

## 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name</b>	<b>CALCIUM NITRATE TETRAHYDRATE</b>			
<b>Other Names</b>	Calcium Dinitrate; Calcium dinitrate tetrahydrate; calcium II nitrate, tetrahydrate (1:2:4); Calcium Nitrate, 4-Hydrate; Nitric acid, calcium (II) salt			
<b>Uses</b>	No Data Available			
<b>Chemical Family</b>	No Data Available			
<b>Chemical Formula</b>	$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$			
<b>Chemical Name</b>	Calcium Nitrate Tetrahydrate			
<b>Product Description</b>	No Data Available			
<b>Contact Information</b>	<b>Australia</b>	<b>Location</b>	<b>Telephone</b>	<b>Ask For</b>
	Rural Liquid Fertilisers Pty Ltd	61 Dowd Street Welshpool WA 6106	+61 1800 753 000	Technical Officer

## 2. HAZARDS IDENTIFICATION

<b>ADG Code</b>	Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).
<b>ASCC Hazardous Classification</b>	NOT Hazardous according to the criteria of ASCC [NOHSC:1008(2004)]
<b>Categories</b>	
<b>Risk Phrases</b>	
<b>Safety Phrases</b>	
<b>HSNO Hazard Classification</b>	5.1.1C; 6.1D; 6.3B; 6.4A
<b>Poisons Schedule (Aust)</b>	No Data Available

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Calcium Nitrate	$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$	13477-34-4	98.0 - 100.0 %

## 4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure:

<b>Swallowed</b>	Rinse mouth with water. If swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention.
<b>Eyes</b>	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
<b>Skin</b>	Remove contaminated clothing. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if symptoms occur.
<b>Inhaled</b>	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Advice to Doctor</b>	Treat symptomatically based on judgement of doctor and individual reactions of patient.
<b>Medical Conditions Aggravated</b>	No information available on medical conditions aggravated by exposure to this product.

## 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	Clear fire area of all non-emergency personnel. Stay upwind. Keep out of low areas. Eliminate ignition sources. Move fire exposed containers from fire area if it can be done without risk. Do NOT move cargo if cargo has been exposed to heat.
<b>Flammability Conditions</b>	Not combustible, but substance is a strong oxidiser and its heat of reaction with reducing agents or combustibles may cause ignition.
<b>Extinguishing Media</b>	Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
<b>Fire and Explosion Hazard</b>	Can cause explosions in contact with combustible dusts or vapors; occasionally explosive by shock or friction. Sensitive to mechanical impact. Exposure to heat may result in build-up of dangerous pressures.
<b>Hazardous Products of Combustion</b>	No Data Available
<b>Special Fire Fighting Instructions</b>	HAZCHEM: 1Z Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment. Dam fire control water for later disposal.
<b>Personal Protective Equipment</b>	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) or chemical splash suit.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	1Z

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Avoid accidents, clean up immediately. Slippery when spilt. Eliminate all sources of ignition. Increase ventilation. Avoid generating dust. Use clean, non-sparking tools and equipment. Do NOT contaminate. Keep combustibles away from spilled material.
<b>Clean Up Procedures</b>	Sweep up and containerise for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.
<b>Containment</b>	Stop leak if safe to do so. Isolate the danger area.
<b>Decontamination</b>	Small amounts of residue may be flushed to sewer with plenty of water.
<b>Environmental Precautionary Measures</b>	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
<b>Evacuation Criteria</b>	Evacuate all unnecessary personnel.
<b>Personal Precautionary Measures</b>	Do NOT touch damaged containers or spilled material unless wearing appropriate protective clothing as listed in section 8.

## 7. HANDLING AND STORAGE

### Handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Protect against physical damage and moisture.

### 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 as listed in section 10. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidisable materials. This product has a UN classification of 1454 and a Dangerous Goods Class 5.1 (Oxidiser) according to The Australian Code for the Transport of Dangerous Goods By Road and Rail.

### Container

Store in original packaging as approved by manufacturer. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

## 8. EXPOSURE CONTROLS / PROTECTION

### General

No exposure standard has been established for this product by the Australian Safety and Compensation Council (ASCC). However, the exposure standard for dust not otherwise specified is 10mg/m<sup>3</sup> (for inspirable dust) and 3mg/m<sup>3</sup> (for respirable dust).

### 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. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

### Personal Protection Equipment

**RESPIRATOR:** For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

**WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres (AS1715/1716).

**EYES:** Use chemical safety goggles (AS1336/1337).

**HANDS:** Wear protective gloves (AS2161).

**CLOTHING:** Long-sleeved protective coveralls and safety footwear (AS3765/2210).

### Work Hygienic Practices

Maintain eye wash fountain and quick-drench facilities in work area.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State Appearance</b>	Solid
<b>Appearance</b>	Crystals
<b>Odour</b>	Odourless
<b>Colour</b>	White
<b>pH</b>	No Data Available
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling/Melting Point</b>	No Data Available
<b>Solubility</b>	121g/100g Water
<b>Freezing Point</b>	No Data Available
<b>Specific Gravity</b>	No Data Available
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	2.36
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	0% (21°C)
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No Data Available
<b>Potential for Dust Explosion</b>	No Data Available
<b>Fast or Intensely Burning Characteristics</b>	Can cause explosions in contact with combustible dusts or vapors.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No Data Available
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	Occasionally explosive by shock or friction. Sensitive to mechanical impact.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	No Data Available
<b>Reactions That Release Gases or Vapours</b>	No Data Available
<b>Release of Invisible Flammable Vapours and Gases</b>	No Data Available

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	Oxidising Solid.
<b>Chemical Stability</b>	Unstable. Exposure to heat may result in build-up of dangerous pressures. A strong oxidiser, reacts violently upon contact with many organic substances, particularly textile and paper.
<b>Conditions to Avoid</b>	Heat, flame, ignition sources, shock and incompatibles.
<b>Materials to Avoid</b>	Combustible materials, organic materials, powdered metals, ammonia, hydrazine, reducing agents.
<b>Hazardous Decomposition Products</b>	Oxides of nitrogen.
<b>Hazardous Polymerisation</b>	No Data Available

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	Oral rat LD50: 3900 mg/kg. Irritation eye rabbit 500mg/24H severe.
<b>Eye Irritant</b>	Causes irritation, redness, and pain.
<b>Ingestion</b>	Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.
<b>Inhalation</b>	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
<b>Skin Irritant</b>	Causes irritation to skin. Symptoms include redness, itching, and pain.
<b>Carcinogen Category</b>	0

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	The LC50/96-hour values for fish are over 100 mg/l.
<b>Persistence/Degradability</b>	No Data Available
<b>Mobility</b>	Soluble in water.
<b>Environmental Fate</b>	No Data Available
<b>Bioaccumulation Potential</b>	No Data Available
<b>Environmental Impact</b>	No Data Available

## 13. DISPOSAL CONSIDERATIONS

<b>General Information</b>	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.
<b>Special Precautions for Land Fill</b>	Contact a specialist disposal company or the local waste regulator for advice.

## 14. TRANSPORT INFORMATION

**ADG Code** Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).

### Air

#### IATA

**Proper Shipping Name** CALCIUM NITRATE  
**Class** 5.1 Oxidising Substances  
**Subsidiary Risk(s)** No Data Available  
**UN Number** 1454  
**Hazchem** 1Z  
**Pack Group** III  
**Special Provision** No Data Available

### Land

#### Australia: ADG Code

**Proper Shipping Name** CALCIUM NITRATE  
**Class** 5.1 Oxidising Substances  
**Subsidiary Risk(s)** No Data Available  
**EPG** 31 Oxidising Substances  
**UN Number** 1454  
**Hazchem** 1Z  
**Pack Group** III  
**Special Provision** No Data Available

#### Indonesia: NZS5433

**Proper Shipping Name** CALCIUM NITRATE  
**Class** 5.1 Oxidising Substances  
**Subsidiary Risk(s)** No Data Available  
**EPG** 31 Oxidising Substances  
**UN Number** 1454  
**Hazchem** 1Z  
**Pack Group** III  
**Special Provision** No Data Available

#### New Zealand: NZS5433

**Proper Shipping Name** CALCIUM NITRATE  
**Class** 5.1 Oxidising Substances  
**Subsidiary Risk(s)** No Data Available  
**EPG** 31 Oxidising Substances  
**UN Number** 1454  
**Hazchem** 1Z  
**Pack Group** III  
**Special Provision** No Data Available

### Sea

#### IMDG Code

**Proper Shipping Name** CALCIUM NITRATE  
**Class** 5.1 Oxidising Substances  
**Subsidiary Risk(s)** No Data Available  
**UN Number** 1454  
**Hazchem** 1Z  
**Pack Group** III  
**Special Provision** No Data Available  
**EMS** FA,SQ  
**Marine Pollutant** No

**15. REGULATORY INFORMATION**

<b>General Information</b>	No Data Available
<b>EPA (New Zealand)</b>	<b>Hazardous Substances and New Organisms Act (HSNO)</b>
	Approval Code: HSR003543
<b>Poisons Schedule (Aust)</b>	No Data Available
<b>AICS Name</b>	Nitric acid, calcium salt, tetrahydrate

**16. OTHER INFORMATION**

<b>Key/Legend</b>	<	Less Than
	>	Greater Than
	<b>AICS</b>	Australian Inventory of Chemical Substances
	<b>atm</b>	Atmosphere
	<b>CAS</b>	Chemical Abstracts Service (Registry Number)
	<b>cm<sup>2</sup></b>	Square Centimetres
	<b>CO<sub>2</sub></b>	Carbon Dioxide
	<b>COD</b>	Chemical Oxygen Demand
	<b>deg C (°C)</b>	Degrees Celcius
	<b>EPA (New Zealand)</b>	Environmental Protection Authority of New Zealand
	<b>deg F (°F)</b>	Degrees Farenheit
	<b>g</b>	Grams
	<b>g/cm<sup>3</sup></b>	Grams per Cubic Centimetre
	<b>g/l</b>	Grams per Litre
	<b>HSNO</b>	Hazardous Substance and New Organism
	<b>IDLH</b>	Immediately Dangerous to Life and Health
	<b>immiscible</b>	Liquids are insoluable in each other
	<b>inHg</b>	Inch of Mercury
	<b>inH<sub>2</sub>O</b>	Inch of Water
	<b>K</b>	Kelvin
	<b>kg</b>	Kilogram
	<b>kg/m<sup>3</sup></b>	Kilograms per Cubic Metre
	<b>lb</b>	Pound
	<b>LC50</b>	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.
	<b>LD50</b>	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.
	<b>ltr or L</b>	Litre
	<b>m<sup>3</sup></b>	Cubic Metre
	<b>mbar</b>	Millibar
	<b>mg</b>	Milligram
	<b>mg/24H</b>	Milligrams per 24 Hours
	<b>mg/kg</b>	Milligrams per Kilogram
	<b>mg/m<sup>3</sup></b>	Milligrams per Cubic Metre
	<b>Misc or Miscible</b>	Liquids form one homogeneous liquid phase regardless of the amount of either component present.
	<b>mm</b>	Millimetre
	<b>mmH<sub>2</sub>O</b>	Millimetres of Water
	<b>mPa.s</b>	Millipascals per Second

<b>N/A</b>	Not Applicable
<b>NIOSH</b>	National Institute for Occupational Safety and Health
<b>NOHSC</b>	National Occupational Health and Safety Commission
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>Oz</b>	Ounce
<b>PEL</b>	Permissible Exposure Limit
<b>Pa</b>	Pascal
<b>ppb</b>	Parts per Billion
<b>ppm</b>	Parts per Million
<b>ppm/2h</b>	Parts per Million per 2 Hours
<b>ppm/6h</b>	Parts per Million per 6 Hours
<b>psi</b>	Pounds per Square Inch
<b>R</b>	Rankine
<b>RCP</b>	Reciprocal Calculation Procedure
<b>STEL</b>	Short Term Exposure Limit
<b>TLV</b>	Threshold Limit Value
<b>tne</b>	Tonne
<b>torr</b>	Millimetre of Mercury
<b>TWA</b>	Time Weighted Average
<b>ug/24H</b>	Micrograms per 24 Hours
<b>UN</b>	United Nations
<b>wt</b>	Weight

**Disclaimer**

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**Revision: 1**

**SDS Date:** 04 October 2017

**End of SDS**