

## 1 Identification

### Product identifier

**Product name:** Calcium cyanamide

**Stock number:** 89462

**CAS Number:**

156-62-7

**EC number:**

205-861-8

**Index number:**

615-017-00-4

**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)



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

STOT SE 3 H335 May cause respiratory irritation.

**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



GHS05 GHS07

### Signal word

Danger

### Hazard statements

H302 Harmful if swallowed.

H318 Causes serious eye damage.

H335 May cause respiratory irritation.

### Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

B6 - Reactive flammable material

D1B - Toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects



### Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

### Other hazards

### Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS# Description:

156-62-7 Calcium cyanamide

**Concentration:** ≤100%

**Product name:** Calcium cyanamide

**Identification number(s):**  
**EC number:** 205-861-8  
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**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.  
**After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.  
**After swallowing** Seek medical treatment.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
Harmful if swallowed.  
Causes serious eye damage.  
**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

**5 Fire-fighting measures**

**Extinguishing media**  
**Suitable extinguishing agents** Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.  
**Special hazards arising from the substance or mixture**  
If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide  
Hydrogen cyanide (HCN)  
Calcium oxide  
Nitrogen oxides (NOx)  
**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 product to reach sewage system or any water course.  
**Methods and material for containment and cleaning up:**  
Dispose of contaminated material as waste according to section 13.  
Ensure adequate ventilation.  
**Prevention of secondary hazards:** No special measures required.  
**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.  
**Protective Action Criteria for Chemicals**  
**PAC-1:** 1.5 mg/m<sup>3</sup>  
**PAC-2:** 5.6 mg/m<sup>3</sup>  
**PAC-3:** 50 mg/m<sup>3</sup>

**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.  
Prevent formation of dust.  
**Information about protection against explosions and fires:** No information known.  
**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 water/moisture.  
Store away from oxidizing agents.  
**Further information about storage conditions:**  
Store under dry inert gas.  
This product is moisture sensitive.  
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:**

**156-62-7 Calcium cyanamide (100.0%)**

REL (USA)	Long-term value: 0.5 mg/m <sup>3</sup>
TLV (USA)	Long-term value: 0.5 mg/m <sup>3</sup>
EL (Canada)	Long-term value: 0.5 mg/m <sup>3</sup>
EV (Canada)	Long-term value: 0.5 mg/m <sup>3</sup>

**Additional information:** No data

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USA

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**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.  
Avoid contact with the eyes.  
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.  
**Eye protection:**  
Tightly sealed goggles  
Safety glasses with side shields / NIOSH (US) or EN 166(EU)  
**Body protection:** Protective work clothing.

**9 Physical and chemical properties**

**Information on basic physical and chemical properties**  
**General Information**  
**Appearance:**  
Form: Powder  
Odor: Not determined  
Odor threshold: Not determined.  
**pH-value:** Not applicable.  
**Change in condition**  
Melting point/Melting range: 1340 °C (2444 °F)  
Boiling point/Boiling range: Not determined  
Sublimation temperature / start: Not determined  
Flammability (solid, gaseous): Not determined.  
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): 2.29 g/cm³ (19.11 lbs/gal)  
Relative density: Not determined.  
Vapor density: Not applicable.  
Evaporation rate: Not applicable.  
**Solubility in / Miscibility with**  
Water: Not determined  
**Partition coefficient (n-octanol/water):** Not determined.  
**Viscosity:**  
dynamic: Not applicable.  
kinematic: Not applicable.  
**Other information** No further relevant information available.

**10 Stability and reactivity**

**Reactivity** No information known.  
**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** Reacts with strong oxidizing agents  
**Conditions to avoid** No further relevant information available.  
**Incompatible materials:**  
Oxidizing agents  
Water/moisture  
**Hazardous decomposition products:**  
Carbon monoxide and carbon dioxide  
Hydrogen cyanide  
Calcium oxide  
Nitrogen oxides

**11 Toxicological information**

**Information on toxicological effects**  
**Acute toxicity:**  
Harmful if swallowed.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.  
**LD/LC50 values that are relevant for classification:**  
Oral LD50 158 mg/kg (rat)  
Dermal LD50 590 mg/kg (rabbit)  
**Skin irritation or corrosion:** May cause irritation  
**Eye irritation or corrosion:** Causes serious eye damage.  
**Sensitization:** No sensitizing effects known.  
**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.  
**Carcinogenicity:**  
ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this substance.  
**Reproductive toxicity:** No effects known.

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**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** May cause respiratory irritation.  
**Aspiration hazard:** No effects known.  
**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.  
**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 product to reach ground water, water course or sewage system.  
Danger to drinking water if even small quantities leak into the ground.  
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**

<b>UN-Number</b> <b>DOT, IMDG, IATA</b>	UN1403
<b>UN proper shipping name</b> <b>DOT</b> <b>ADR</b> <b>IMDG, IATA</b>	Calcium cyanamide 1403 Calcium cyanamide CALCIUM CYANAMIDE
<b>Transport hazard class(es)</b> <b>DOT</b>  <b>Class</b> <b>Label</b> <b>ADR</b>  <b>Class</b> <b>Label</b> <b>IMDG, IATA</b>  <b>Class</b> <b>Label</b>	4.3 Substances which, in contact with water, emit flammable gases 4.3  4.3 (W2) Substances which, in contact with water, emit flammable gases 4.3  4.3 Substances which, in contact with water, emit flammable gases 4.3
<b>Packing group</b> <b>DOT, ADR, IMDG, IATA</b>	III
<b>Environmental hazards:</b>	Not applicable.
<b>Special precautions for user</b> <b>EMS Number:</b> <b>Stowage Category</b> <b>Handling Code</b> <b>Segregation Code</b>	Warning: Substances which, in contact with water, emit flammable gases F-G, S-N A H1 Keep as dry as reasonably practicable SG26 In addition: from goods of classes 2.1 and 3 when stowed on deck of a containership a minimum distance of two container spaces athwartship shall be maintained, when stowed on ro-ro ships a distance of 6 m athwartship shall be maintained. SG35 Stow "separated from" acids.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b> <b>DOT</b> <b>Quantity limitations</b>  <b>Hazardous substance:</b> <b>Marine Pollutant (DOT):</b>  <b>IMDG</b> <b>Limited quantities (LQ)</b> <b>Excepted quantities (EQ)</b>	On passenger aircraft/rail: 25 kg On cargo aircraft only: 100 kg 1000 lbs, 454 kg No  1 kg Code: E1 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 1000 g

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USA

Product name: <b>Calcium cyanamide</b>	
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UN "Model Regulation":	UN 1403 CALCIUM CYANAMIDE, 4.3, III

<b>15 Regulatory information</b>	
<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	
<b>GHS label elements</b> The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)	
<b>Hazard pictograms</b>	
 	
GHS05 GHS07	
<b>Signal word</b> Danger	
<b>Hazard statements</b>	
H302 Harmful if swallowed.	
H318 Causes serious eye damage.	
H335 May cause respiratory irritation.	
<b>Precautionary statements</b>	
P261 Avoid breathing dust/fume/gas/mist/vapors/spray	
P280 Wear eye protection / face protection.	
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.	
P405 Store locked up.	
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.	
<b>National regulations</b>	
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).	
<b>SARA Section 313 (specific toxic chemical listings)</b>	
156-62-7   Calcium cyanamide	
<b>California Proposition 65</b>	
<b>Prop 65 - Chemicals known to cause cancer</b> Substance is not listed.	
<b>Prop 65 - Developmental toxicity</b> Substance is not listed.	
<b>Prop 65 - Developmental toxicity, female</b> Substance is not listed.	
<b>Prop 65 - Developmental toxicity, male</b> Substance is not listed.	
<b>Information about limitation of use:</b> For use only by technically qualified individuals.	
<b>Other regulations, limitations and prohibitive regulations</b>	
<b>Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.</b> Substance is not listed.	
<b>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.</b>	
Substance is not listed.	
<b>Annex XIV of the REACH Regulations (requiring Authorisation for use)</b> Substance is not listed.	
<b>Chemical safety assessment:</b> A Chemical Safety Assessment has not been carried out.	

<b>16 Other information</b>	
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 Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.	
<b>Department issuing SDS:</b> Global Marketing Department	
<b>Date of preparation/Revision:</b> Print date, revision date and version number are in the header of each page.	
<b>Abbreviations and acronyms:</b>	
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)	
IMDG: International Maritime Code for Dangerous Goods	
DOT: US Department of Transportation	
IATA: International Air Transport Association	
EINECS: European Inventory of Existing Commercial Chemical Substances	
CAS: Chemical Abstracts Service (division of the American Chemical Society)	
HMIS: Hazardous Materials Identification System (USA)	
WHMIS: Workplace Hazardous Materials Information System (Canada)	
LC50: Lethal concentration, 50 percent	
LD50: Lethal dose, 50 percent	
PBT: Persistent, Bioaccumulative and Toxic	
SVHC: Substances of Very High Concern	
vPvB: very Persistent and very Bioaccumulative	
ACGIH: American Conference of Governmental Industrial Hygienists (USA)	
OSHA: Occupational Safety and Health Administration (USA)	
NTP: National Toxicology Program (USA)	
IARC: International Agency for Research on Cancer	
EPA: Environmental Protection Agency (USA)	
Acute Tox. 4: Acute toxicity – Category 4	
Eye Dam. 1: Serious eye damage/eye irritation – Category 1	
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3	