: December 2020

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END OF MSDS