1 Identification

Product identifier

Product name: Calcium shot

Stock number: 10126
CAS Number: 7440-70-2
EC number: 231-179-5
Index number: 020-001-00-X

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS02 Flame

Water-react. 2 H261 In contact with water releases flammable gas.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

GH502

Signal word Danger

Hazard statements

H261 In contact with water releases flammable gas.

Precautionary statements

P231+P232 Handle under inert gas. Protect from moisture.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P233 Keep container tightly closed.
P303+P353 In case of fire: Use for extinction: CO2, sand, extinguishing powder.
P402+P404 Store in a dry place. Store in a closed container.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

B6 - Reactive flammable material

3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:
7440-70-2 Calcium

Identification number(s):
EC number: 231-179-5
Index number: 020-001-00-X

4 First-aid measures

Description of first aid measures

After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

(Contd. on page 2)
5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents: Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents: Water

Special hazards arising from the substance or mixture:
If this product is involved in a fire, the following can be released:
Calcium oxide

Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.

Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:
Keep away from ignition sources.
Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Prevention of secondary hazards:
Keep away from ignition sources.

Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

Handling Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Reacts violently with water

Information about protection against explosions and fires:
Protect from humidity and water.

Conditions for safe storage, including any incompatibilities

Storage Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common storage facility:
Store away from air.
Store away from water/moisture.

Further information about storage conditions:
Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.

Maintain an ergonomically appropriate working environment.

Breathing equipment:
Use suitable respirator when high concentrations are present.

Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves: Nitrile rubber, NBR
Penetration time of glove material (in minutes) 480
Glove thickness 0.11 mm

Eye protection:
Safety glasses
Full face protection

Body protection: Protective work clothing.
9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
Form: Solid in various forms
Color: Silvery-white
Odor: Odorless
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition
Melting point/Melting range: 842 °C (1548 °F)
Boiling point/Boiling range: 1440 °C (2624 °F)
Sublimation temperature / start: Not determined

Flammability (solid, gaseous):
Contact with water liberates extremely flammable gases.

Ignition temperature:
Not determined

Decomposition temperature:
Not determined

Auto igniting:
Not determined.

Danger of explosion:
Not determined.

Explosion limits:
Lower: Not determined
Upper: Not determined
Vapor pressure at 20 °C (68 °F): 0 hPa
Density at 20 °C (68 °F): 1.54 g/cm³ (12.851 lbs/gal)

Bulk density at 20 °C (68 °F): 700 kg/m³
Relative density: Not determined.
Vapor density: Not applicable.
Evaporation rate: Not applicable.
Solubility in / Miscibility with
Water: Contact with water releases flammable gases
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.

10 Stability and reactivity

Reactivity
In contact with water releases flammable gases which may ignite spontaneously.

Chemical stability
Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions
Contact with water releases flammable gases

Conditions to avoid
No further relevant information available.

Incompatible materials:
Air
Water/moisture

Hazardous decomposition products: Calcium oxide

11 Toxicological information

Information on toxicological effects

Acute toxicity: No effects known.
LD/LC50 values that are relevant for classification: No data
Skin irritation or corrosion: May cause irritation
Eye irritation or corrosion: May cause irritation
Sensitization: No sensitizing effects known.
Germ cell mutagenicity: No effects known.
Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity: No effects known.
Specific target organ system toxicity - repeated exposure: No effects known.
Specific target organ system toxicity - single exposure: No effects known.
Aspiration hazard: No effects known.
Subacute to chronic toxicity: No effects known.

Additional toxicological information:
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12 Ecological information

Toxicity
Aquatic toxicity: No further relevant information available.
Persistence and degradability: No further relevant information available.
Bioaccumulative potential: No further relevant information available.
Mobility in soil: No further relevant information available.

Additional ecological information:
General notes:
Do not allow material to be released to the environment without proper governmental permits.
Avoid transfer into the environment.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

Other adverse effects: No further relevant information available.

13 Disposal considerations

Waste treatment methods
Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
### 14 Transport information

<table>
<thead>
<tr>
<th>UN-Number</th>
<th>UN1401</th>
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<td>DOT, IMDG, IATA</td>
<td>Calcium shot</td>
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**UN proper shipping name**
DOT: Calcium<br>IMDG, IATA: CALCIUM

**Transport hazard class(es)**

- **Class**: Class 4.2 Substances liable to spontaneous combustion.<br>**Label**: 4.2
- **Class**: Class 4.3 (W2) Substances which, in contact with water, emit flammable gases<br>**Label**: 4.3

**UN Number**: UN1401

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
Not applicable.

**Transport/Additional information**

- **DOT Marine Pollutant (DOT)**: No
- **UN "Model Regulation"**: UN1401, Calcium, 4.3, II

### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**GHS label elements**
The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**

- GHS02

**Signal word**
Danger

**Hazard statements**
H261 In contact with water releases flammable gas.

**Precautionary statements**
P231+P232 Handle under inert gas. Protect from moisture.<br>P280 Wear protective gloves/protective clothing/eye protection/face protection.<br>P233 Keep container tightly closed.<br>P370+P378 In case of fire: Use for extinction: CO2, sand, extinguishing powder.<br>P402+P404 Store in a dry place. Store in a closed container.<br>P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Environmental hazards**: Not applicable.

**Special precautions for user**
Warning: Substances which, in contact with water, emit flammable gases

**EMS Number**: F-G-S-O

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**: Not applicable.

**National regulations**
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**
Substance is not listed.

**California Proposition 65**
- Prop 65 - Chemicals known to cause cancer: Substance is not listed.
- Prop 65 - Developmental toxicity: Substance is not listed.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006**
Substance is not listed.

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH)**
For the manufacturing, placing on the market and use must be observed.

**Chemical safety assessment**
A Chemical Safety Assessment has not been carried out.

### 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing SDS**: Global Marketing Department

**Date of preparation / last revision**
11/24/2015

**Abbreviations and acronyms**
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)