

1. IDENTIFICATION

Product Name	Ethoxy propanol
Other Names	1-Ethoxy-2-propanol
Uses	Solvent for Industrial/Professional use.
Chemical Family	No Data Available
Chemical Formula	C5H12O2
Chemical Name	2-Propanol, 1-ethoxy-
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
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

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 3
 Serious Eye Damage/Irritation - Category 2A
 Specific Target Organ Toxicity (Single Exposure) - Category 3

Pictograms



Signal Word Warning

Hazard Statements

H226 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.	
	P280	Wear protective gloves/eye protection/face protection.	
	P261	Avoid breathing fumes/mists/vapours/spray.	
	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.	
	P235	Keep cool.	
	P271	Use only outdoors or in a well-ventilated area.	
	Response	P370 + P378	In case of fire: Use carbon dioxide (CO2), dry chemical, alcohol resistant foam or water spray for extinction.
		P337 + P313	If eye irritation persists: Get medical advice/attention.
		P312	Call a POISON CENTER or doctor/physician if you feel unwell.
		P303 + P361 + P353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P305 + P351 + P338		IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
Storage	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	
	P403 + P233	Store in a well-ventilated place. Keep container tightly closed.	
Disposal	P405	Store locked up.	
	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)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

Physical Hazards	3.1C	Flammable liquid - medium hazard
Health Hazards	6.1E	Substances that are acutely toxic –May be harmful, Aspiration hazard

6.3B

Substances that are mildly irritating to the skin

6.4A

Substances that are irritating to the eye

3. COMPOSITION/INFORMATION ON INGREDIENTS*Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
2-Propanol, 1-ethoxy-	C5H12O2	1569-02-4	100 %

4. FIRST AID MEASURES*Description of necessary measures according to routes of exposure*

Swallowed	If swallowed: Rinse mouth. Do not induce vomiting. Call a Poison Centre or doctor/physician if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	Eye contact: Immediately flush eyes with running water for several minutes, holding eyelids open and 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	Skin contact: Remove contaminated clothing and shoes immediately. Flush skin with running water for at least 15 minutes. 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. Call a Poison Centre or doctor/physician if you feel unwell. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. 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	No information available.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool container with flooding quantities of water 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 at ambient temperatures.
Extinguishing Media	In case of fire: Use foam, dry chemical, Carbon dioxide, water spray or fog for extinction. Do not use water jets. - Use of water spray when fighting fire may be inefficient. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal foam can be used.
Fire and Explosion Hazard	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. Vapours from runoff may create an explosion hazard. Containers may explode when heated.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic gases, including: Carbon oxides (CO, CO ₂); Organic compounds.
Special Fire Fighting Instructions	Runoff from fire control water may pollute waterways and may create an explosion hazard. Contaminated runoff should be contained and prevented from entering drains and watercourses.
Personal Protective Equipment	Wear self-contained breathing apparatus in combination with full fire kit.
Flash Point	40 °C [ASTM D 93]
Lower Explosion Limit	1.3 %
Upper Explosion Limit	12 %
Auto Ignition Temperature	255 °C
Hazchem Code	•3Y

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 in handling the product must be earthed. Do not touch or walk through spilled material. Avoid breathing vapours. Avoid contact with eyes, skin and clothing.
Clean Up Procedures	Absorb spill with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal.
Containment	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.
Decontamination	No information available.
Environmental Precautionary Measures	Avoid release to the environment. Prevent entry into drains and waterways.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
Personal Precautionary Measures	Self-contained breathing apparatus and chemical protective clothing should be worn when dealing with damaged or leaking containers, and where there is no risk of ignition (see SECTION 8).

7. HANDLING AND STORAGE

Handling	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practices. Avoid breathing vapours. Avoid contact with eyes, skin and clothing. Wear protective gloves/eye protection/face protection. Keep away from heat/sparks/open flames/hot surface - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Storage	Store in a cool, dry and well ventilated place. Keep container tightly closed - After use replace the closing cap immediately. Keep away from heat/sparks/open flames/hot surface - No smoking. Keep away from oxidising agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions. Protect from direct sunlight and exposure to air - Hazardous polymerisation may occur upon depletion of inhibitor.
Container	Keep in the original container. - Suitable packaging materials: Stainless steel; Steel. - Unsuitable packaging materials: Plastic articles.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	Threshold Limit Value (TLV) not established for this product. - Austria/Germany (Maximum Workplace Concentration - MAK): 50 ppm (220 mg/m ³). Derived No Effect Level (DNEL): - Worker (acute, systemic effects) Inhalation: 317 mg/m ³ .
Exposure Limits	No Data Available
Biological Limits	Predicted No Effect Concentration (PNEC): - Soil: 2.4 mg/kg dw. - STP: 1,250 mg/l - Water: 10 mg/l - Sediment: 37.6 mg/kg
Engineering Measures	Use explosion-proof electrical/ventilating/lighting equipment. 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.
Personal Protection Equipment	Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: (Half-face/Full-face) Filter type: A - Organic vapour. The filter class must be suitable for the maximum contaminant concentration that may arise when handling the product. If the concentration is exceeded, a self-contained breathing apparatus must be used. Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses or tightly fitting safety goggles. Hand protection: Wear chemical-resistant gloves. Recommended materials: Butyl rubber, Neoprene, Nitrile rubber (Thickness: >0.3 mm; Break through time: >480 min). Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. The type of protective equipment must be selected according to the concentration and amount of the hazardous substance at the specific workplace.

Special Hazards Precautions	No information available.
Work Hygienic Practices	Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Keep away from food, drink and animal feeding stuffs. Remove contaminated clothes. Wash contaminated clothing before reuse. Launder separately.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Characteristic, ether-like
Colour	Clear
pH	No Data Available
Vapour Pressure	1.2 Pa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	136 °C
Melting Point	<-70 °C
Freezing Point	No Data Available
Solubility	Completely miscible with water - Soluble in organic solvents
Specific Gravity	No Data Available
Flash Point	40 °C [ASTM D 93]
Auto Ignition Temp	255 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	0.897 g/cm ³
Specific Heat	No Data Available
Molecular Weight	104.1 g/mol
Net Propellant Weight	No Data Available
Octanol Water Coefficient	<1
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	57.7 %
Additional Characteristics	No Data 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 at ambient temperatures.
Reactions That Release Gases or Vapours	Fire/thermal decomposition may produce irritating and/or toxic gases, including: Carbon oxides (CO, CO ₂); Organic compounds.

Release of Invisible Flammable Vapours and Gases Vapours will form explosive mixtures with air.

10. STABILITY AND REACTIVITY

Chemical Stability	Stable at ambient temperature and under normal conditions of use.
Conditions to Avoid	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Protect from direct sunlight and exposure to air - May form explosive peroxides. Take precautionary measures against static discharge.
Materials to Avoid	Incompatible with oxidising agents, strongly alkaline and strongly acid materials.
Hazardous Decomposition Products	Fire/thermal decomposition may produce irritating and/or toxic gases, including: Carbon oxides (CO, CO ₂); Organic compounds. Vapours may form explosive mixture with air.
Hazardous Polymerisation	Hazardous polymerisation may occur upon depletion of inhibitor.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Information on possible routes of exposure:</p> <ul style="list-style-type: none">- Inhalation: May cause central nervous system effects; May cause drowsiness or dizziness, breathing difficulties, coughing, headache, cramping, unconsciousness and death.- Eye contact: Causes serious eye irritation, erythema (redness).- Skin contact: Prolonged or repeated contact may cause defatting of the skin, drying, redness, swelling and possible blistering.- Ingestion: May cause gastrointestinal irritation, nausea, vomiting and diarrhoea. <p>Acute toxicity: Based on available data, the classification criteria are not met. Skin corrosion/irritation: Based on available data, the classification criteria are not met. Eye damage/irritation: Causes serious eye irritation. Respiratory/skin sensitisation: Based on available data, the classification criteria are not met. Germ cell mutagenicity: Based on available data, the classification criteria are not met. Carcinogenicity: Based on available data, the classification criteria are not met. Reproductive toxicity: Based on available data, the classification criteria are not met. STOT - single exposure: May cause drowsiness or dizziness. STOT - repeated exposure: Based on available data, the classification criteria are not met. Aspiration toxicity: Based on available data, the classification criteria are not met.</p>
Acute	
Ingestion	Acute toxicity (Oral): - LD50, Rat: >5,000 mg/kg
Other	Acute toxicity (Dermal): - LD50, Rabbit: >5,000 mg/kg
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: >10,000 ppm (4 h).
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	<p>Aquatic toxicity:</p> <ul style="list-style-type: none">- LC50, Fish: >100 mg/l- LC50, Crustacea: >100 mg/l- EC50, Daphnia: >100 mg/l- EC50, Algae/other aquatic plants: >100 mg/l
Persistence/Degradability	Readily biodegradable.
Mobility	<ul style="list-style-type: none">- Soil: Expected to be highly mobile in soil.- Surface tension: 41.5 mN/m
Environmental Fate	Ecological injuries are not known or expected under normal use.
Bioaccumulation Potential	<ul style="list-style-type: none">- Partition coefficient n-octanol/water: <1- BCF: 1 <p>No Data Available</p>

Environmental Impact

13. DISPOSAL CONSIDERATIONS

General Information

Dispose of contents/container in accordance with local/regional/national regulations. Dispose of waste product at an authorised disposal facility.

Special Precautions for Land Fill

Contaminated packaging: Do not burn, or use a cutting torch on the empty drum. Do not puncture or incinerate. If recycling is not practicable, deliver to an approved waste disposal facility.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	ALCOHOLS, N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1987
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	ALCOHOLS N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1987
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	ALCOHOLS, N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1987
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	ALCOHOLS, N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
ERG	127 Flammable Liquids (Polar / Water-Miscible)
UN Number	1987
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	ALCOHOLS, N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1987
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available
EMS	F-E, S-D
Marine Pollutant	No

Air Transport

IATA DGR

Proper Shipping Name	ALCOHOLS, N.O.S. (1-Ethoxy-2-propanol)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1987
Hazchem	3Y
Pack Group	III
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)
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15. REGULATORY INFORMATION

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

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR001218

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	216-374-5
Europe (REACH)	01-2119462792-32-
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Listed
Philippines (PICCS)	Not Determined
Switzerland (Giftliste 1)	Not Determined
Switzerland (Inventory of Notified Substances)	Not Determined
Taiwan (NCSR)	Not Determined
USA (TSCA)	Not Determined

16. OTHER INFORMATION

Related Product Codes ETPROP0700, ETPROP0800, ETPROP1000, ETPROP1001, ETPROP1002, ETPROP1003, ETPROP1004, ETPROP1005, ETPROP1006, ETPROP1007, ETPROP1100, ETPROP3000, ETPROP9900

Revision 3

Revision Date 20 May 2016

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 Farenheit
- 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 insoluable 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