Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Common Name/Trade Name
Calcium Cyanamide

Manufacturer
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Commercial Name(s)
Alzodef; Dormex; Lime-nitrogen; Nitrogen lime; Nitrolim; Nitrolime

Synonym
Calcium carabimide

Chemical Name
Cyanamide, calcium salt (1:1)

Chemical Family
Not available.

Chemical Formula
CaCN2

Supplier
SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Calcium Cyanamide</td>
<td>156-62-7</td>
<td>0.5</td>
<td>1</td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients
Calcium Cyanamide:

- ORAL (LD50): Acute: 250 mg/kg [Rat]. 334 mg/kg [Mouse]. 1400 mg/kg [Rabbit].

- DERMAL (LD50): Acute: 590 mg/kg [Rabbit].

Section 3. Hazards Identification

Potential Acute Health Effects
Hazardous in case of skin contact (irritant, penetrator), of eye contact (irritant), of ingestion, of inhalation (lung irritant).

Potential Chronic Health Effects
Slightly hazardous in case of skin contact (sensitizer).

Carcinogenic Effects: Classified A3 (Proven for animal) by ACGIH.

Mutagenic Effects: Mutagenic for bacteria and/or yeast.

Teratogenic Effects: Not available.

Developmental Toxicity: Not available.

The substance may be toxic to the nervous system. Repeated or prolonged exposure to the substance can produce target organs damage.

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### Section 4. First Aid Measures

| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Serious Skin Contact | Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Serious Inhalation | Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband. |
| Serious Ingestion | Not available. |

### Section 5. Fire and Explosion Data

| Flammability of the Product | Non-flammable. |
| Auto-Ignition Temperature | Not applicable. |
| Flash Points | Not applicable. |
| Flammable Limits | Not applicable. |
| Products of Combustion | Not available. |
| Fire Hazards in Presence of Various Substances | Not applicable. |
| Fire Fighting Media and Instructions | Not applicable. |
| Special Remarks on Fire Hazards | Not available. |
| Special Remarks on Explosion Hazards | Not available. |

### Section 6. Accidental Release Measures

| Small Spill | Use appropriate tools to put the spilled solid in a convenient waste disposal container. |
| Large Spill | Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. |
Calcium Cyanamide

Section 7. Handling and Storage

**Precautions**
Keep locked up. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as acids.

**Storage**
Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls / Personal Protection

**Engineering Controls**
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Personal Protection**
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill**
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**
TWA: 0.5 (mg/m$^3$) from ACGIH (TLV) [United States]
TWA: 0.5 STEL: 1 (mg/m$^3$) [United Kingdom (UK)]

Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical state and appearance</th>
<th>Solid. (Powdered solid.)</th>
<th>Odor</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
<td>80.1g/mole</td>
<td>Taste</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH (1% soln/water)</td>
<td>Not applicable.</td>
<td>Color</td>
<td>Grey. Dark grey.</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Melting Point</td>
<td>1340°C (2444°F)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>2.29 (Water = 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not applicable.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ionicity (in Water)</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>Not available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solubility</td>
<td>Insoluble in cold water, hot water.</td>
<td></td>
<td></td>
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</tbody>
</table>

Section 10. Stability and Reactivity Data

**Stability**
The product is stable.

**Instability Temperature**
Not available.

**Conditions of Instability**
Incompatible materials, moisture/water

**Incompatibility with various substances**
Reactive with acids.
Slightly reactive to reactive with moisture.

Continued on Next Page
### Section 11. Toxicological Information

#### Routes of Entry
- Absorbed through skin. Dermal contact. Inhalation. Ingestion.

#### Toxicity to Animals
- Acute oral toxicity (LD50): 250 mg/kg [Rat].
- Acute dermal toxicity (LD50): 590 mg/kg [Rabbit].

#### Chronic Effects on Humans
- **CARCINOGENIC EFFECTS**: Classified A3 (Proven for animal.) by ACGIH.
- **MUTAGENIC EFFECTS**: Mutagenic for bacteria and/or yeast.
- May cause damage to the following organs: the nervous system.

#### Other Toxic Effects on Humans
- Hazardous in case of skin contact (irritant, permeator), of ingestion, of inhalation (lung irritant).

#### Special Remarks on Toxicity to Animals
- Lethal Dose Conc/50% Kill:
  - LD50(Rat) - Route: Oral; Dose: 158 mg/kg

#### Special Remarks on Chronic Effects on Humans
- May affect genetic material (mutagenic).
- May cause cancer based on animal test data.

#### Special Remarks on other Toxic Effects on Humans
- Acute Potential Health Effects:
  - Skin: Causes skin irritation. It can be absorbed through the skin in harmful amounts.
  - Eyes: Causes eye irritation with keratitis and conjunctivitis.
  - Inhalation: Causes respiratory tract irritation with difficulty breathing, sensation of chest pressure or discomfort. Irritation and inflammation of the mucosa of the nose and throat may be seen. Pulmonary edema, or pneumonitis may occur.
  - Ingestion: Harmful if swallowed. May cause chills, flushing of the skin, nausea, vomiting, gastrointestinal irritation. May affect the cardiovascular system (hypotension, rapid pulse, sinus bradycardia), behavior/central nervous system/nervous system (headache, coma, mild neuropathy, dizziness, fatigue, “pins and needles,” and or weakness of the hands and feet), liver (hepatocellular damage), blood (aplastic anemia)
  - Chronic Potential Health Effects:
  - Skin: Dermal ulceration or sensitization may occur with repeated or prolonged exposure.

### Section 12. Ecological Information

#### Ecotoxicity
- Not available.

#### BOD5 and COD
- Not available.

#### Products of Biodegradation
- Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

#### Toxicity of the Products of Biodegradation
- The products of degradation are less toxic than the product itself.

#### Special Remarks on the Products of Biodegradation
- Not available.
### Section 13. Disposal Considerations

**Waste Disposal**

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

### Section 14. Transport Information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>CLASS 4.3: Danger When Wet</th>
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</thead>
<tbody>
<tr>
<td>Identification</td>
<td>UNNA: 1403 : Calcium Cyanamide PG: III</td>
</tr>
<tr>
<td>Special Provisions for Transport</td>
<td>Not available.</td>
</tr>
<tr>
<td>DOT(Pictograms)</td>
<td><img src="image" alt="DOT Pictogram" /></td>
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</tbody>
</table>

### Section 15. Other Regulatory Information and Pictograms

#### Federal and State Regulations
- Connecticut hazardous materials survey: Calcium Cyanamide
- Illinois toxic substances disclosure to employee act: Calcium Cyanamide
- Illinois chemical safety act: Calcium Cyanamide
- New York release reporting list: Calcium Cyanamide
- Rhode Island RTK hazardous substances: Calcium Cyanamide
- Pennsylvania RTK: Calcium Cyanamide
- Minnesota: Calcium Cyanamide
- Massachusetts RTK: Calcium Cyanamide
- New Jersey: Calcium Cyanamide
- New Jersey spill list: Calcium Cyanamide
- Louisiana RTK reporting list: Calcium Cyanamide
- California Directer's List of Hazardous Substances: Calcium Cyanamide
- TSCA 8(b) inventory: Calcium Cyanamide
- CERCLA: Hazardous substances: Calcium Cyanamide: 1000 lbs. (453.6 kg)

#### California Proposition 65 Warnings
- California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
- California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

#### Other Regulations
- EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 205-861-8).
- Canada: Listed on Canadian Domestic Substance List (DSL).
- China: Listed on National Inventory.
- Japan: Listed on National Inventory (ENDS).
- Korea: Listed on National Inventory (KECI).
- Philippines: Listed on National Inventory (PICCS).
- Australia: Listed on AICS.

#### Other Classifications
- WHMIS (Canada) CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC).
- CLASS F: Dangerously reactive material.
- R22- Harmful if swallowed.
- R37- Irritating to respiratory system.
- R41- Risk of serious damage to eyes.
- S22- Do not breathe dust.
- S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- S37/39- Wear suitable gloves and eye/face protection.
- S38- In case of insufficient ventilation, wear suitable respiratory equipment.

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Calcium Cyanamide

HIMIS (U.S.A.)

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>0</td>
<td>1</td>
<td>E</td>
</tr>
</tbody>
</table>

National Fire Protection Association (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>Reactivity</th>
<th>Specific Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>W</td>
<td>0</td>
<td>E</td>
</tr>
</tbody>
</table>

WHIMS (Canada) (Pictograms)

DSCL (Europe) (Pictograms)

TDG (Canada) (Pictograms)

ADR (Europe) (Pictograms)

Protective Equipment

- Gloves
- Lab coat
- Dust respirator. Be sure to use an approved/certified respirator or equivalent.
- Wear appropriate respirator when ventilation is inadequate.
- Splash goggles.

Section 16. Other Information

<table>
<thead>
<tr>
<th>MSDS Code</th>
<th>C0061</th>
</tr>
</thead>
<tbody>
<tr>
<td>References</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Special Considerations</td>
<td>Major Uses: Herbicide, fungicide</td>
</tr>
</tbody>
</table>


Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.