



Safety Data Sheet
Ethyl 3-ethoxypropionate
Revision 5, Date 11 Sep 18

1. IDENTIFICATION

Product Name	Ethyl 3-ethoxypropionate
Other Names	EEP; Ester EEP
Uses	Solvent.
Chemical Family	No Data Available
Chemical Formula	C ₇ H ₁₄ O ₃
Chemical Name	Propanoic acid, 3-ethoxy-, ethyl ester
Product Description	No Data Available

Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox 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

Pictograms**Signal Word**

Warning

Hazard Statements**H226**

Flammable liquid and vapour.

Precautionary Statements

Prevention

P210

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233

Keep container tightly closed.

P240

Ground and bond container and receiving equipment.

P241

Use explosion-proof electrical/ventilating/lighting and all other equipment.

P242

Use non-sparking tools.

P243

Take action to prevent static discharges.

P280

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

Response

P370 + P378

In case of fire: Alcohol resistant foam is the preferred fire-fighting medium but, if it is not available, normal foam can be used.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

Storage

P403 + P235

Store in a well-ventilated place. Keep cool.

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)

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

HSNO Classifications

Physical Hazards

3.1C

Flammable liquid - medium hazard

Environmental Hazards

9.1C

Substances that are harmful in the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Chemical Entity	Formula	CAS Number	Proportion
Ethyl 3-ethoxypropionate	C7H14O3	763-69-9	<=100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person.
Eye	IF IN EYES: 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	IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Wash skin and hair with plenty of soap and running water/shower. 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. If respiratory symptoms persist, get medical advice/attention. Apply resuscitation if victim is not breathing - Administer oxygen if breathing is difficult.
Advice to Doctor	Treat symptomatically. Keep victim calm and warm – Obtain immediate medical care. 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	Skin contact may aggravate preexisting dermatitis.

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool container with water spray until well after fire is out. Avoid getting water inside containers.
Flammability Conditions	FLAMMABLE LIQUID & VAPOUR: Low flash point - Will be easily ignited by heat, sparks or flames at ambient temperatures.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), 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, normal foam 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 will travel to source of ignition and flash back. Containers may explode when heated. Many liquids are lighter than water - Material will float and may ignite on surface of water. Many vapours are heavier than air and will collect in low or confined areas. Vapours from runoff may create an explosion hazard. May irritate or burn skin and eyes. Vapours may cause dizziness or drowsiness.
Hazardous Products of Combustion	Fire may produce irritating, toxic and/or corrosive gases, including Carbon oxides.
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) and chemical-protective clothing. SCBA and structural firefighting uniform provide limited protection.
Flash Point	59 °C [Closed cup]
Lower Explosion Limit	1.05 %
Upper Explosion Limit	9.8 %
Auto Ignition Temperature	377 °C
Hazchem Code	•3Y

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation - Ventilate enclosed spaces before entering. ELIMINATE all ignition sources - All equipment used in 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 spill 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; Water spray may be used to knock down or divert vapour clouds.
Decontamination	No information available.
Environmental Precautionary Measures	Spillages and decontamination runoff should be prevented from entering drains and watercourses.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher

ground. Large spill: Immediately contact Police or Fire Brigade; Consider initial downwind evacuation of areas within at least 300 m.

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 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. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours and contact with eyes, skin and clothing. Do not ingest. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). FLAMMABLE LIQUID & VAPOUR: Keep away from heat and all sources of ignition - 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, out of direct sunlight. Keep container tightly closed. Minimise exposure to air - After opening, purge container with nitrogen before re-closing. Keep away from heat and all sources of ignition - No smoking. Keep away from incompatible materials (see SECTION 10).
- Periodically test for peroxide formation on long-term storage. Do not allow to evaporate to near dryness. Do not distill to near dryness. Addition of water or appropriate reducing materials will lessen peroxide formation.

Container

Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General

Contains no substances with occupational exposure limit values.
- Exposure Limit Values (supplier recommendation): TWA = 50 ppm; STEL = 100 ppm.

Exposure Limits

No Data Available

Biological Limits

No information available.

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Use explosion-proof electrical and ventilating equipment.

Personal Protection Equipment

- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Organic vapour respirator (refer to AS/NZS 1715 & 1716).
- Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Safety glasses with side-shields or chemical splash goggles.
- Hand protection: Wear protective gloves. Recommended: Chemical-resistant, impervious gloves.
- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Depending on conditions of use, an impervious apron should be worn. Other equipment may be required depending on workplace standards.

Special Hazards Precautions

No information available.

Work Hygienic Practices

Do not eat, drink or smoke when using this product. Wash hands before breaks and at the end of workday. Remove contaminated clothing and shoes immediately and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Liquid

Appearance

Liquid

Odour

Ester

Colour

Colourless

pH

No Data Available

Vapour Pressure

0.23 kPa (@ 20 °C)

Relative Vapour Density

5.0 Air = 1

Boiling Point	165 - 172 °C
Melting Point	No Data Available
Freezing Point	<-50 °C
Solubility	29 g/l water
Specific Gravity	0.95
Flash Point	59 °C [Closed cup]
Auto Ignition Temp	377 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>400 °C
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	146.19 g/mole
Net Propellant Weight	No Data Available
Octanol Water Coefficient	1.35 (log Pow)
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	Dynamic: 1.20 mPa.s (25 °C) - Kinematic: 1.328 mm ² /s (20 °C) (@ No Data Available)
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No information available.
Potential for Dust Explosion	Not applicable.
Fast or Intensely Burning Characteristics	Risk of violent reaction or explosion!
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	FLAMMABLE LIQUID & VAPOUR: Low flash point - Will be easily ignited by heat, sparks or flames at ambient temperatures.
Reactions That Release Gases or Vapours	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including Carbon oxides.
Release of Invisible Flammable Vapours and Gases	Vapours will form explosive mixtures with air.

10. STABILITY AND REACTIVITY

General Information	May form peroxides of unknown stability.
Chemical Stability	Stable under recommended storage and handling conditions.
Conditions to Avoid	Keep away from heat and all sources of ignition. Take precautionary measures against static discharge.
Materials to Avoid	Incompatible/reactive with oxidising agents.
Hazardous Decomposition Products	Fire/decomposition may produce irritating, toxic and/or corrosive gases, including Carbon oxides.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION**General Information**

- Acute toxicity: May cause irritation of mouth, throat, and stomach. Symptoms may include gastrointestinal irritation, nausea, vomiting and diarrhoea.
- Skin corrosion/irritation: Direct skin contact may cause slight or mild, transient irritation. Prolonged or repeated skin contact may cause drying and irritation.
- Eye damage/irritation: May cause eye irritation. Symptoms may include redness, discomfort/pain, tearing and conjunctivitis.
- Respiratory/skin sensitisation: Does not cause skin sensitization (Guinea pig).
- Germ cell mutagenicity: Negative (Ames test, mammalian cell chromosome aberration test, in vitro mammalian cell gene mutation test).
- Carcinogenicity: No ingredient of this product present at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen by IARC.
- Reproductive toxicity: No information available.
- STOT (single exposure): May cause irritation of the nose, throat, mucous membranes and respiratory tract. Symptoms may include upper respiratory irritation, coughing and breathing difficulties. Inhalation of high concentrations may cause headache, nausea, vomiting, dizziness, drowsiness and other central nervous system effects.
- STOT (repeated exposure): Prolonged overexposure may cause liver and kidney effects.
- Aspiration toxicity:

Acute**Ingestion**

Acute toxicity (Oral):
 - LD50, Rat: 4,309 - 5,000 mg/kg

Other

Acute toxicity (Dermal):
 - LD50, Rabbit: 4,080 - 10,000 mg/kg

Carcinogen Category

None

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Aquatic toxicity:
 - Acute LC50, Fish: 60.9 mg/l (96 h).
 - Acute EC50, Daphnia: 873 mg/l (48 h).
 - Acute EC50, Algae: >114.86 mg/l (72 h).

Persistence/Degradability

Readily biodegradable.
 - 100%, 28 d [CO2 Evolution Test].

Mobility

Known or predicted distribution to environmental compartments:
 - Log Koc: 1.52 [QSAR model].

Environmental Fate

Not expected to be harmful to aquatic organisms. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment. Prevent entry into drains and waterways.

Bioaccumulation Potential

Not expected to bioaccumulate.
 - Log Kow: 1.35
 - BCF: 1.4

Environmental Impact

No Data Available

13. DISPOSAL CONSIDERATIONS**General Information**

Dispose of contents/container in accordance with local/regional/national regulations. Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.

Special Precautions for Land Fill

Contaminated packaging: Empty containers retain residue (liquid and/or vapour) and can be dangerous - follow label warnings even after container is emptied. Do not cut, weld, drill or grind on or near this container.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1993
Hazchem	•3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (Malaysia)

ADR Code

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1993
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
EPG	14 Liquids - Highly Flammable
UN Number	1993
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
ERG	128 Flammable Liquids (Non-Polar / Water-Immiscible)
UN Number	1993
Hazchem	3Y
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available

UN Number	1993
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	FLAMMABLE LIQUID, N.O.S. (Ethyl-3-ethoxypropionate)
Class	3 Flammable Liquids
Subsidiary Risk(s)	No Data Available
UN Number	1993
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	HSR002495 HSR001040 (Revoked)
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National/Regional Inventories

Australia (AIC)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	212-112-9
Europe (REACH)	Not Determined
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)	Listed

16. OTHER INFORMATION

Related Product Codes	ETETPR3000, ETETPR3020, ETETPR3100, ETETPR6000, ETETPR6001, ETETPR6002, ETETPR6003, ETETPR6700, ETETPR7000
Revision	5
Revision Date	11 Sep 2018
Key/Legend	<p> < 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 </p>

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