

Safety Data Sheet **CALCIUM METAL Dry Granules**

SDS no. VAJVVGWU • Version 1.0 • Date of issue: 2024-01-09

SECTION 1: Identification

GHS Product identifier

Product name **CALCIUM METAL Dry Granules**

Other means of identification

CALCIUM METAL Dry Granules LR
CALCIUM METAL Dry Granules TG

Recommended use of the chemical and restrictions on use

Alloying agent for aluminium, copper and lead; reducing agent for beryllium; deoxidiser for alloys. Dehydrating oils. Decarburisation and desulfurisation of iron and its alloys, getter in vacuum tubes. Separation of nitrogen from argon. Fertiliser ingredient. Reducing agent in preparation of chromium metal powder, thorium, zirconium and uranium and laboratory reagent.

Supplier's details

Name	ChemSupply Australia Pty Ltd
Address	38-50 Bedford Street 5013 Gillman South Australia Australia
Telephone	08 8440 2000
email	www.chemsupply.com.au

Emergency phone number

CHEMCALL 1800 127 406 (Australia) / +64-4-917-9888 (International)

SECTION 2: Hazard identification

General hazard statement

Classified as dangerous goods according to the Australian Dangerous Goods Code (ADG).

Classified as Hazardous according to the Globally Harmonised System of classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 7

- Substances and mixtures, which in contact with water, emit flammable gases, Cat. 2

GHS label elements, including precautionary statements

Pictograms



Signal word

Danger

Hazard statement(s)

H261

In contact with water releases flammable gas

Precautionary statement(s)

P223

Do not allow contact with water.

P231+P232

Handle and store contents under inert gas/.... Protect from moisture.

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P302+P335+P334

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water [or wrap in wet bandages].

P370+P378

In case of fire: Use agents recommended in Section 5 of SDS for extinction

P402+P404

Store in a dry place. Store in a closed container.

P501

Dispose of contents/container to an approved waste disposal facility

SECTION 3: Composition/information on ingredients

Mixtures

Molecular weight: 40.08

Components

Component	CAS no.	Concentration
CALCIUM (EC no.: 231-179-5; Index no.: 020-001-00-X)	7440-70-2	100 % (weight)
CLASSIFICATIONS: Substances and mixtures, which in contact with water, emit flammable gases, Cat. 2. HAZARDS: H261 - In contact with water releases flammable gas.		

SECTION 4: First-aid measures

Description of necessary first-aid measures

General advice

First Aid Facilities: Maintain eyewash fountain in work area.

If inhaled

f inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Immediately obtain medical aid if cough or other symptoms appear.

In case of skin contact

Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages. If rapid recovery does not occur, obtain medical attention.

In case of eye contact

Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. In all cases of eye contamination it is a sensible precaution to seek medical advice.

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If swallowed

Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically based on judgement of doctor and individual reactions of the patient.

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor.

SECTION 5: Fire-fighting measures

Suitable extinguishing media

DO NOT USE WATER, FOAM, OR CO₂.

Small fire: Use dry chemical, soda ash, lime or dry sand.

If safe to do so, move undamaged containers from the fire area.

Large fire: Use DRY sand, dry chemical, soda ash or lime or withdraw and let the fire burn.

Cool containers with flooding quantities of water until well after the fire is out. Avoid getting water inside the containers.

Specific hazards arising from the chemical

Emits toxic gases under fire conditions.

Produce flammable substances on contact with water. May ignite on contact with water or moist air. May react violently or explosively on contact with water. May be ignited by heat, sparks or flame. May re-ignite after fire is extinguished. Some are kept in or under flammable liquids. Fire will produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Run-off may create multiple fire or explosion hazard.

Special protective actions for fire-fighters

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

Further information

NEVER USE WATER OR CHLORINATED HYDROCARBON-TYPE FIRE EXTINGUISHERS.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid sources of ignition. Use non sparking tools. Use in ventilated areas or in fumehood. Do NOT add water.

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks or flame) within at least 25m. Do NOT touch or walk through spilled material. Stop leak if safe to do so. Prevent entry into waterways, drains, confined areas.

DO NOT GET WATER inside containers or in contact with substance.

Small spill: Cover with DRY earth, sand or other non-combustible material followed by a plastic sheet to minimize spreading or contact with rain.

Large Spill: SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

SECTION 7: Handling and storage

Precautions for safe handling

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Only use in well-ventilated areas. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure. DO NOT ingest. NEVER ADD WATER TO THIS MATERIAL.

Conditions for safe storage, including any incompatibilities

Store away from water, acids, oxidising agents and alcohols. Store away from water and ignition sources.

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection

Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection

Wear suitable protective clothing and gloves to prevent skin contact. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Respiratory protection

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Solid
Appearance	Moderately soft, silver-white granular metal.
Color	No data available.
Odor	Odourless.
Odor threshold	No data available.
Melting point/freezing point	842 - 850 °C
Boiling point or initial boiling point and boiling range	1484 °C
Flammability	HIGHLY FLAMMABLE.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	No data available.
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.

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Oxidizing properties
pH
Kinematic viscosity
Solubility

No data available.
14 (4 g/l, H₂O, 20 °C)
No data available.
Solubility in Water: Slowly decomposes in water to liberate flammable hydrogen gas. (4 g/l 20 °C) Solubility in Organic Solvents: Insoluble in and inert towards benzene and kerosene. Dissolves in liquid ammonia to form a blue solution.
No data available.
10 mm @ 983 °C
No data available.
[14] Specific Gravity: 1.54 @ 20 °C
1.4 (air=1)
No data available.

Partition coefficient n-octanol/water (log value)
Vapor pressure
Evaporation rate
Density and/or relative density
Relative vapor density
Particle characteristics

Supplemental information regarding physical hazard classes

No data available.

Further safety characteristics (supplemental)

Other Information: Soluble in acid. Sublimes above melting point in vacuum. Can be machined, extruded or drawn. Burns with crimson flame. Oxidises in air to form adherent bluish-gray protective film.
Sublimation point above melting point in vacuum.
Brinell hardness: 17

SECTION 10: Stability and reactivity

Reactivity

Reacts with incompatible materials

Chemical stability

Reacts readily or explosively with water producing highly flammable hydrogen gas. May ignite spontaneously if in air or in the presence of moisture.

Possibility of hazardous reactions

Reacts explosively with lead chloride, phosphorus pentoxide, chlorine trifluoride, chlorine, fluorine, oxygen, silicon, sulfur, vanadium trioxide and dinitrogen tetroxide. Reaction with water, alcohols or dilute acids may be violent. Ignites in fluorine, warm ammonia or in chlorine trifluoride. This material is a reducing agent and may react vigorously with oxidising materials. On reaction with water, weak alkalis are produced, hydrogen gas liberated and heat is generated. Reacts with halogens.

Conditions to avoid

Water (generation of hydrogen), moisture, air, ignition sources and incompatibles.

Incompatible materials

Lead chloride, phosphorus pentoxide, chlorine, fluorine, oxygen, silicon, sulfur, vanadium trioxide, dinitrogen tetroxide, alcohols, dilute acids, bases, warm ammonia, oxidizing agents, carbonates, halogens, chlorine trifluoride, air, water, moisture and mixtures containing water (e.g. aqueous solutions).

Hazardous decomposition products

Hydrogen, calcium hydroxide and calcium oxide.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity

Ingestion: Harmful if swallowed. Burns to mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract. In finely divided form, releases hydrogen in the stomach, leading to possible stomach damage. Symptoms may include irritation or burning of the soft mucous tissues, severe stomach disturbance, vomiting, abdominal pain and diarrhoea. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skins.

Inhalation: Harmful if inhaled. Toxic to lungs and mucous membranes. Inhalation of dust results in irritation to the mucous membranes and respiratory tract. Symptoms of exposure to the respiratory tract include burning sensation, coughing, sneezing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Severe over-exposure of the material may result in spasm, lung damage, choking, dyspnoea, inflammation and edema of the larynx and bronchi, chemical pneumonitis, pulmonary edema, unconsciousness or death. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skins.

Skin corrosion/irritation

Harmful if absorbed through the skin. Reaction with moisture on skin will cause irritation. Particles embedded under the skin may cause prolonged gaseous blisters.

Serious eye damage/irritation

Harmful when contact eyes. Corrosive to eyes. The amount of tissue damage depends on the length of contact. Reaction with moisture in the eyes will cause severe irritation.

Respiratory or skin sensitization

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive toxicity

No data available.

Summary of evaluation of the CMR properties

No data available.

Specific target organ toxicity (STOT) - single exposure

No data available.

Specific target organ toxicity (STOT) - repeated exposure

No data available.

Aspiration hazard

No data available.

Additional information

Chronic Effects: INHALATION: Prolonged inhalation of dust or fumes may cause severe mucous membrane irritation, spasm, edema of the larynx and bronchi, pulmonary edema, chemical pneumonitis. Metal fume fever may result from the inhalation of calcium fumes if calcium is heated to high temperatures. Symptoms include chills, fever, headache, tightness of the chest, coughing, weakness, dryness of nose and mouth, muscular pain, nausea and vomiting. Symptoms of metal fume fever occur about 4 to 12 hours after exposure and usually last about 24 hours. Recovery is complete with no apparent permanent disability.

INGESTION: Severe over exposure to calcium material causes burns to mucous membranes in the mouth, pharynx and gastrointestinal tract.

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SKIN: Repeated or prolonged skin contact results in skin burns.

EYES: Repeated or prolonged eye contact results in permanent eye injury including corneal damage or blindness.

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skins.

SECTION 12: Ecological information

Toxicity

No data available.

Persistence and degradability

Material reacts with water.

Bioaccumulative potential

No data available.

Mobility in soil

No mobility data available for this product.

Results of PBT and vPvB assessment

No data available.

Endocrine disrupting properties

No data available.

Other adverse effects

No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Other disposal recommendations

Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

ADG (Road and Rail)

UN Number: 1401

Class: 4.3

Packing Group: II

Proper Shipping Name: CALCIUM

Hazchem emergency action code (EAC)

4W

IMDG

UN Number: 1401

Class: 4.3

Packing Group: II

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EMS Number:
Proper Shipping Name: CALCIUM

IATA

UN Number: 1401
Class: 4.3
Packing Group: II
Proper Shipping Name: CALCIUM

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Australia SUSMP

Poison Schedule: NS

SECTION 16: Other information

Further information/disclaimer

ChemSupply Australia Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon ChemSupply Australia Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of ChemSupply Australia Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

Preparation information

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Standard for the Uniform Scheduling of Medicines and Poisons, Commonwealth of Australia

National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'

Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals', July 2020.

Safe Work Australia, 'National Guide for Classifying Hazardous Chemicals', July 2020.

Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants, December 2019

Safe Work Australia, Hazardous Chemical Information System (HCIS), hcis.safeworkaustralia.gov.au

IATA, Dangerous Goods Regulations (DGR)

IMO, International Maritime Dangerous Goods Code (IMDG)