

1. IDENTIFICATION

Product Name	Pentaerythritol
Other Names	1,3-PROPANEDIOL,2,2-BIS(HYDROXYMETHYL)-; Monopentaerythritol; Tetrahydroxymethylmethane; Tetramethylolmethane
Uses	Alkyd resins, rosin and tall oil esters, special varnishes, pharmaceuticals, plasticizers, insecticides, synthetic lubricants; explosives; paint swelling agents.
Chemical Family	No Data Available
Chemical Formula	C5H12O4
Chemical Name	Pentaerythritol
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 NOT hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Signal Word None

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)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Pentaerythritol	C5H12O4	115-77-5	>98.0 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed Rinse mouth with water. Give water to drink. Do NOT induce vomiting. If symptoms develop, seek medical attention.

Eye Immediately flush eyes with water for at least 15 minutes while holding eyelids open. Seek immediate medical attention.

Skin Remove contaminated clothing. Wash affected area with plenty of water. If irritation persists, seek medical attention.

Inhaled Remove victim from exposure to fresh air. If not breathing, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention.

Advice to Doctor Treat symptomatically based on individual reactions of patient and judgement of doctor.

Medical Conditions Aggravated by Exposure No information available on medical conditions which are aggravated from exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Do not breath fumes.

Flammability Conditions May be combustible at high temperature.

Extinguishing Media Use fire extinguishing methods suitable to surrounding conditions. CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam. Do not use water with full jet.

Fire and Explosion Hazard Airborne dust may form explosive mixtures in air.

Hazardous Products of Combustion Oxides of carbon.

Special Fire Fighting Instructions Dispose of contaminated fire-fighting water according to local regulations.

Personal Protective Equipment Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves).

Flash Point >150 °C Open Cup

Lower Explosion Limit No Data Available

Upper Explosion Limit No Data Available

Auto Ignition Temperature	>400 °C
Hazchem Code	No Data Available

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Eliminate all ignition sources. Ventilate area. Avoid dust formation. Avoid breathing dust. Use appropriate personal protective equipment. Use only clean, non-sparking tools and equipment. Take precautionary measures against static discharge.
Clean Up Procedures	Sweep spilled substance into containers; if appropriate, moisten first to prevent dusting. Remove airborne particles with fine water spray. Keep in suitable, closed containers for disposal.
Containment	Stop the flow of material if this can be done without risk. Clean up spills immediately.
Environmental Precautionary Measures	Avoid release to the environment.
Evacuation Criteria	Evacuate unnecessary personnel.
Personal Precautionary Measures	particulate filter respirator adapted to the airborne concentration of the substance.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Prevent deposition of dust. Use explosion-proof electrical, ventilation, lighting and equipment. Take precautionary measures against static discharge by bonding and grounding equipment. Observe good personal hygiene practices and recommended procedures. Avoid inhalation of dust. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink, or smoke during work.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials and sources of ignition. Protect from direct sunlight and moisture.
Container	Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC) for Pentaerythritol (CAS No. 115-77-5): TWA = 10 mg/m ³ US NIOSH Recommended Exposure Limit (REL) for Pentaerythritol: TWA = 10 mg/m ³ (total); 5 mg/m ³ (resp). NOTE: 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.
Exposure Limits	No Data Available
Biological Limits	No information available on biological limit values for this product.
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	RESPIRATOR: Wear an effective dust mask where dusts/vapours are generated and engineering controls are inadequate (AS1715/1716). EYES: Safety glasses with side shields (AS1336/1337). HANDS: Wear impervious gloves (AS2161). CLOTHING: Long-sleeved protective clothing and safety footwear (AS3765/2210).
Special Hazards Precautions	Potential for dust explosion. Prevent dispersion/deposition of dust. Use explosion-proof electrical, ventilation and lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Ground/bond equipment.
Work Hygienic Practices	Wash hands, forearms and face thoroughly after handling chemical products; before eating, smoking, using the lavatory and at the end of the working period. Do not eat, drink or smoke while using this product. Take off contaminated clothing and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Crystalline/Powder
Odour	Odourless
Colour	White
pH	4 - 7
Vapour Pressure	0.000015 Pa (@ 20 °C)
Relative Vapour Density	No Data Available
Boiling Point	369 °C
Melting Point	258 °C
Freezing Point	258 °C
Solubility	62 g/L
Specific Gravity	1.37
Flash Point	>150 °C Open Cup
Auto Ignition Temp	>400 °C
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	800 kg/m ³
Specific Heat	No Data Available
Molecular Weight	136.15
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	-1.7 log Pow (23 degC)
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	No Data Available
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Dust explosion possible if in powder or granular form, mixed with air. If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.
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	No information available.
Reactions That Release Gases or Vapours	No information available.
Release of Invisible Flammable Vapours and Gases	No information available.

10. STABILITY AND REACTIVITY

Chemical Stability	Product is stable under normal conditions of use, storage and temperature.
Conditions to Avoid	Avoid excessive heat, direct sunlight, static discharges, generating dust, moisture and high temperatures.
Materials to Avoid	Incompatible with oxidising agents, acid chlorides and acid anhydrides.
Hazardous Decomposition Products	Oxides of carbon.
Hazardous Polymerisation	Hazardous polymerisation will not occur.

11. TOXICOLOGICAL INFORMATION

General Information	A nuisance-causing concentration of airborne particles can be reached quickly when dispersed, especially if powdered. The substance is mildly irritating to the eyes and the respiratory tract.
Acute	
Ingestion	ACUTE TOXICITY: ORAL - Rat LD50 >5,110 mg/kg
Other	ACUTE TOXICITY: DERMAL - Rabbit LD50 >10,000 mg/kg
Carcinogen Category	No

12. ECOLOGICAL INFORMATION

Ecotoxicity	Not toxic (Not T). ACUTE TOXICITY: FISH 96hr LC50 >100 mg/L (OECD 203) ACUTE TOXICITY: ALGAE 72hr EC50 >100 mg/L (OECD 201)
Persistence/Degradability	Readily biodegradable. Not persistent (Not P).
Mobility	The product is soluble in water.
Environmental Fate	Avoid release to the environment.
Bioaccumulation Potential	Not bioaccumulative (Not B).
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	Dispose of in accordance with all local, state and federal regulations. All empty packaging should be disposed of in accordance with Local, State, and Federal Regulations or recycled/reconditioned at an approved facility.
Special Precautions for Land Fill	Contact a specialist disposal company or the local waste regulator for advice.

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

Proper Shipping Name	PENTAERYTHRITOL
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

Land Transport (Malaysia)

ADR

Proper Shipping Name	PENTAERYTHRITOL
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

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	PENTAERYTHRITOL
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

Land Transport (United States of America)

US DOT

Proper Shipping Name	PENTAERYTHRITOL
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

Sea Transport

IMDG Code

Proper Shipping Name	PENTAERYTHRITOL
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

Air Transport

IATA DGR

Proper Shipping Name PENTAERYTHRITOL
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

National Transport Commission (Australia)

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 Assessed

National/Regional Inventories

Australia (AICS) Listed
Canada (DSL) Listed
Canada (NDSL) Not Determined
China (IECSC) Listed
Europe (EINECS) Not Determined
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	PENTAE1000, PENTAE1001, PENTAE1002, PENTAE1003, PENTAE1004, PENTAE1005, PENTAE1006, PENTAE1007, PENTAE1008, PENTAE1009, PENTAE1010, PENTAE1011, PENTAE1012, PENTAE1013, PENTAE1014, PENTAE1015, PENTAE1016, PENTAE1017, PENTAE1018, PENTAE1019, PENTAE1020, PENTAE1021, PENTAE1022, PENTAE1023, PENTAE1024, PENTAE1025, PENTAE1026, PENTAE1027, PENTAE1028, PENTAE1029, PENTAE1030, PENTAE1031, PENTAE1032, PENTAE1033, PENTAE1034, PENTAE1035, PENTAE1036, PENTAE1037, PENTAE1038, PENTAE1039, PENTAE1040, PENTAE1041, PENTAE1042, PENTAE1043, PENTAE1044, PENTAE1045, PENTAE1046, PENTAE1047, PENTAE1048, PENTAE1049, PENTAE1050, PENTAE1051, PENTAE1500, PENTAE2000, PENTAE2500, PENTAE3000, PENTAE4000, PENTAE4001, PENTAE4002, PENTAE4500, PENTAE5000, PENTAE6000, PENTAE6100, PENTAE6200, PENTAE6500, PENTAE6600, PENTAE7000, PENTAE7001, PENTAE7100, PENTAE7101, PENTAE8000, PENTAE8100, PENTAE8200, PENTAE8300, PENTAE8400, PENTAE9000, PENTAE9700, PENTAE9800, PENTAE9900
Revision	2
Revision Date	09 Oct 2015
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</p>

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