

Cryolite, synthetic powder



Page 1/3



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Laguna Clay Company
14400 Lomitas Ave
City of Industry, CA 91746
1-800-4Laguna
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www.lagunaclay.com

Cryolite, synthetic powder

Material Safety Data Sheet

Chemical: Trisodium hexafluoroaluminate NFPA: H=0 F=0 I=0 S=None
HMIS: H=0 F=0 R=0 PPE= Supplied by user,
dependent on conditions

MSDS Number: CRYO-1103
Effective Date: 21 November 2003
Issued by: Solvay Chemicals, Inc. Regulatory Affairs Department

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I. Company and Product Identification

- 1.1 Product Name:** Cryolite, synthetic powder
Chemical Name: Trisodium hexafluoroaluminate
Synonyms: None
Chemical Formula: $3\text{NaF}\cdot\text{AlF}_3$
Molecular Weight: 210
CAS Number: 15096-52-3
EINECS Number: 239-148-8
- 1.2 Recommended Uses:** Metallurgy, abrasives, glass industry, filters
- 1.3 Supplier:** Laguna Clay Company, 14400 Lomitas Ave.,
City of Industry, CA 91746
1-800-452-4862
- 1.4 Emergency Telephone Numbers**
Emergencies (USA): 1-800-424-9300 (CHEMTREC®)
Transportation Emergencies (INTERNATIONAL/MARITIME): 1-703-527-3887 (CHEMTREC®)
Transportation Emergencies (CANADA): 1-613-996-6666 (CANUTEC)
Transportation Emergencies (MEXICO-SETIQ): 01-800-00-214-00 (MEX. REPUBLIC)
525-559-1588 (Mexico City and metro area)

Solvay
Fluorides



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2. Composition/Information on Ingredients

INGREDIENTS	FORMULA	WT. PERCENT	CAS #
Trisodium hexafluoroaluminate	$3\text{NaF}\cdot\text{AlF}_3$	> 95.00	15096-52-3

3. Hazards Identification

Emergency Overview:

- Hazardous product for human health and the aquatic environment.
- Presents hazards from its ionizing fluorine.
- In case of decomposition, releases hydrogen fluoride.

3.1 Route of Entry: Inhalation: Yes Skin: Yes Ingestion: Yes

3.2 Potential Effects of exposure:

Inhalation:

- Nose and throat irritation.
- Cough.
- At high concentrations, risk of chemical pneumonitis.
- In case of repeated or prolonged exposure: risk of bronchial hyperreactivity.
- In case of repeated or prolonged exposure: risk of sore throat, nosebleeds, chronic bronchitis.
- In case of repeated or prolonged exposure, at high concentrations: risk of pulmonary fibrosis.

Eyes: Slight Irritation.

Skin contact:

- Slight irritation.
- In case of repeated contact: risk of allergic dermatitis.

Ingestion:

- By ingestion of large quantities: nausea and vomiting, abdominal cramps and diarrhea.
- By ingestion of large quantities: risk of hypocalcemia with nervous disorders (tetany) and cardiac rhythm disorders.
- By ingestion of large quantities: risk of general symptoms.
- By ingestion of large quantities: risk of liver alterations.

Carcinogenicity: See section 11.3.

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4. First-Aid Measures

General Recommendations:

4.1 Inhalation:

- Remove the subject from dusty environment and have him/her blow nose.
- Consult a physician in case of respiratory symptoms.

Eyes:

- Flush eyes with running water for 15 minutes, while keeping the eyelids wide open.
- Consult an ophthalmologist in case of persistent pain.

Skin: Remove contaminated shoes, socks and clothing; wash the affected skin with soap and water.

Ingestion: Contact a physician for advice.

If the subject is completely conscious:

- Rinse mouth with fresh water.
- Give to drink a 1% aqueous calcium gluconate solution.
- If the subject presents nervous, respiratory or cardiovascular disorders: administer oxygen.

If the subject is unconscious:

- Administer classical resuscitation measures.
- NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

4.2 Medical Treatment/Notes to Physician: None.

5. Fire Fighting Measures

5.1 **Flash point:** Not applicable.

5.2 **Auto-ignition Temperature:** Not applicable.

5.3 **Flammability Limits:** Not applicable.

5.4 **Unusual Fire and Explosion Hazards:** No data.

5.5 Extinguishing Methods

Common: In case of fire in close proximity, all means of extinguishing are acceptable.

Inappropriate extinguishing means: No restriction.

5.6 Fire Fighting Procedures:

Specific hazards:

- Non-combustible.
- Formation of dangerous gas/vapors in case of decomposition (see section 10).

Protective measures in case of intervention:

- Wear self-contained breathing apparatus when in close proximity or in confined spaces.
- When intervention in close proximity wear acid-resistant over-suit.
- After intervention, take a shower, remove clothing carefully, clean and check equipment.

Other precautions: Control the use of water due to environmental risk (see section 6).

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Page 3 of 3



Cryolite, synthetic powder
Material Safety Data Sheet

6. Accidental Release Measures:

- 6.1 Precautions:**
 - Follow the protective measures given in section 8.
 - Avoid dispersing the dust into a cloud.
- 6.2 Precautions for protection of the environment:**
 - Collect the product with suitable means avoiding dust formation.
 - Place everything into a closed, labeled container compatible with the product.
 - For disposal methods, refer to section 13.
 - Clean the area with large quantities of water.
- 6.3 Cleanup methods:**
 - Immediately notify the appropriate authorities in case of significant discharge.
 - Do not discharge into the environment (sewers, rivers, soils, ...).

7. Handling and Storage

- 7.1 Handling:**
 - Keep away from reactive products (see section 10).
 - Avoid heating the product above the decomposition temperature (see section 9).
- 7.2 Storage:** Keep in original packaging, closed.
- 7.3 Specific Uses:** For specific use questions, contact supplier.
- 7.4 Other precautions:**
 - Warn people about the dangers of the product.
 - Avoid dust and formation of dust clouds.
 - Follow the protective measures given in section 8.
- 7.5 Packaging:** Paper.

8. Exposure Controls/Personal Protection

8.1 Exposure Limit Values

Authorized limit Values	TLV* ACGIH®-USA
Fluorides	2.5 mg/m ³ (as F)

ACGIH® and TLV® are registered trademarks of the American Conference of Governmental Industrial Hygienists.

8.2 Exposure Controls:

- Follow the protective measures given in section 7.
- Maintain employee exposures to levels below the applicable exposure limits.

8.2.1 Occupational Exposure Controls:

- 8.2.1.1 Ventilation:** Provide local ventilation suitable for the dust risk.
- 8.2.1.2 Respiratory protection:** Use only respiratory protection that conforms to international/national standards.
- 8.2.1.3 Hand protection:** Protective gloves - chemical-resistant (PVC).
- 8.2.1.4 Eye protection:** Dustproof goggles, if dusty.

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8.2.1.5 Skin protection: Protective clothing suitable for the handling of chemicals.

8.3 Other precautions:

- Provide shower and eyewash stations.
- Do not smoke, eat or drink in the working area.
- Consult the industrial hygienist or the safety manager for the selection of personal protective equipment suitable for the working conditions.
- USE STRICT HYGIENE.

8.4 Other information: Follow local, state and national regulations for aqueous emissions (see section 15).

9. Physical and Chemical Properties

9.1 Appearance: crystalline powder.
Color: slightly colored.
Odor: odorless.

9.2 Important Health, Safety and Environmental information:
pH: 6 @ 20°C (68°F) 0.42 g/l.

Change of state:

Melting point: 1,027° C (1880°F).
Boiling point: Not applicable (Decomposition).
Decomposition Temperature: > 1,000°C (1832°F).

Flash Point: Not applicable.

Flammability: Not applicable.
(solid, gas)

Explosive Properties: No data.

Oxidizing Properties: Not applicable.

Vapor Pressure: No data.

Relative Density:

Specific gravity (H₂O=1): 2.9 - 2.96 @ 20°C (68°F).

Solubility:

Water: 0.41 g/l at 25°C (77°F).
Fat: No data.

Partition coefficient: Not applicable.

Viscosity: Not applicable.

Vapor Density (air=1): No data.

Evaporation Rate:

Bulk Density: 500- 800 kg/m³ at 20°C (68°F).

9.3 Other information:

Granulometry: 99% < 0.06 mm.

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Page 5/9



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10. Stability and Reactivity

Stability:

10.1 **Conditions to avoid:** None.

10.2 **Materials and substances to avoid:**

- Strong acids.
- Strong bases.

10.3 **Hazardous decomposition products:** Hydrogen fluoride.

10.4 **Hazardous Polymerization:** Will not occur.

11. Toxicological Information

11.1 **Acute toxicity:**

Inhalation: No data.

Oral: LD₅₀ > 2,000 mg/kg, rat.

Dermal: No data.

Irritation:

- Rabbit, non-irritant (skin).
- Rabbit, irritant (eyes).

Sensitization: No data.

Comments: Chronic exposure may entail dental or skeletal fluorosis.

11.2 **Chronic toxicity:**

- Inhalation, after prolonged exposure, rat, $\geq 1 \text{ mg/m}^3$, observed effect.
- Oral route (diet), after repeated exposure, various species, Target organ: skeleton, $\geq 14 \text{ ppm}$, observed effect.
- Oral route (diet), after repeated exposure, rat/mouse, Target organ: skeleton, 25 ppm, observed effect (Sodium fluoride).
- In vitro, no mutagenic effect.
- In vivo, ambiguous mutagenic effect.
- No teratogenic effect.
- No carcinogenic effect (Sodium fluoride).

Main Health Effects:

- Possible irritation of the mucous membranes, eyes and skin.
- Risk of respiratory sensitization.
- Chronic exposure to the product can cause bone fluorosis.

Inhalation:

- Nose and throat irritation
- Cough.
- At high concentrations, risk of chemical pneumonitis.
- In case of repeated or prolonged exposure: risk of bronchial hyperreactivity or sore throat, nosebleeds, chronic bronchitis, or risk of pulmonary fibrosis.

Eye Contact: Slight irritation.

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Page 6/9

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Skin Contact:

- Slight irritation.
- In case of repeated contact: risk of allergic dermatitis.

Ingestion:

- By ingestion of large quantities: nausea and vomiting, abdominal cramps and diarrhea or risk of hypocalcemia with nervous disorders (tetany) and cardiac rhythm disorders or risk of liver alterations.

11.3 **Carcinogenic Designation:** None.

12. Ecological Information

12.1 Acute ecotoxicity:

- Fishes, *Salmo gairdneri*, LC₅₀, 96 hour(s), 47 mg/l.
- Crustaceans, *Daphnia pulex*, EC₅₀, 48 hour(s), 5 mg/l.
- Algae, *Scenedesmus quadricauda*, NOEC, 96 hour(s), 5,000 mg/l.

12.2 Mobility:

- Air - mobility as solid aerosols.
- Water/soil - low solubility and mobility.
- Soil/sediments - adsorption on mineral and organic soil constituents.

12.3 Abiotic Degradation:

- Water/soil - acid/base equilibrium as a function of pH.
Degradation products: fluoro-complexes (acid pH) / hydroxy-aluminum (environmental pH) / fluorhydric acid/fluoride.
- Water/soil - complexation/precipitation of inorganic and organic materials.

12.4 **Biotic Degradation:** not applicable (inorganic compound).

12.5 Potential for bioaccumulation:

- Bioconcentration: log Po/w - not applicable (ionizable inorganic compound).
- Bioconcentration - accumulation into vegetable leaves (Fluorides).

12.6 Other adverse effects /Comments:

- Toxic for aquatic organisms.
- Product fate is highly dependent on environmental conditions: pH, temperature, oxidoreductive potential, mineral and organic content of the medium,...

13. Disposal Considerations

13.1 Waste treatment:

- Dispose in compliance with local, state and federal regulations.
- Dispose of the product in a facility authorized for industrial waste.

13.2 **Packaging treatment:** Dispose of the containers by dispatching them to an approved incineration facility for hazardous waste.

13.3 **RCRA Hazardous Waste:** Not listed.

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Page 7/7

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14. Transportation Information

Mode	DOT	IMDG	IATA
Proper Shipping Name	Not a regulated Hazardous Material	Not a regulated Hazardous Material	Not a regulated Hazardous Material
Emergency Info	It is recommended that ERG guide #111 be used for all non-DOT-regulated material.		
Note	DOT permits classification of this material as an environmentally hazardous substance (UN 3077) if other regulatory bodies so designate.		

15. Regulatory Information

National Regulations (US)

TSCA Inventory 8(b): Yes.

SARA Title III Sec. 302/303 Extremely Hazardous Substances (40 CFR 355): No.

SARA Title III Sec. 311/312 (40 CFR 370): Yes.

Hazard Category: Chronic health hazard.

Threshold planning quantity: 10,000 lbs.

SARA Title III Sec. 313 Toxic Chemical Emissions Reporting (40 CFR 372): No.

CERCLA Hazardous Substance (40 CFR Part 302)

Listed Substance: No.

Unlisted Substance: No.

State Component Listing:

State	Comment
CA	Airborne Contaminants & Emissions Inventory
CA	Hazardous Substance List
IL	Toxic Substances Disclosure to Employees Act
IN	Occupational Health & Safety Standards - Air
KY	Occupational Health & Safety Standards - Air
MN	Hazardous Substance List
NJ	Right to Know Substances List
NJ	Toxic Catastrophe Prevention Act
NC	Exposure limits for Air Contaminants
PA	Right to Know
RI	Right to Know

National Regulations (Canada)

Canadian DSL Registration: DSL.

WHMIS Classification: D2B - Toxic material.

This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations*, and the MSDS contains all the information required by the *Controlled Products Regulations*.

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Labeling according to Directive 1999/45/EC.

Category	ID	Phrase
Symbols	T	Toxic.
	N	Dangerous for the environment.
Phrases R	20/22	Harmful by inhalation and if swallowed.
	48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
	51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Phrases S	(1/2)	(Keep locked up and out of the reach of children).
	22	Do not breathe dust.
	37	Wear suitable gloves.
	45	In case of an accident or if you feel unwell, seek medical advice immediately (show the label where possible).
	61	Avoid release to the environment. Refer to special instructions / Safety data sheets.

16. Other Information

16.1 Ratings:

NFPA (NATIONAL FIRE PROTECTION ASSOCIATION)

Health = 0 Flammability = 0 Instability = 0 Special = None

HMS (HAZARDOUS MATERIAL INFORMATION SYSTEM)

Health = 0 Fire = 0 Reactivity = 0 PPE = Supplied by User, dependent on local conditions

16.2 Other information:

The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. (Unless noted to the contrary, the technical information applies only to pure product).

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16.3 Reason for revision:

Supersedes edition: None

Purpose of revision: Original

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Page 0/1