

1. IDENTIFICATION

Product Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Other Names	C-12 (2,2,4-Trimethyl-1,3-Pentanediol Monoisobutyrate); Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol; KYOWANOL M; UCAR FILMER IBT
Uses	Industrial solvent; Chemical intermediate; Coating agent; Coalescing agent for emulsions.
Chemical Family	No Data Available
Chemical Formula	C ₁₂ H ₂₄ O ₃
Chemical Name	Propanoic acid, 2-methyl-, monoester with 2,2,4-trimethyl-1,3-pentanediol
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	NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)		
Hazard Categories	Acute Hazard To The Aquatic Environment - Category 3		
Signal Word	None		
Hazard Statements	H402	Harmful to aquatic life.	
Precautionary Statements	Prevention	P273	Avoid release to the environment.
	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	NOT 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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Safe Work Australia

National Guide for Classifying Hazardous Chemicals under the Model WHS Regulations

Hazard Classification	NOT hazardous according to the criteria of Safe Work Australia under Model WHS Regulations
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3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Isobutyric acid, monoester with 2,2,4-trimethylpentane-1,3-diol	C12H24O3	25265-77-4	>=98.5 - 100 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	IF SWALLOWED: Rinse mouth. Do not induce vomiting. Get immediate medical advice/attention. Do not induce vomiting unless directed to do so by medical personnel.
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: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
Inhaled	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. If experiencing respiratory symptoms, call a Poison Centre or doctor/physician for advice.
Advice to Doctor	Treat symptomatically. *Most important symptoms and effects, both acute and delayed: None known. Skin contact may aggravate pre existing dermatitis.

Medical Conditions Aggravated by
Exposure

5. FIRE FIGHTING MEASURES

General Measures	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out. Burning liquids may be moved by flushing with water to protect personnel and minimise property damage. Avoid accumulation of water - Product may be carried across water surface spreading fire or contacting an ignition source.
Flammability Conditions	Combustible liquid; May burn but does not ignite readily.
Extinguishing Media	Use dry chemical, Carbon dioxide (CO ₂), foam or water spray for extinction - Do not use a heavy water stream. *Alcohol resistant foams are preferred; General purpose synthetic foams or protein foams may function, but will be less effective.
Fire and Explosion Hazard	Containers may explode when heated. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.
Hazardous Products of Combustion	Fire may produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide. Smoke may contain the original material in addition to combustion products of varying composition.
Special Fire Fighting Instructions	Contain runoff from fire control water - Runoff may cause pollution.
Personal Protective Equipment	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
Flash Point	119 - 122 °C [Closed cup]
Lower Explosion Limit	0.6 %
Upper Explosion Limit	4.2 %
Auto Ignition Temperature	388 - 393 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Ensure adequate ventilation. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material. Avoid breathing mist/vapours and contact with eyes, skin and clothing.
Clean Up Procedures	Pick up with sand or other non-combustible absorbent material and place into containers for later disposal (see SECTION 13).
Containment	Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Dike far ahead of large spill for later disposal.
Decontamination	Flush area with plenty of water.
Environmental Precautionary Measures	Prevent entry into drains and waterways. Notify authorities if liquid enters sewers or public waters.
Evacuation Criteria	Spill or leak area should be isolated immediately. Keep unnecessary/unauthorised personnel away.
Personal Precautionary Measures	Use personal protective equipment as required (see SECTION 8).

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. Use personal protective equipment as required (see SECTION 8). Keep away from heat and sources of ignition - No smoking. Avoid release to the environment.
Storage	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Keep away from heat and sources of ignition - No smoking. Keep away from food/feedstuffs and incompatible materials (see SECTION 10).

Container Keep in the original container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	Exposure limits have not been established for this substance.
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.
Personal Protection Equipment	<ul style="list-style-type: none"> - Respiratory protection: For most conditions, no respiratory protection should be needed. Wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. Recommended: Organic vapour cartridge with a particulate pre-filter (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles or safety glasses with side-shields; Face-shield (depending on the task). - Hand protection: Handle with gloves. Recommended: Chemical-resistant gloves, e.g. Chlorinated polyethylene, Neoprene, Polyethylene, Ethyl vinyl alcohol laminate (EVAL), Polyvinyl chloride (PVC or vinyl), Viton. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Chemically-resistant protective clothing; Apron, boots or full body suit (depending on the task).
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. Remove contaminated clothing and shoes immediately and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Clear liquid
Odour	Mild
Colour	Colourless
pH	7
Vapour Pressure	<0.01 mmHg - 1.3 Pa (@ 20 °C)
Relative Vapour Density	7 - 7.45 Air = 1
Boiling Point	255 - 261.5 °C
Melting Point	<-70.25 °C
Freezing Point	-50 - -57 °C
Solubility	Slightly soluble in water (0.5 - 3.79 g/l) 25°C
Specific Gravity	0.948 (Water = 1)
Flash Point	119 - 122 °C [Closed cup]
Auto Ignition Temp	388 - 393 °C
Evaporation Rate	0.01 (Butyl acetate = 1)
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	>200 °C
Density	0.95 g/ml
Specific Heat	No Data Available
Molecular Weight	No Data Available

Net Propellant Weight	No Data Available
Octanol Water Coefficient	log Pow: 3 - 3.47
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	12.9 mPa.s (@ 25 °C)
Volatile Percent	No Data Available
VOC Volume	934 g/L
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	Combustible liquid; May burn but does not ignite readily.
Reactions That Release Gases or Vapours	Fire may produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide. Smoke may contain the original material in addition to combustion products of varying composition.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

General Information	to elevated temperatures can cause product to decompose.
Chemical Stability	Stable under normal conditions.
Conditions to Avoid	Keep away from heat (elevated temperatures) and sources of ignition.
Materials to Avoid	Incompatible/reactive with oxidising agents, strong acids, strong bases.
Hazardous Decomposition Products	Fire may produce irritating and/or toxic gases, including Carbon monoxide, Carbon dioxide. Smoke may contain the original material in addition to combustion products of varying composition. Decomposition products depend upon temperature, air supply and the presence of other materials.
Hazardous Polymerisation	Will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	<p>Information on toxicological effects:</p> <ul style="list-style-type: none"> - Acute toxicity: Not classified. - Skin corrosion/irritation: Not classified. - Serious eye damage/irritation: Not classified. - Respiratory/skin sensitisation: Not classified. - Germ cell mutagenicity: Not classified. - Carcinogenicity: Not classified. - Reproductive toxicity: Not classified. - STOT (single exposure): Not classified. - STOT (repeated exposure): Not classified. - Aspiration toxicity: Not classified.
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Information on possible routes of exposure:

- Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.
- Eye contact: May cause slight eye irritation. Corneal injury is unlikely.
- Skin contact: Brief contact may cause slight skin irritation with local redness. May cause drying and flaking of the skin. Did not cause allergic skin reactions when tested in guinea pigs.
- Inhalation: Prolonged exposure is not expected to cause adverse effects. Spray mist may irritate the respiratory system. Chronic effects: Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Acute

Ingestion	Acute toxicity (Oral): - LD50, Rat: 3,200 mg/kg [Supplier's SDS].
Other	Acute toxicity (Dermal): - LD50, Rabbit (male): >15,200 mg/kg
Inhalation	Acute toxicity (Inhalation): - LC50, Rat: >3.55 mg/l (6 h, vapour). No deaths occurred at this concentration.
Carcinogen Category	None

12. ECOLOGICAL INFORMATION

Ecotoxicity	Acute toxicity: - Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
Persistence/Degradability	Material is readily biodegradable (10-day window: Pass). - Biodegradation: 76 - 79 % (28 d) [OECD TG 301B]. - Biodegradation: 99.5 % (15 d) [OECD TG 302B].
Mobility	Mobility in soil: - Partition coefficient (Koc): 22 [Estimated].
Environmental Fate	Harmful to aquatic life - Avoid release to the environment.
Bioaccumulation Potential	- Partition coefficient: n-octanol/water (log Pow): 3.47 (at 25 °C)
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of contents/container in accordance with local/regional/national regulations. This material should be disposed of by incineration at an approved facility.
Special Precautions for Land Fill	Contaminated packaging: Since emptied containers retain product residues, all label warning must be observed even after containers are emptied.

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

ADG Code

Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	C2 Combustible Liquids - Flash Point >93°C, Closed Cup, Not Excluded Flammable

Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (Malaysia)

ADR Code	
Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (New Zealand)

NZS5433	
Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Land Transport (United States of America)

US DOT	
Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

Sea Transport

IMDG Code	
Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	No Data Available

Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

Air Transport

IATA DGR

Proper Shipping Name	2,2,4-Trimethylpentane-1,3-diol, monoisobutyrate
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

National Transport Commission (Australia)

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

Dangerous Goods Classification	NOT 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	Not Hazardous
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National/Regional Inventories

Australia (AIIC)	Listed
Canada (DSL)	Listed
Canada (NDSL)	Not Determined
China (IECSC)	Listed
Europe (EINECS)	Listed

Europe (REACH)	Not Determined
Japan (ENCS/METI)	Listed
Korea (KECI)	Listed
Malaysia (EHS Register)	Not Determined
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	TEXIBT1000, TEXIBT1001, TEXIBT1002, TEXIBT1003, TEXIBT1004, TEXIBT1005, TEXIBT1006, TEXIBT1100, TEXIBT1101, TEXIBT1102, TEXIBT1200, TEXIBT1201, TEXIBT1300, TEXIBT2000, TEXIBT3000, TEXIBT3900, TEXIBT4000, TEXIBT4001, TEXIBT4100, TEXIBT4101, TEXIBT4200, TEXIBT4300, TEXIBT4400, TEXIBT4500, TEXIBT4501, TEXIBT4505, TEXIBT4510, TEXIBT4511, TEXIBT4512, TEXIBT4513, TEXIBT5000
Revision	6
Revision Date	06 Jul 2021
Reason for Issue	Updated SDS
Key/Legend	<p>< Less Than > Greater Than</p> <p>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</p>

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