Infosafe No™ 1CH5R	Issue Date :February 2021	RE-ISSUED by ABS

Product Name **iso-PROPYL ALCOHOL**

Classified as hazardous

1. Identification

GHS Product Identifier	iso-PROPYL ALCOHOL
Company Name	AUSTRALIAN BIOSTAIN Pty Ltd
Address	24 - 28 Stratton Drive, Traralgon, Victoria, Australia, 3844 www.australianbiostain.com.au
Telephone/Fax Number	Tel: (03) 5176 2855
Emergency phone number	CHEMCALL (24 hours): 1800 127 406 (Australia) / +64-4-917-9888 (International)
E-mail Address	www.australianbiostain.com.au
Recommended use of the chemical and restrictions on use	Manufacture of acetone and its derivatives, glycerol, methyl isobutyl ketone, isopropylamine and isopropyl acetate; solvent for oils, alkaloids, gums, resins, phenolic varnishes, nitrocellulose lacquers, cement, primers, paints, inks, glass cleaners, liquid soaps, detergents and cosmetics; medical, pharmaceutical, veterinary and personal care products; as rubbing alcohol; as an antiseptic and disinfectant; as an aerosol solvent and in the manufacture of agricultural chemicals, pharmaceuticals, process catalysts, and solvents; de-icing agent for liquid fuels, dehydrating agent, denaturant, coolant in beer manufacture; preservative in extraction processes; foam inhibitor; synthetic food flavouring agent; as a heat-exchange medium and laboratory reagent.

Other Names

Name	Product Code
Propan-2-ol, sec-Propyl alcohol, Isopropanol, 2-Propanol, IPA	
iso-PROPYL ALCOHOL	AIP

Other Information

Australian Biostain 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 Australian Biostain 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 Australian Biostain 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

GHS classification of the substance/mixture	Eye Damage/Irritation: Category 2A Flammable Liquids: Category 2 Specific target organ toxicity Single Exposure Category 3 (respiratory tract irritation)
Signal Word (s)	DANGER
Hazard Statement (s)	H225 Highly flammable liquid and vapour. H319 Causes serious eye irritation. H336 May cause drowsiness or dizziness.
Pictogram (s)	Flame, 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 skin thoroughly after handling. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection.
Precautionary statement – Response	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. P337+P313 If eye irritation persists: Get medical advice/attention. P370+P378 In case of fire: Use alcohol resistant foam, dry chemical or dry sand for extinction.
Precautionary statement – Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
Precautionary statement – Disposal	P501 Dispose of contents/container in accordance to local, state and federal government regulations.

3. Composition/information on ingredients

Composition, information on ingredients

It occurs naturally as a metabolic product of a variety of microorganisms and as a flavour volatile in foodstuffs, primarily plant products.

Ingredients

Name	CAS	Proportion
Propan-2-ol (Isopropyl Alcohol)	67-63-0	70-100 %
Water to make a total of 100%	7732-18-5	0-30 %

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. Get medical aid if cough or other symptoms appear.

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 attention if irritation develops or persists.

Eye contact

Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

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 a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Specific Methods

Caution: Use of water spray when fighting fire may be inefficient.
Small fire: Use alcohol resistant foam, dry chemical, CO2 or water spray.
Large fire: Use alcohol resistant foam, fog or water spray - Do not use water jets.

	If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers. Alcohol resistant foam is a preferred firefighting medium, but if not available, fine water spray can be used.
Specific hazards arising from the chemical	HIGHLY FLAMMABLE: These liquids have a low flashpoint - Will be easily ignited by heat, sparks or flame. Vapours will form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Most 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 when heated. Fire will produce irritating, poisonous and/or corrosive gases. Vapours from runoff may create explosion hazard.
Hazchem Code	•2YE
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.

6. Accidental release measures

Spills & Disposal	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 or 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 tools to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Evacuate the area of all non-essential personnel. Avoid inhalation, contact with skin, eyes and clothing.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.

7. Handling and storage

Precautions for Safe Handling	Use in well ventilated areas away from all ignition sources. Intrinsically safe equipment only must be used in area 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.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed and in a cool, dry, well-ventilated place, away from direct sunlight and other sources of heat or ignition. Isolate from incompatible substances. 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. Empty containers retain residue (liquid and/or vapour and can be dangerous. Do not pressure cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity, or other sources or ignition.
Storage Regulations	Refer Australian Standard AS 1940-2017 'The storage and handling of flammable and combustible liquids'.
Unsuitable Materials	Various plastics, rubber.

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Propan-2-ol (Isopropyl Alcohol)	1230	500	983	400	

Other Exposure Information

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 Propan-2-ol (Safe Work Australia) of 983 mg/m³, (400 ppm). The corresponding STEL level is 1,230 mg/m³, (500 ppm). 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.
Appropriate engineering controls	Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.
Respiratory Protection	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.
Eye Protection	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.
Hand Protection	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. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.
Personal Protective Equipment	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.
Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Flame retardant antistatic protective clothing. 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.
Hygiene Measures	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

Form	Liquid
Appearance	Colourless, clear, mobile liquid.
Odour	Sharp, musty odour of rubbing alcohol.
Melting Point	-89 °C (100%)
Boiling Point	82 °C (100%)
Solubility in Water	Miscible in water.
Solubility in Organic Solvents	Soluble in all proportions in most organic solvents, such as ethanol, acetone, diethyl ether and chloroform; soluble in benzene.
Specific Gravity	0.79 (100%)
Vapour Pressure	43 hPa at 20 °C (100%)

Vapour Density (Air=1)	2.07 (air = 1). (100%)
Evaporation Rate	1.5 (butyl acetate = 1); 11.0 (diethyl ether = 1).
Odour Threshold	Reported values vary widely; 3.3-610 ppm (geometric mean: 43 ppm) (detection); 7.6-49 ppm (geometric mean: 19 ppm) (recognition).
Viscosity	2.1 cP @ 25 °C (100%)
Volatile Component	70 - 100%
Partition Coefficient: n-octanol/water	Log P(oct) = 0.05.
Surface Tension	21.32 mN/m (20.8 dynes/cm) at 20 °C; 20.93 mN/m (20.93 dynes/cm) at 25 °C.
Flash Point	12 °C closed cup; 17 °C open cup. (100%)
Flammability	Flammable. Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition.
Auto-Ignition Temperature	425 °C (100%)
Flammable Limits - Lower	2.0% (100%)
Flammable Limits - Upper	13.4% (100%)
Explosion Properties	Peroxidation reactions may occur in anhydrous secondary alcohols, such as 2-propanol, when stored for long periods in contact with air or oxygen. A number of explosions have been reported, which occurred during distillation of 2-propanol following prolonged storage (4 years and longer). The explosions were caused by the presence of peroxides which had become concentrated in the distillation residue. There is no indication that peroxides in 2-propanol are hazardous or will explode unless concentrated by a process such as distillation. The rate of peroxidation was greatest under the following conditions: anhydrous solvent (no water), contact with air or oxygen in a partially full container, exposure to sunlight and the presence of trace amounts of contaminants such as 2-butanone which accelerated the reaction.
Molecular Weight	60.09
Kinematic Viscosity	3.05 mm²/s (3.05 centistokes) at 20 °C; 2.61 mm²/s (2.61 centistokes) (calculated).
Dynamic Viscosity	2.4 mPa.s (2.4 centipoises) at 20 °C; 2.04 mPa.s (2.04 centipoises) at 25 °C.
Saturated Vapour Concentration	43600 ppm (4.36%) at 20 °C; 59700 ppm (5.97%) at 25 °C (calculated).

10. Stability and reactivity

Chemical Stability	Normally stable. However, 2-propanol may form peroxides when the anhydrous (no water) material is stored for long periods in contact with air and light. The peroxides are not hazardous unless concentrated by distillation.
Conditions to Avoid	Heat, flames, ignition sources, electrostatic discharge, sunlight and incompatibles.
Incompatible Materials	Strong oxidising agents (e.g. chromium trioxide, nitric acid and nitrates, nitrogen oxides, nitrates, calcium hypochlorite, chlorine, sodium dichromate, hydrogen peroxide and other peroxides, permanganates and perchlorates), strong acids (e.g. nitric acid, sulfuric acid, fuming sulfuric acid, hypochlorous acid, oleum, perchloric acid), hydrogen peroxide-sulfuric acid combination, acid anhydrides, acetaldehyde, nitroform, organic nitro compounds, aldehydes, amines, alkali metals (e.g. sodium or potassium) or alkaline earth metals (e.g. magnesium or calcium), aluminium, crotonaldehyde or phosgene, potassium tert-butoxide, trinitromethane, iron and iron salts, hydrogen-palladium combination, ethylene oxide, hexamethylene diisocyanate and other isocyanates

	and tri-isobutyl aluminium.
Hazardous Decomposition Products	Irritant gases, which may include unburned alcohol and toxic constituents, oxides of carbon and peroxides.
Possibility of hazardous reactions	Contact with strong oxidising agents (e.g. nitrates, perchlorates, peroxides) increases risk of fire and explosion. Contact with phosgene forms isopropyl chloroformate and hydrogen chloride. Explosive thermal decomposition may occur in contact with iron salts. Mixture with hydrogen-palladium can ignite in air.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Toxicology Information	No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. If mishandled or overexposed to this product the following symptoms or effects may occur.
Acute Toxicity - Oral	LD50 (rat): 5840 mg/kg.
Acute Toxicity - Inhalation	LD50 (rat): 37.5 mg/l 4 h
Ingestion	Unlikely under normal occupational exposures, but swallowing a minor amount may cause minor throat irritation and vomiting. Ingestion of larger amounts (about 100 grams or more) may cause headache, dizziness, drowsiness, inebriation, unconsciousness, narcosis, gastrointestinal pain, cramps, nausea, vomiting and diarrhoea. Large amounts may cause respiratory paralysis, coma, unconsciousness and death. Swallowing the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis. Aspiration can result in severe, life-threatening lung damage.
Inhalation	Mild irritation to the nose, throat and upper respiratory tract can occur at concentrations above 400 ppm. It can probably cause central nervous system (CNS) depression, based on animal information and comparison to related alcohols. Symptoms may include headache, nausea, vomiting, dizziness, drowsiness, staggering, ataxia, deep narcosis and incoordination. Higher concentrations may result in unconsciousness and death.
Skin	Degreasing effect on the skin, possibly followed by secondary inflammation. Brief contact is not irritating or mildly irritating to the skin, based on human and animal evidence. May be absorbed through the skin with possible systemic effects.
Eye	Causes serious eye irritation, based on animal evidence. Exposure of volunteers to vapours at approximately 400 ppm for 3 to 5 minutes produced mild irritation, while 800 ppm was considered objectionable. Direct eye contact with the liquid and splashes may cause severe eye irritation, pain, redness, possible corneal burns and eye damage.
Respiratory sensitisation	Not classified based on available information.
Skin Sensitisation	Not classified based on available information.
Germ cell mutagenicity	Not classified based on available information.
Carcinogenicity	Isopropanol [67-63-0] is evaluated in the IARC Monographs (Vol. 15, Suppl. 7, Vol. 71; 1999) as Group 3: Not classifiable as to carcinogenicity to humans. See: http://monographs.iarc.fr/ENG/Monographs/vol71/mono71-45.pdf Not classified based on available information.
Reproductive Toxicity	Not classified based on available information.
STOT-single exposure	Specific target organ toxicity Single Exposure Category 3 (respiratory tract irritation) H336 May cause drowsiness or dizziness.
STOT-repeated exposure	Not classified based on available information.
Chronic Effects	Repeated or prolonged skin contact can cause drying, cracking and dermatitis due to its defatting. Prolonged contact (e.g. clothing saturated with the product) can be irritating. 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. Occupational exposure to isopropanol has not been reported as causing long term effects.
Serious eye damage/irritation	Eye Damage/Irritation: Category 2A H319 Causes serious eye irritation.
Mutagenicity	Not classified based on available information.
Skin corrosion/irritation	Not classified based on available information.

12. Ecological information

Ecological Information	No ecological problems are to be expected when the product is handled and used with due care and attention.
Persistence and degradability	Readily biodegradable.
Bioaccumulative Potential	No bioaccumulation is to be expected (log P(o/w <1).
Acute Toxicity - Fish	LC50 (Pimephales promelas): 9640 mg/l /96 h (flow through)
Acute Toxicity - Algae	EC50 (Desmodesmus subspicatus): > 1000 mg/l /72 h.
Acute Toxicity - Bacteria	EC5 (Pseudomonas putida): 1050 mg/l /16 h.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous Goods of Class 3 Flammable Liquids, 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 and Class 7.
U.N. Number	1219
UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)
Transport hazard class(es)	3
Hazchem Code	•2YE
Packing Group	II
EPG Number	3A1
IERG Number	16
Environmental Hazards	Toxic effect on fish and plankton. According to current knowledge, does not cause interferences in waste water treatment if used appropriately.

15. Regulatory information

Regulatory Information	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.
Poisons Schedule	Not Scheduled

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia. National Road Transport Commission, 'Australian Code for the Transport of

Dangerous Goods by Road and Rail 7th. Ed.'.
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals'.
Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand.
Safe Work Australia, 'Hazardous Chemical Information System'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

Empirical Formula & Structural Formula

CH3CH(OH)CH3

...End Of MSDS...