

Precautionary statement(s) Prevention P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire. P231 + P232 Handle under inert gas. Protect from moisture. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. Response P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. Storage P402 + P404 Store in a dry place. Store in a closed container. P422 Store contents under inert gas. Disposal P501 Dispose of contents/ container to an approved waste disposal plant.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Name	CAS	Proportion
	Calcium	7440-70-2	100 %

4. FIRST AID MEASURES

Inhalation	If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms persist seek medical attention.
Ingestion	Do not induce vomiting. Wash out mouth thoroughly with water. If symptoms develop seek medical attention.
Skin	Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.
Eye	If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing for several minutes until all contaminants are washed out completely. Seek medical attention.
First Aid Facilities	Eye wash fountain, safety shower and normal washroom facilities.
Advice to Doctor	Treat symptomatically.
Other Information	For advice in an emergency, contact a Poisons Information Centre

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media	Use carbon dioxide or dry chemical.
Hazards from Combustion Products	Under fire conditions this product may emit toxic and/or irritating fumes and gases including carbon monoxide and carbon dioxide.
Specific Hazards	Moderate fire hazard, when heated or in intimate contact with moisture or acids, evolves hydrogen which is a highly explosive gas. Ignites in fluorine, warm ammonia or in chlorine trifluoride. Moderate explosion hazard, in intimate contact with very powerful oxidising agents, e.g. chlorine trifluoride, chlorine, fluorine, oxygen, silicon, sulphur and vanadium oxide. Explodes with nitrogen dioxide. Reacts explosively with lead chloride and phosphorus pentoxide. Reaction with water or dilute acids may be violent. Dangerous reaction with moisture or acids to liberate large quantities of hydrogen; can develop explosive pressure in containers.
Hazchem Code	4W
Precautions in connection with Fire	Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. In case of fire the product may be violently or explosively reactive. Use water spray to disperse vapours. This product should be

prevented from entering drains and watercourses.

Unsuitable

Extinguishing Media Do not use water jet.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Remove all sources of ignition. Increase ventilation. Evacuate all unprotected personnel. Do not breathe dust. Wear respiratory protection and full protective clothing to minimise exposure. Sweep up material avoiding dust generation - dampen spilled material with water if suitable to avoid airborne dust, OR where possible use dustless methods such as vacuum to collect the material; then transfer material in to suitable vapour tight labelled containers for subsequent recycling or disposal. Dispose of waste according to applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use only in a well ventilated area. Keep containers sealed when not in use. Prevent the build up of dust in the work atmosphere. Avoid inhalation of dust, and skin or eye contact. Establish good housekeeping practices. Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. Maintain high standards of personal hygiene i.e. Washing hands prior to eating, drinking, smoking or using toilet facilities.

Conditions for Safe Storage

Store in a well ventilated area away from heat and sources of ignition, out of direct sunlight and moisture. Take precautions against static electricity discharges. Use proper grounding procedures. Store away from incompatible materials such as materials that support combustion (oxidising materials). Store in suitable, labelled containers. Inspect periodically for deficiencies such as damage or leaks. Have appropriate fire extinguishers available in and near the storage area. For information on the handling of Combustible dusts and grounding procedure reference should be made to Australian Standard AS/NZS 4745.2004 - 'Code of Practice for Handling Combustible Dusts'.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National Exposure Standards

No exposure standards have been established for the mixture by Safe Work, Australia or the Occupational Safety and Health Service (OSH) of the New Zealand Department of Labour. However, over-exposure to some industrial chemicals may result in enhancement of pre-existing adverse medical conditions and/or allergic reactions and should be kept to the least possible levels.

The exposure limits for dust not otherwise specified are as follows:

Safe Work, Australia exposure standards:

Dust TWA 10 mg/m³ (inspirable fraction)

New Zealand Workplace Exposure Standards (OSH):

Particulates TWA 10 mg/m³ (inhalable) TWA 3 mg/m³ (respirable)

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Biological Limit Values

No biological limits allocated.

Engineering Controls

Provide sufficient ventilation to keep airborne levels as low as possible. Where dusts are generated, particularly in enclosed areas, and natural ventilation is inadequate, a local exhaust ventilation system is required.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate filter should be used.

Eye Protection

Safety glasses with side shields or chemical goggles should be worn.

Hand Protection	Wear gloves of impervious material e.g. laminated film or other suitable, impervious gloves.
Body Protection	Suitable protective work wear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.
Hygiene Measures	Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Soft metal
Odour	Not available
Melting Point	842°C
Boiling Point	1484°C
Solubility in Water	Reacts with water.
Specific Gravity	1.540
pH Value	Not available
Vapour Pressure	10 mmHg at 983°C
Vapour Density (Air=1)	Not available
Colour	Silver-white
Flash Point	Not available
Flammability	Contact with moisture or water liberates flammable hydrogen gas.
Auto-Ignition Temperature	Not available
Flammable Limits - Lower	Not available
Flammable Limits - Upper	Not available

10. STABILITY AND REACTIVITY

Chemical Stability	Unstable. May ignite spontaneously if exposed to air or kept in the presence of moisture.
Conditions to Avoid	Moisture, extremes of temperature and direct sunlight. Any contact with water must be avoided.
Incompatible Materials	Reacts with acids, chlorine, chlorine trifluoride, fluorine, oxygen, silicon, sulfur, vanadium oxide, sulfur and water, and water. Incompatible with strong oxidizing agents and alcohols. Contact with alkali hydroxides or carbonates may cause detonation.
Hazardous Decomposition Products	Reactions with air or water will generate hydrogen gas, calcium oxide and calcium hydroxide.
Hazardous Polymerization	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicology Information	No toxicity data available for this product.
Inhalation	Inhalation of dusts may irritate the respiratory system.

Ingestion	Although not generally considered toxic, in finely divided form, would be expected to release hydrogen in the stomach, leading to possible stomach damage. Symptoms may include irritation or burning of the soft mucous tissues, severe stomach disturbance and vomiting.
Skin	Reaction with moisture on skin may cause irritation.
Eye	Reaction with moisture in the eyes may cause severe irritation.
Chronic Effects	It is reported that particles embedded under the skin may cause prolonged gaseous blisters. Prolonged inhalation of calcium dust may cause respiratory tract inflammation and lung damage.

12. ECOLOGICAL INFORMATION

Ecotoxicity	No ecological data are available for this material.
Persistence / Degradability	Not available
Mobility	Not available
Bioaccumulative Potential	Not available
Environment Protection	Do not discharge this material into waterways, drains and sewers.

13. DISPOSAL CONSIDERATIONS

Disposal Considerations	<p>The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.</p> <p>Product Disposal:</p> <p>Product wastes are controlled wastes and should be disposed of in accordance with all applicable local and national regulations. This product can be disposed through a licensed commercial waste collection service. The product should be rendered non-hazardous before being sent to a licensed landfill facility.</p>
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14. TRANSPORT INFORMATION

Transport Information	<p>New Zealand Road and Rail:</p> <p>This material is classified as Dangerous Goods Division 4.3 - Dangerous When Wet Substance according to NZS 5433:2012 Transport of Dangerous Goods on Land. Must not be loaded in the same freight container or on the same vehicle with:</p> <ul style="list-style-type: none"> - Class 1, Explosives - Division 5.1, Oxidising substances - Division 5.2, Organic peroxides - Class 7, Radioactive materials unless specifically exempted. <p>Must not be loaded in the same freight container; and on the same vehicle must be separated horizontally by at least 3 metres unless all but one are packed in separate freight containers with:</p> <ul style="list-style-type: none"> - Class 3, Flammable Liquids - Class 8, Corrosive substances <p>Goods of packing group II or III may be loaded in the same freight container or on the same vehicle if transported in segregation devices with:</p> <ul style="list-style-type: none"> - Class 3, Flammable liquids - Division 5.1, Oxidising substances - Division 5.2, Organic peroxides - Class 8, Corrosive substances
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Marine Transport (IMO/IMDG):
 Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
 UN-No: 1401
 Proper Shipping Name: CALCIUM
 Class: 4.3
 Packaging Group: II
 EMS No.: F-G, S-O
 Special provisions: None

Air Transport (ICAO/IATA):
 Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.
 UN-No: 1401
 Proper Shipping Name: CALCIUM
 Class: 4.3
 Packaging Group: II
 Label: Dangerous When Wet
 Packaging Instructions (passenger & cargo): 484
 Packaging Instructions (cargo only): 490
 Special provisions: None

U.N. Number	1401
Proper Shipping Name	CALCIUM
DG Class	4.3
Hazchem Code	4W
Packaging Method	3.8.4.1
Packing Group	II
EPG Number	4A3
IERG Number	26
IMDG Marine Pollutant (MP)	No

15. REGULATORY INFORMATION

Regulatory Information	Australia: Not classified as Hazardous according to criteria of National Occupational Health & Safety Commission (NOHSC), Australia. Not classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
Poisons Schedule	Not Scheduled
National and or International Regulatory Information	New Zealand: Classified as Hazardous according to the New Zealand Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001. All components of this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or exempted. HSNO (CCID) Name: Calcium
HSNO Approval Number	HSR001052
Hazard Category	Highly Flammable
AICS (Australia)	All components of this product are listed on the Australian Inventory of Chemical Substances (AICS).

16. Disclaimer

The information above is believed to be accurate and represents the best information currently available to us. However, the information is not a guarantee expressed or implied, with respect to such information, and we assume no liability resulting from its use. Anyone using the chemical described here should ensure that he or she has the appropriate training and has the expertise and any equipment required for safe handling. If clarification or further information is required, please contact ECP Ltd or refer to the official handler of dangerous goods within your own company. The user should also make their own investigations to determine the suitability of the product for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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