1. Product and Company Identification

Trade Name: Aluminum chromium silicon
Chemical Formula: AlCrSi
Recommended Use: Scientific research and development

Manufacturer/Supplier: LTS Research Laboratories, Inc.
Street: 37 Ramland Road
City: Orangeburg
State: New York
Zip Code: 10962
Country: USA
Tel #: 855-587-2436 / 855-lts-chem

24-Hour Emergency Contact: 800-424-9300 (US & Canada)
+1-703-527-3887 (International)

2. Hazards Identification

Signal Word: Danger

Hazard Statements:
- H228: Flammable solid
- H250: Catches fire spontaneously if exposed to air
- H261: In contact with water releases flammable gas
- H351: Suspected of causing cancer

Precautionary Statements:
- P201: Obtain special instructions before use
- P202: Do not handle until all safety precautions have been read and understood
- P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
- P222: Do not allow contact with air
- P280: Wear protective gloves/protective clothing/eye protection/face protection
- P240: Ground/bond container and receiving equipment
- P241: Use explosion-proof electrical/ventilating/lighting/equipment
- P231+P232: Handle under inert gas. Protect from moisture
- P308+P313: IF exposed or concerned: Get medical advice/attention
- P370+P378: In case of fire: Use special powder for metal fires for extinction
- P405: Store locked up
- P422: Store contents under inert gas
- P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

<table>
<thead>
<tr>
<th></th>
<th>Powder</th>
<th>Bulk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Flammability</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Physical</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
3. Composition

Chemical Family: Metal alloy
Additional Names: None

Aluminum (Al):
  Percentage: 0-100 wt%
  CAS #: 7429-90-5
  EC #: 231-072-3
Chromium (Cr):
  Percentage: 0-100 wt%
  CAS #: 7440-47-3
  EC #: 231-157-5
Silicon (Si):
  Percentage: 0-100 wt%
  CAS #: 7440-21-3
  EC #: 231-130-8

4. First Aid Procedures

General Treatment: Seek medical attention if symptoms persist.
Special Treatment: None
Important Symptoms: None

Inhalation: Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion: Give one to two glasses of water and induce vomiting. Never induce vomiting or give anything by mouth to an unconscious person.
Skin: Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing

5. Firefighting Measures

Flammability: Non-flammable, except as powder
Extinguishing Media: Do not use water for metal fires – use CO₂, sand, extinguishing powder.
Spec. Fire Fighting Procedure: Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. See section 10 for decomposition products.

6. Accidental Release Measures

If Material Is Released/Spilled: Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
Environmental Precautions: Isolate runoff to prevent environmental pollution.
7. Handling and Storage

Handling Conditions: Handle under dry protective gases. Wash thoroughly after handling.
Storage Conditions: Store in a cool dry place in a tightly sealed container. Store under dry inert gas. Store apart from materials and conditions listed in section 10.
Work/Hygienic Maintenance: Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.
Ventilation: Provide sufficient ventilation to maintain concentration at or below threshold limit.

8. Exposure Controls and Personal Protection

Permissible Exposure Limits: 0.5 mg/m³ as Cr, long-term value
Threshold Limit Value: 0.5 mg/m³ as Cr, long-term value
Special Equipment: None
Respiratory Protection: Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.
Protective Gloves: Nitrile rubber, NBR 0.11mm thick.
Eye Protection: Safety glasses or goggles
Body Protection: Protective work clothing. Wear close-toed shoes and long sleeves/pants.

9. Physical and Chemical Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>N/A</td>
</tr>
<tr>
<td>Form</td>
<td>Powder, Granules, Pellets, Sputtering target, Custom parts</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Melting Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Flash Point</td>
<td>N/A</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>N/A</td>
</tr>
<tr>
<td>Density</td>
<td>N/A</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>N/A</td>
</tr>
</tbody>
</table>

10. Reactivity

Stability: Stable under recommended storage conditions
React With: Acids, Bases, Halocarbons, Interhalogens, Oxidizing agents
Incompatible Conditions: Air, Water/moisture
Hazardous Decomposition Products: Silicon oxides, Metal oxide fume
11. Toxicological Information

Potential Health Effects:
- Eyes: May cause irritation
- Skin: May cause irritation
- Ingestion: May cause irritation
- Inhalation: May cause irritation
- Chronic: N/A

Signs & Symptoms: N/A
Aggravated Medical Conditions: N/A

Median Lethal Dose: 3160 mg/kg for rat by mouth (as Silicon)

Carcinogen:
- EPA-A: human carcinogen: sufficient evidence from epidemiologic studies to support a causal association between exposure and cancer
- IARC-3: Not classifiable as to carcinogenicity to humans.
- (Inhalation)EPA-K: Known human carcinogens
- Oral)EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.
- (Oral)EPA-CBD: Carcinogenic potential cannot be determined.
- 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.

12. Ecological Information

Aquatic Toxicity: Low
Persistent Bioaccumulation Toxicity: No
Very Persistent, Very Bioaccumulative: No
Notes: N/A

13. Disposal Considerations

Dispose of in accordance with local, state, national, and international regulations.

14. Transportation Data

Hazardous: Hazardous as powder only.

Hazard Class: 4.3 Substances which, in contact with water, emit flammable gases
Secondary Class: 4.1 Flammable solids, self-reactive substances and solid desensitized explosives.

Packing Group: II
UN Number: UN3208
Proper Shipping Name: Metallic substance, water reactive, n.o.s. (Aluminum chromium silicon)

15. Regulatory Information

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: Yes
16. Other Information

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

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