

1. IDENTIFICATION

Product Name	Calcium Nitrate Tetrahydrate
Other Names	Calcium Dinitrate; Calcium dinitrate tetrahydrate; calcium II nitrate, tetrahydrate (1:2:4); Calcium Nitrate, 4-Hydrate; Nitric acid, calcium (II) salt; Nitric acid, calcium salt, tetrahydrate
Uses	No Data Available
Chemical Family	No Data Available
Chemical Formula	Ca(NO ₃) ₂ 4H ₂ O
Chemical Name	Calcium Nitrate Tetrahydrate
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.	2132A E. Dominguez Street Carson CA 90810 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	No. 8, Block G, Ground Floor, Taipan 2 Jalan PJU 1A/3 Ara Damansara 47301, Petaling Jaya, Selangor, Malaysia	+60-3-7843-6833

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) No Data Available

Globally Harmonised System

Hazard Classification Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Hazard Categories

Acute Toxicity (Oral) - Category 4
 Serious Eye Damage/Irritation - Category 1

Pictograms



Signal Word

Danger

Hazard Statements

H302 Harmful if swallowed.
H318 Causes serious eye damage.

Precautionary Statements

Prevention	P264 P270 P280	Wash exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection.
Response	P301 + P312 P330 P305 + P351 + P338	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Disposal	P310 P501	Immediately call a POISON CENTER or doctor/physician. 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	5.1.1C	Oxidising substances that are liquids or solids: low hazard
Health Hazards	6.1D 6.3B 6.4A	Substances that are acutely toxic - Harmful Substances that are mildly irritating to the skin Substances that are irritating to the eye

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Calcium Nitrate	Ca(NO3)24H2O	13477-34-4	98.0 - 100.0 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Rinse mouth with water. If swallowed, do NOT induce vomiting. Never give anything by mouth to an unconscious

Swallowed	person. Get medical attention.
Eye	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Skin	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.
Inhaled	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of patient.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by 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. 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.
Flammability Conditions	Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.
Extinguishing Media	Use any means suitable for extinguishing surrounding fire. Water spray may be used to keep fire exposed containers cool.
Fire and Explosion Hazard	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.
Hazardous Products of Combustion	No Data Available
Special Fire Fighting Instructions	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.
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) or chemical splash suit.
Flash Point	No Data Available
Lower Explosion Limit	No Data Available
Upper Explosion Limit	No Data Available
Auto Ignition Temperature	No Data Available
Hazchem Code	1Z

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	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.
Clean Up Procedures	Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.
Containment	Stop leak if safe to do so. Isolate the danger area.
Decontamination	Small amounts of residue may be flushed to sewer with plenty of water.
Environmental Precautionary Measures	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Evacuation Criteria	Evacuate all unnecessary personnel.
Personal Precautionary Measures	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 oxidizable 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 / PERSONAL 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 ³ (for inspirable dust) and 3mg/m ³ (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

Physical State	Solid
Appearance	Crystals
Odour	Odourless
Colour	White
pH	No Data Available
Vapour Pressure	No Data Available
Relative Vapour Density	No Data Available
Boiling Point	No Data Available
Melting Point	45 °C
Freezing Point	No Data Available
Solubility	121g/100g Water
Specific Gravity	No Data Available
Flash Point	No Data Available
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available

Decomposition Temperature	No Data Available
Density	2.36
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
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	0% (21°C)
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	No Data Available
Fast or Intensely Burning Characteristics	Can cause explosions in contact with combustible dusts or vapors.
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	Occasionally explosive by shock or friction. Sensitive to mechanical impact.
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours	No Data Available
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

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

11. TOXICOLOGICAL INFORMATION

General Information	Oral rat LD50: 3900 mg/kg. Irritation eye rabbit 500mg/24H severe.
EyeIrritant	Causes irritation, redness, and pain.
Ingestion	Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.
Inhalation	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
SkinIrritant	Causes irritation to skin. Symptoms include redness, itching, and pain.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

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

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

Land Transport (Indonesia)

NZS5433

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

Land Transport (New Zealand)

NZS5433

Proper Shipping Name	CALCIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available

EPG	31 Oxidizing Substances
UN Number	1454
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

Land Transport (United States of America)

US DOT

Proper Shipping Name	CALCIUM NITRATE
Class	5.1 Oxidising Substances
Subsidiary Risk(s)	No Data Available
ERG	140 Oxidizers
UN Number	1454
Hazchem	1Z
Pack Group	III
Special Provision	No Data Available

Sea Transport

IMDG

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

Air Transport

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

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
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Poisons Schedule (Aust)

No Data Available

Environmental Protection Authority (New Zealand)

Hazardous Substances and New Organisms Amendment Act 2015

Approval Code HSR003543

National/Regional Inventories

Australia (AICS)	Listed
Canada (DSL)	Not Determined
Canada (NDSL)	Not Determined
China (IECSC)	Not Determined
Europe (EINECS)	Not Determined
Europe (REACH)	Not Determined
Japan (ENCS/METI)	Not Determined
Korea (KECI)	Not Determined
Malaysia (EHS Register)	Not Determined
New Zealand (NZIoC)	Not Determined
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

CANITR0100, CANITR0200, CANITR0300, CANITR0400, CANITR0500, CANITR0700, CANITR0800, CANITR0900, CANITR1000, CANITR1001, CANITR1002, CANITR1003, CANITR1004, CANITR1005, CANITR1006, CANITR1007, CANITR1008, CANITR1009, CANITR1010, CANITR1011, CANITR1012, CANITR1013, CANITR1014, CANITR1015, CANITR1016, CANITR1017, CANITR1018, CANITR1019, CANITR1100, CANITR1101, CANITR1200, CANITR1201, CANITR1300, CANITR1400, CANITR1500, CANITR1600, CANITR1800, CANITR1900, CANITR2200, CANITR2201, CANITR2202, CANITR2500, CANITR2501, CANITR2600, CANITR2900, CANITR3000, CANITR3001, CANITR3002, CANITR3003, CANITR3004, CANITR3005, CANITR3006, CANITR3100, CANITR3200, CANITR3300, CANITR3400, CANITR3500, CANITR3501, CANITR3502, CANITR3700, CANITR3800, CANITR3900, CANITR4000, CANITR4100, CANITR4200, CANITR4300, CANITR4600, CANITR4700, CANITR4800, CANITR4900, CANITR5100, CANITR5200, CANITR5300, CANITR5400, CANITR5500, CANITR5800, CANITR5801, CANITR5900, CANITR5901, CANITR6300, CANITR6500, CANITR6900, CANITR7000, CANITR7500, CANITR8000, CANITR8001, CANITR8002, CANITR8500, CANITR8700, CANITR8800, CANITR8900, CANITR9000, CANITR9400, CANITR9600, CANITR9700, CANITR9800, CANITR9900, CANITR9901, CANITR1802, CANITR1803, CANITR1804, CANITR1805, CANITR1806, CANITR1807, CANITR1808, CANITR1809, CANITR1215, CANITR1216, CANITR0401, CANITR0502, CANITR0503, CANITR9902, CANITR4301, CANITR4302, CANITR1217

Revision

2

Revision Date

01 Jan 2013

< Less Than

Key/Legend

> 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 Heath 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