

1. IDENTIFICATION

Product Name	Isopropyl alcohol
Other Names	IPA; Isopropanol
Uses	For industrial use - Cosmetic use: Cosmetics, hair sprays and colours. Commercial use: A solvent; an industrial detergent; a dry cleaning agent; fuel and lubricant additives; welding and soldering agents. Domestic use: Printing inks and surface coatings; adhesives; cleaning/washing agents, including in domestic detergents; and colouring agents. Site-limited use: As a chemical intermediate; and in analytical laboratory work. Non-industrial use: As a solvent in pharmaceutical products.
Chemical Family	No Data Available
Chemical Formula	C ₃ H ₈ O
Chemical Name	2-Propanol
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Pty Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

Emergency Contact Details

For emergencies only; DO NOT contact these companies for general product advice.

Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888

2. HAZARD IDENTIFICATION

Poisons Schedule (Aust) Not Scheduled

Globally Harmonised System

Hazard Classification	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)
Hazard Categories	Flammable Liquids - Category 2 Serious Eye Damage/Irritation - Category 2A



Specific Target Organ Toxicity (Single Exposure) - Category 3

Pictograms



Signal Word

Danger

Hazard Statements

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary Statements

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 and all other equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing fumes/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/eye protection/face protection.

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.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P337 + P313 If eye irritation persists: Get medical advice/attention.
P370 + P378 In case of fire: Use carbon dioxide (CO2), dry chemical, alcohol resistant foam or water spray for extinction.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local / regional / national / international regulations.

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification

Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
2-Propanol	No Data Available	67-63-0	100 %

4. FIRST AID MEASURES



Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep victim calm and warm – Obtain immediate medical care. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: Immediately flush eyes with running water for several minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.
Skin	IF ON SKIN: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes and/or wash with plenty of soap and water. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply resuscitation if victim is not breathing. Do NOT use direct mouth-to-mouth method if victim ingested or inhaled the substance; use alternative respiratory method or proper respiratory device. Administer oxygen if breathing is difficult. Keep victim calm and warm – Obtain immediate medical care.
Advice to Doctor	Show this safety data sheet to the doctor in attendance. Ensure that attending medical personnel are aware of identity and nature of product(s) involved, and take precautions to protect themselves.
Medical Conditions Aggravated by Exposure	Use of alcoholic beverages enhances the harmful effect.

5. FIRE FIGHTING MEASURES

General Measures	Public safety hazard: IMMEDIATELY CONTACT POLICE OR FIRE BRIGADE. Evacuate all unprotected personnel from area. Keep upwind and to higher ground. If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	HIGHLY FLAMMABLE: Low flashpoint - Will be easily ignited by heat, sparks or flames.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO2), alcohol-resistant foam or water spray for extinction – Do not use water jets. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray can be used. Caution: Use of water spray when fighting fire may be inefficient.
Fire and Explosion Hazard	Risk of violent reaction or explosion: 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. Vapours from runoff may create an explosion hazard.
Hazardous Products of Combustion	Fire will produce irritating, toxic and/or corrosive gases.
Special Fire Fighting Instructions	Contain runoff from fire control or dilution water - Runoff may pollute waterways; Vapours from runoff may create an explosion hazard.
Personal Protective Equipment	Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit/bunker gear).
Flash Point	12 °C
Lower Explosion Limit	2 %
Upper Explosion Limit	12 %
Auto Ignition Temperature	No Data Available
Hazchem Code	•2YE

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flame). All equipment used when handling the product must be earthed. Do not touch or walk through spilled material. Avoid breathing vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material and place it in suitable, properly labelled containers for disposal (see SECTION 13).
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours.
Decontamination	No information available.



Environmental Precautionary Measures

Spillages and decontamination runoff should be prevented from entering drains and watercourses - Runoff may pollute waterways; Vapours from runoff may create an explosion hazard.

Evacuation Criteria

Spill or leak area should be isolated immediately. Keep upwind and to higher ground. Keep unauthorised personnel away. For large spills: IMMEDIATELY CONTACT POLICE OR FIRE BRIGADE; Consider downwind evacuation.

Personal Precautionary Measures

SCBA and gas-tight suits should be worn when dealing with damaged or leaking containers and where there is no risk of ignition. SCBA and structural firefighting uniform provide VERY limited protection where there is a risk of ignition.

7. HANDLING AND STORAGE

Handling

Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation - Use only outdoors or in a well-ventilated area. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/spray and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8). HIGHLY FLAMMABLE LIQUID: Keep away from heat and all sources of ignition - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/lighting/ventilating equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Vent container carefully before opening.

Storage

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers tightly closed when not in use. Keep away from heat and all sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10). Store locked up.

Container

Keep in the original container. "Empty" containers retain residue and/or vapour and may be dangerous. Do not cut, weld, braze solder, drill, grind or expose such containers to heat, flames, sparks, or other ignition sources.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

Isopropyl alcohol (CAS No. 67-63-0):
 - Safe Work Australia Exposure Standard: TWA = 400 ppm (983 mg/m³); STEL = 500 ppm (1,230 mg/m³).
 - New Zealand WES: TWA = 400 ppm (983 mg/m³); STEL = 500 ppm (1,230 mg/m³).
 - NIOSH REL: TWA = 400 ppm (980 mg/m³); STEL = 500 ppm (1,225 mg/m³).
 - OSHA PEL: TWA = 400 ppm (980 mg/m³).
 - Immediately dangerous to life or health (IDLH) concentration: 2,000 ppm.

Exposure Limits

No Data Available

Biological Limits

No information available.

Engineering Measures

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Use explosion-proof electrical/lighting/ventilating equipment.

Personal Protection Equipment

- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or when vapour/aerosols are generated. Recommended: Filter type: A (organic vapour).
 - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Goggles; do not wear contact lenses when handling this product.
 - Hand protection: Wear protective gloves. Recommended: Impervious, solvent-resistant gloves.
 - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious apron and work boots where splashing may occur.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Liquid

Appearance

Clear liquid

Odour

Strong alcohol odour

Colour

Colourless

pH

No Data Available



Vapour Pressure	4.4 kPa (@ 20 °C)
Relative Vapour Density	2.1 Air = 1
Boiling Point	82 - 83 °C
Melting Point	No Data Available
Freezing Point	No Data Available
Solubility	Miscible with water
Specific Gravity	0.78 - 0.79
Flash Point	12 °C
Auto Ignition Temp	No Data Available
Evaporation Rate	2.4 (Butyl acetate = 1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	100 %
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	No information available.
Flame Propagation or Burning Rate of Solid Materials	No information available.
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No information available.
Properties That May Initiate or Contribute to Fire Intensity	HIGHLY FLAMMABLE: Low flashpoint - Will be easily ignited by heat, sparks or flames.
Reactions That Release Gases or Vapours	Fire will produce irritating, toxic and/or corrosive gases.
Release of Invisible Flammable Vapours and Gases	Vapours will form explosive mixtures with air.

10. STABILITY AND REACTIVITY

General Information	Reacts with strong oxidants. Attacks some plastics and rubber.
Chemical Stability	Stable.
Conditions to Avoid	Keep away from heat and all sources of ignition.
Materials to Avoid	Incompatible/reactive with strong oxidisers, acetaldehyde, chlorine, ethylene oxide, acids, isocyanates.
Hazardous Decomposition Products	Fire will produce irritating, toxic and/or corrosive gases. Under incomplete combustion conditions, oxides of Carbon and Nitrogen.
Hazardous Polymerisation	Will not occur.



11. TOXICOLOGICAL INFORMATION**General Information**

- Acute toxicity: Low degree of toxicity by ingestion; May cause abdominal pain, nausea, vomiting, unconsciousness. Low to moderate degree of toxicity by inhalation.
- Skin corrosion/irritation: The substance may defat the skin, which may cause dryness or cracking.
- Eye damage/irritation: Causes serious eye irritation, redness.
- Respiratory/skin sensitisation: No information available.
- Germ cell mutagenicity: No information available.
- Carcinogenicity: Isopropyl alcohol (CAS No. 67-63-0) is classified in Group 3 of the IARC Monographs: Not classifiable as to its carcinogenicity to humans.
- Reproductive toxicity: No information available.
- STOT (single exposure): May cause irritation to the upper respiratory tract and may cause headache, drowsiness or dizziness (CNS depression).
- STOT (repeated exposure): No information available.
- Aspiration toxicity: Risk of aspiration, pneumonia (chemical pneumonitis).

Acute**Ingestion**

Acute toxicity (Oral):
- LD50, Rat: 5,045 mg/kg

Other

Acute toxicity (Dermal):
- LD50, Rabbit: 12,800 mg/kg

Inhalation

Acute toxicity (Inhalation):
- LC50, Rat: 16,000 ppm (8 h)

Carcinogen Category

None

12. ECOLOGICAL INFORMATION**Ecotoxicity**

No information available.

Persistence/Degradability

Readily biodegradable.

Mobility

No information available.

Environmental Fate

Prevent entry into soils, drains and waterways.

Bioaccumulation Potential

No information available.

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS**General Information**

Dispose of by controlled incineration and in accordance with local/regional/national regulations.

Special Precautions for Land Fill

Empty containers should be air-dried before disposal.

14. TRANSPORT INFORMATION**Land Transport (Australia)**

ADG Code

Proper Shipping Name

ISOPROPANOL (ISOPROPYL ALCOHOL)

Class

3 Flammable Liquids

Subsidiary Risk(s)

No Data Available

EPG

16 Liquids - Highly Flammable, Toxic

UN Number

1219



Hazchem •2YE
Pack Group II
Special Provision No Data Available

Sea Transport
 IMDG Code

Proper Shipping Name ISOPROPANOL (ISOPROPYL ALCOHOL)
Class 3 Flammable Liquids
Subsidiary Risk(s) No Data Available
UN Number 1219
Hazchem 2YE
Pack Group II
Special Provision No Data Available
EMS F-E, S-D
Marine Pollutant No

Air Transport
 IATA DGR

Proper Shipping Name ISOPROPANOL (ISOPROPYL ALCOHOL)
Class 3 Flammable Liquids
Subsidiary Risk(s) No Data Available
UN Number 1219
Hazchem 2YE
Pack Group II
Special Provision No Data Available

National Transport Commission (Australia)

Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

General Information No Data Available
Poisons Schedule (Aust) Not Scheduled

National/Regional Inventories

Australia (AICS) Listed
Canada (DSL) Listed
Canada (NDSL) Not Listed
China (IECSC) Listed
Europe (EINECS) 200-661-7
Europe (REACH) Listed



Japan (ENCS/METI)	2-207
Korea (KECI)	KE-29363
Malaysia (EHS Register)	Listed
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Listed
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Listed
USA (TSCA)	Listed

16. OTHER INFORMATION

Related Product Codes

ISPRAL0200, ISPRAL0300, ISPRAL0500, ISPRAL0501, ISPRAL0502, ISPRAL0505, ISPRAL0510, ISPRAL0515, ISPRAL0520, ISPRAL0600, ISPRAL0601, ISPRAL0700, ISPRAL0701, ISPRAL0800, ISPRAL0810, ISPRAL1000, ISPRAL1001, ISPRAL1002, ISPRAL1003, ISPRAL1004, ISPRAL1005, ISPRAL1006, ISPRAL1007, ISPRAL1008, ISPRAL1009, ISPRAL1010, ISPRAL1011, ISPRAL1012, ISPRAL1013, ISPRAL1014, ISPRAL1015, ISPRAL1016, ISPRAL1017, ISPRAL1018, ISPRAL1019, ISPRAL1020, ISPRAL1021, ISPRAL1022, ISPRAL1023, ISPRAL1024, ISPRAL1025, ISPRAL1026, ISPRAL1027, ISPRAL1028, ISPRAL1029, ISPRAL1030, ISPRAL1031, ISPRAL1032, ISPRAL1033, ISPRAL1034, ISPRAL1035, ISPRAL1036, ISPRAL1037, ISPRAL1038, ISPRAL1039, ISPRAL1040, ISPRAL1041, ISPRAL1042, ISPRAL1043, ISPRAL1044, ISPRAL1045, ISPRAL1048, ISPRAL1050, ISPRAL1051, ISPRAL1053, ISPRAL1055, ISPRAL1057, ISPRAL1058, ISPRAL1059, ISPRAL1060, ISPRAL1100, ISPRAL1200, ISPRAL1210, ISPRAL1500, ISPRAL1501, ISPRAL1515, ISPRAL1520, ISPRAL1800, ISPRAL1801, ISPRAL1802, ISPRAL1803, ISPRAL1804, ISPRAL1805, ISPRAL1806, ISPRAL1807, ISPRAL1808, ISPRAL1809, ISPRAL1810, ISPRAL1811, ISPRAL1812, ISPRAL1813, ISPRAL1814, ISPRAL1815, ISPRAL1816, ISPRAL1817, ISPRAL1818, ISPRAL1819, ISPRAL1820, ISPRAL1821, ISPRAL1822, ISPRAL1823, ISPRAL1824, ISPRAL1825, ISPRAL1826, ISPRAL1827, ISPRAL1828, ISPRAL1829, ISPRAL1830, ISPRAL1831, ISPRAL1832, ISPRAL1900, ISPRAL1901, ISPRAL2000, ISPRAL2001, ISPRAL2200, ISPRAL2201, ISPRAL2500, ISPRAL3000, ISPRAL3001, ISPRAL3002, ISPRAL3003, ISPRAL3005, ISPRAL3010, ISPRAL3011, ISPRAL3012, ISPRAL3020, ISPRAL3030, ISPRAL3040, ISPRAL3050, ISPRAL3060, ISPRAL3070, ISPRAL3075, ISPRAL3076, ISPRAL3080, ISPRAL3090, ISPRAL3100, ISPRAL3110, ISPRAL3120, ISPRAL3130, ISPRAL3140, ISPRAL3141, ISPRAL3142, ISPRAL3143, ISPRAL3144, ISPRAL3145, ISPRAL3150, ISPRAL3160, ISPRAL3170, ISPRAL3500, ISPRAL3501, ISPRAL3800, ISPRAL4000, ISPRAL4001, ISPRAL4002, ISPRAL4003, ISPRAL4004, ISPRAL4005, ISPRAL4006, ISPRAL4500, ISPRAL5000, ISPRAL5100, ISPRAL5110, ISPRAL5120, ISPRAL5500, ISPRAL5510, ISPRAL5600, ISPRAL6000, ISPRAL6200, ISPRAL6400, ISPRAL6401, ISPRAL6500, ISPRAL6501, ISPRAL6510, ISPRAL6550, ISPRAL6600, ISPRAL7000, ISPRAL7001, ISPRAL7100, ISPRAL7200, ISPRAL7300, ISPRAL7400, ISPRAL7500, ISPRAL7600, ISPRAL8000, ISPRAL8001, ISPRAL8002, ISPRAL8100, ISPRAL8200, ISPRAL8300, ISPRAL8400, ISPRAL8500, ISPRAL8600, ISPRAL8700, ISPRAL9000, ISPRAL9100, ISPRAL9500, ISPRAL9900, ISPROL0500, ISPROL1000, ISPROL3000, ISPROL6500, ISPROL6600, ISPROL8000, ISPROL8001, ISPROL8100, ISPROL8101

Revision

4

Revision Date

12 Dec 2017

Key/Legend

< Less Than

> Greater Than

AICS Australian Inventory of Chemical Substances

atm Atmosphere

CAS Chemical Abstracts Service (Registry Number)

cm² Square Centimetres

CO₂ Carbon Dioxide

COD Chemical Oxygen Demand

deg C (°C) Degrees Celcius

EPA (New Zealand) Environmental Protection Authority of New Zealand

deg F (°F) Degrees Fahrenheit

g Grams

g/cm³ Grams per Cubic Centimetre

g/l Grams per Litre

HSNO Hazardous Substance and New Organism

IDLH Immediately Dangerous to Life and Health

immiscible Liquids are insoluble in each other.

inHg Inch of Mercury



inH₂O Inch of Water

K Kelvin

kg Kilogram

kg/m³ Kilograms per Cubic Metre

lb Pound

LC₅₀ LC stands for lethal concentration. LC₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD₅₀ LD stands for Lethal Dose. LD₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or **L** Litre

m³ Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m³ Milligrams per Cubic Metre

Misc or **Miscible** Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight

