Safety Data Sheet

Iso Propanol Alcohol (IPA)

Section 1: Identification of the material and supplier

Product name:	**Iso Propanol**
Other names:	Rubbing Alcohol, IPA, Propanol-2, Propan-2-ol, Isopropyl Alcohol
Product Codes/Trade Names:	IPA
Recommended use:	Organic solvent, de-icing agent, dehydrating agent, chemical intermediate
Applicable in:	Australia
Supplier:	Labtech Service & Supplies
Address:	PO Box 453, Windsor NSW 2756
Telephone:	02 8064 2333
Email address:	info@labtech.net.au
Web site:	www.labtech.com.au
Facsimile:	02 8064 7813
Emergency phone number:	000 Fire Brigade and Police (available in Australia only) 1800 774 557 Transpacific Emergency Response (available in Australia only)
Poisons Information Centre:	13 11 26 (available in Australia only)

This Safety Data Sheet (SDS) is issued by the Supplier in accordance with National Standards and Guidelines from Safe Work Australia (SWA – formerly ASCC/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 SDS by any other person or organization. The Supplier will issue a new SDS when there is a change in product specifications and/or Standards, Codes, Guidelines, or Regulations.

Section 2: Hazard identification

Statement of hazardous nature: Classified as **Hazardous** according to the Approved Criteria For Classifying Hazardous Substances [NOHSC:1008] 3rd Edition.

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

Risk Phrases	Safety Phrases
R11 - Highly flammable. R36 - Irritating to eyes. R67 - Vapours may cause drowsiness and dizziness.	S2 - Keep out of reach of children. S7 - Keep container tightly closed. S16 - Keep away from sources of ignition - No smoking. S24/25 - Avoid contact with skin and eyes. S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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Section 3: Composition / Information on ingredients

Chemical Name:	Synonyms	Proportion:	CAS Number:
Iso Propanol	Isopropyl Alcohol; Propan-2-ol	100%	67-63-0

Section 4: First aid measures

If poisoning occurs contact a doctor or Poisons Information Centre.	
Swallowed:	If a very minor amount has been accidentally swallowed, then if conscious, rinse mouth with water and then dilute stomach contents by giving large amounts of water. Seek medical attention. Do not attempt to induce vomiting or give anything by mouth to an unconscious person. If person vomits, place person on their side in recovery position.
Eyes:	Flush eye with flowing water for a minimum of 15 minutes. Seek medical attention promptly if irritation persists or any loss of vision occurs.
Skin:	Immediately remove contaminated clothing. Wash skin with water. Launder contaminated clothing before re-use.
Inhaled:	Remove promptly to fresh air. If there are signs of drunkenness (intoxication or inebriation) or respiratory irritation, dizziness, nausea or headache occurs, seek immediate medical attention. Treat unconsciousness by placing the person in the coma position. Apply artificial respiration if breathing stops.
First Aid Facilities:	Safety showers, eye wash stations and First Aid kits.
Advice to Doctor:	Treat symptomatically as for any narcotic substance.

Section 5: Fire fighting measures

Flammability:	Highly flammable liquid. May form flammable mixtures with air. Burns with a colourless flame. The vapour is heavier than air and may travel along the ground; distant ignition and flash back are possible. Run off to sewers and drains may cause explosions. Isolate for at least 800 metres in all directions if tanks or tankers are involved. The use of compressed air for filling, discharging, mixing or handling is prohibited due to the vapour hazard. All vessels must be earthed to avoid generation of static charges when agitating or transferring solvents. Avoid all ignition sources. Intrinsically safe equipment is necessary in areas where this chemical is being used.
Suitable extinguishing media:	Alcohol resistant foam is the preferred firefighting medium, but if it is not available, fine water spray can be used. In the absence of these, dry chemical or carbon dioxide may be used.
Hazards from combustion products:	Burning can produce carbon monoxide and/or carbon dioxide.
Special protective precautions and equipment for fire fighters:	Highly flammable liquid. Contain spill. Full fire kit and breathing apparatus is required. Use water to cool exposed containers. Heating can cause expansion or decomposition leading to violent rupture of containers. If safe to do so, remove containers from path of fire. Spills and leaks may be washed away with copious volumes of water, fog or spray. Prevent run-off from entering drains and watercourses.
HAZCHEM Code:	●2YE

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Section 6: Accidental release measures

Emergency Procedure:	In the event of a spill eliminate all sources of ignition and take measures to prevent static discharge. No smoking. Use water spray to disperse vapour. Clear area of all personnel not directly involved in the clean up. All personnel involved in the containment and disposal procedures to wear protective equipment as described in Section 8 to prevent skin and eye contamination and inhalation of vapours. Ventilate area well and ensure the atmosphere is safe before personnel return to the work area.
Containment Procedure:	Stop and contain the spill for salvage or absorb in inert absorbent material (e.g. soil, sand, vermiculite) for disposal by an approved method. Prevent run-off into drains and waterways. If contamination of sewers or waterways has occurred, advise the local emergency services.
Clean Up Procedure:	Wash the cleaned-up area with copious volumes of water to remove any trace amounts of product. Spills can be converted to non-flammable mixtures by dilution with water. Non-returnable containers should be de-gassed prior to disposal. Dispose of all waste containers and used drums in accordance with local authority guidelines.

Section 7: Handling and storage

Handling:	Use in well ventilated areas away from all ignition sources. Intrinsically safe equipment only must be used in areas where this chemical is being used. The use of compressed air for filling, discharging, mixing or handling is prohibited due to the vapour hazard. Containers must be earthed to avoid generation of static charges when agitating or transferring product.
Storage:	Store in tightly closed containers in cool, dry, isolated and well-ventilated areas away from heat, sources of ignition and incompatibles (see below). Store away from oxidizing agents. Keep containers closed at all times - check regularly for leaks. Do not eat, drink or smoke in areas of use or storage. Observe State Regulations concerning the storage and handling of Dangerous Goods. Store with all precautions required for handling flammable liquids. The requirement of Australian Standard AS 1940 should be observed in addition to AS 1020, AS 1076, AS 2380 and AS 3000. Empty containers retain residue (liquid and/or vapour) and are dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition.
Incompatibilities:	Not to be stored with explosives (Class 1), flammable gases in bulk (Class 2.1), poisonous gases (Class 2.3), spontaneously combustible substances (Class 4.2), oxidizing agents (Class 5.1), organic peroxides (Class 5.2), radioactive substances (Class 7). Exemptions may apply.

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Section 8: Exposure controls / Personal protection

Exposure Standards:	**Workplace Exposure Standards for Airborne Contaminants, Safe Work Australia**
	TWA - 400 ppm (983 mg/m^3) STEL - 500 ppm (1230 mg/m^3)
Notes:	All occupational exposures to atmospheric contaminants should be kept to as low a level as is workable (practicable) and in all cases to below the Exposure Standard. These exposure standards are guides to be used in the control of occupational health hazards. These 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. TWA (Time Weighted Average): the time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers. STEL (Short-Term Exposure Limit): the average airborne concentration over a 15-minute period which should not be exceeded at any time during a normal eight-hour work day.
Biological Limit Values:	No biological limit allocated.
ENGINEERING CONTROLS	
☐ **Ventilation:**	Local exhaust ventilation and/or mechanical (general) exhaust is recommended where vapours are likely to be generated. All such equipment must be intrinsically safe.
☐ **Special Consideration for Repair &/or Maintenance of Contaminated Equipment:**	Empty containers retain residue (liquid and/or vapour) and are dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. Vapour is heavier than air - prevent concentration in hollows or sumps. Do not enter confined spaces where vapour may have collected. Keep containers closed when not in use.
PERSONAL PROTECTION	
☐ **Personal Hygiene**	Protective clothing (gloves, coveralls, boots, etc.) should be worn to prevent skin contact. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.
☐ **Skin Protection:**	Avoid skin contact by the use of approved chemical resistant gloves and aprons - PVC or Neoprene (AS 2161).
☐ **Eye Protection:**	Avoid eye contact by wearing chemical goggles with side-shields or face-shield (AS/NZS 1336) whenever exposed to vapour or mist or if there is a risk of splashing liquid in the eyes. Safety showers with eye-wash should be provided in all areas where product is handled.
☐ **Respiratory Protection:**	None should be needed if engineering, storage and handling controls are

	adequate to ensure that atmospheric contamination is kept below the Exposure Standard. Where vapour concentrations are likely to approach or exceed the Exposure Standard, an approved organic vapour respirator (AS/NZS 1715 and 1716) must be worn. In high vapour concentrations, or in suspected oxygen-deficient atmospheres such as empty vessels or confined spaces, use air-supplied hood.
☐ **Thermal Protection:**	None should be needed under normal circumstances.
☐ **Smoking & Other Dusts**	Smoking must be prohibited in all areas where this product is used. See safety information on flammability above.

Section 9: Physical and chemical properties

Appearance:	Clear colourless liquid
Odour:	Perceptible alcohol odour detectable at 40 - 200 ppm
pH, at stated concentration:	Not available
Vapour Pressure:	33 mm Hg @ 20°C
Vapour Density:	2.1 (air = 1)
Boiling Point/range (°C):	82.4°C
Freezing/Melting Point (°C):	-89.5°C
Solubility:	Complete
Specific Gravity (H2O = 1):	0.79
FLAMMABLE MATERIALS	
☐ **Flash Point:**	12°C
☐ **Flash Point Method:**	Tag Closed Cup
☐ **Flammable (Explosive) Limit - Upper:**	12%
☐ **Flammable (Explosive) Limit - Lower:**	2%
☐ **Autoignition Temperature:**	399°C
ADDITIONAL PROPERTIES	
☐ **Evaporation Rate:**	230 (n-Butyl Acetate = 100)
☐ **Molecular Weight:**	60.09
☐ **Volatile Organic Compounds Content (VOC):** (as specified by the Green Building Council of Australia)	100%
☐ **% Volatiles:**	100%

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Section 10: Stability and reactivity

Chemical Stability:	Stable
Incompatible Materials:	Will react with strong oxidizing agents.
Conditions to avoid:	Heat, sparks, flame and build-up of static electricity.
Hazardous Decomposition Products:	Burning can produce carbon monoxide and/or carbon dioxide.
Hazardous Reactions:	None

Section 11: Toxicological information

Toxicological Data:

LD50/oral/rat; 4396 mg/kg

LD50/dermal/rat: 12870 mg/kg

LC50/inhalation/rat: 72.6 mg/l/4 h

Health effects information is based on reported effects in use from overseas and Australian reports.

Effects: Acute

Swallowed:	Unlikely under normal occupation exposures, but swallowing a minor amount may cause minor throat irritation and vomiting. Ingestion of larger amounts (about 100 grams or more) may cause stomach pains, cramps, nausea and vomiting. and narcotic effects, e.g. drowsiness, and lead to coma and death. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. Amounts over 130 grams may be fatal.
Eyes:	The vapour is irritating to the eyes at concentrations above 400 ppm. Direct eye contact with the liquid may cause eye irritation, including pain and redness.
Skin:	Brief exposures to vapour and liquid are not irritating, but prolonged contact (e.g. clothing saturated with product) can be irritating.
Inhaled:	Mild irritation to the nose, throat and upper respiratory tract can occur at concentrations above 400 ppm. Higher concentrations can cause drowsiness, headaches and unconsciousness.

Effects: Chronic

Prolonged or repeated skin contact may result in dermatitis due to its defatting action.

Additional Notes

Occupational exposure has not been reported as causing long-term effects.

Not listed as carcinogenic.

Some animal isopropanol exposure studies have noted increased liver and kidney weights in exposed animals but no observable relevant pathology. With particular relevance to the liver, this weight change may be considered to be more of a metabolic response rather than a toxic effect of the alcohol.

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Section 12: Ecological information

Eco-toxicity:	Toxicity to fish (acute): LC50/Fathead Minnow/: 11130 mg/l/96 h
Persistence and Degradability:	Degree of elimination: >90% Evaluation: readily biodegradable
Mobility:	No data available

Section 13: Disposal considerations

Suitable for incineration by approved agent under controlled conditions if permitted by local authorities, otherwise disposal must be in accordance with local waste authority requirements.

Product must be contained and not disposed to sewerage systems, drains or waterways. Advise flammable nature. Empty containers must be decontaminated by rinsing with water.

Section 14: Transport information

Proper Shipping Name:	ISOPROPANOL (ISOPROPYL ALCOHOL)
UN number:	1219
DG Class:	3
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

Poisons Schedule:	Not scheduled

Section 16: Other information

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:1008 (2004)	Approved Criteria for Classifying Hazardous Substances
NOHSC:10005 (1999)	List Of Designated Hazardous Substances, April 1999, National Occupational Health and Safety Commission, Sydney.
NOHSC:2007 (1994)	National Code of Practice for the Control of Workplace Hazardous Substances (Australian States have similar Codes of Practice in each State).
Model Code of Practice	Preparation of Safety Data Sheets for Hazardous Chemicals, December 2011, Safe Work Australia.
Model Code of Practice	Labelling of Workplace Hazardous Chemicals, December 2011, Safe Work Australia.
WES	Workplace Exposure Standards for Airborne Contaminants, December 2011, Safe Work Australia.
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th edition, National Transport Commission.
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS), 3rd revised edition, United Nations, New York and Geneva, 2009.
Safe Work Australia HSIS	http://hsis.safeworkaustralia.gov.au/HazardousSubstance

Authorisation

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END OF SDS