SAFETY DATA SHEET
HCS 2012 (29 CFR 1910.1200)

Revision Date: 08/06/2014

CRYOLITE, synth. powder

1. PRODUCT AND COMPANY IDENTIFICATION

1.1. Identification of the substance or mixture

Product name	:	CRYOLITE, synth. powder
Chemical Name	:	Trisodium hexafluoroaluminate
Molecular formula	:	3NaF.AlF3
Molecular weight	:	210 g/mol

1.2. Use of the Substance/Mixture

Recommended use :
- Metallurgy
- Glass industry
- Abrasive
- Fillers

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

1.3. Company/Undertaking Identification

Address : SOLVAY FLUORIDES, LLC
3333 RICHMOND AVENUE
HOUSTON TX 77098-3099
USA

1.4. Emergency and contact telephone numbers

Emergency telephone number	:	**1 (800) 424-9300 CHEMTREC ® (USA & Canada)** **01-800-00-214-00 (MEX. REPUBLIC)**
Contact telephone number (product information):	:	**US: +1-800-765-8292 (Product information)** **US: +1-713-525-6500 (Product information)**

2. HAZARDS IDENTIFICATION

2.1. Emergency Overview:

NFPA	:	H= 0 F= 0 I= 0 S= None
HMIS	:	H= 0 F= 0 R= 0 PPE = Supplied by User; dependent on local conditions

General Information

Appearance	:	powder, crystalline
Colour	:	slightly coloured
Odour	:	odourless

Main effects

- Chronic exposure may entail dental or skeletal fluorosis

2.2. Potential Health Effects:

Inhalation
- Irritating to mucous membranes
- Symptoms: Cough, sore throat, Nose bleeding.
- Repeated or prolonged exposure: chronic bronchitis.
- (in case of higher concentration): chemical pneumonitis.

Eye contact
- slight irritation

Skin contact
- slight irritation

Ingestion
- risk of hypocalcemia with nervous problems (tetany) and cardiac arrhythmia
- Liver injury may occur.
- Symptoms: Nausea, Vomiting, Abdominal pain, Diarrhoea.

Other toxicity effects
- See section 11: Toxicological Information

2.3. Environmental Effects:
- See section 12: Ecological Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Trisodium hexafluoroaluminate

CAS-No.	:	13775-53-6
Concentration	:	**>= 95.0 %**

4. FIRST AID MEASURES

4.1. Inhalation
- Move to fresh air.
- Oxygen or artificial respiration if needed.
- If symptoms persist, call a physician.

4.2. Eye contact
- Rinse immediately with plenty of water and seek medical advice.

4.3. Skin contact
- Take off contaminated clothing and wash before reuse.
- Wash off with plenty of water.
- If symptoms persist, call a physician.

4.4. Ingestion
- Immediate medical attention is required.
- Take victim immediately to hospital.
- Rinse mouth with water.
- Do NOT induce vomiting.
- Artificial respiration and/or oxygen may be necessary.

4.5. Notes to physician

Exposure to decomposition products :

- Immediate medical attention is required.
- Medical examination necessary even only on suspicion of intoxication.

5. FIREFIGHTING MEASURES

5.1. Suitable extinguishing media

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

5.2. Extinguishing media which shall not be used for safety reasons

- None known.

5.3. Special exposure hazards in a fire

- Not combustible.
- Hazardous decomposition products formed under fire conditions.

5.4. Hazardous decomposition products

- Hydrogen fluoride

5.5. Special protective equipment for firefighters

- In the event of fire, wear self-contained breathing apparatus.
- Use personal protective equipment.
- Wear chemical resistant oversuit
- Cool containers/tanks with water spray.
- Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. Advice for non-emergency personnel

- Keep people away from and upwind of spill/leak.
- Avoid dust formation.

6.1.2. Advice for emergency responders

- Wear self-contained breathing apparatus and protective suit.
- Sweep up to prevent slipping hazard.
- Prevent further leakage or spillage.

6.2. Environmental precautions

- Do not flush into surface water or sanitary sewer system.
- If the product contaminates rivers and lakes or drains inform respective authorities.

6.3. Methods and materials for containment and cleaning up

- Pick up and transfer to properly labelled containers.
- Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

- Refer to protective measures listed in sections 7 and 8.

7. HANDLING AND STORAGE

7.1. Handling

- Use only in well-ventilated areas.
- Keep away from heat and sources of ignition.
- Keep away from Incompatible products.

7.2. Storage

- Store in original container.
- Keep in a dry place.
- Keep in properly labelled containers.
- Keep container closed.
- Keep away from Incompatible products.

7.3. Packaging material

- Paper

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure Limit Values

Particles not otherwise specified (PNOS)

- US. ACGIH Threshold Limit Values 2007
  time weighted average = 3 mg/m3
  Remarks: as respirable particles
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
  Permissible exposure limit = 5 mg/m3
  Remarks: respirable dust fraction, All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
- US. ACGIH Threshold Limit Values 2010
  time weighted average = 10 mg/m3
  Remarks: Inhalable fraction
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
  Permissible exposure limit = 15 mg/m3
  Remarks: Total dust, All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 15 millions of particles per cubic foot of air
  Remarks: respirable dust fraction
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 50 millions of particles per cubic foot of air
  Remarks: Total dust

- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 5 mg/m3
  Remarks: respirable dust fraction
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 15 mg/m3
  Remarks: Total dust
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
  time weighted average = 5 mg/m3
  Remarks: respirable dust fraction
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
  time weighted average = 15 mg/m3
  Remarks: Total dust

Trisodium hexafluoroaluminate

- SAEL (Solvay Acceptable Exposure Limit) 2012
  time weighted average = 0.1 mg/m3
- US. ACGIH Threshold Limit Values 03 2013
  time weighted average = 2.5 mg/m3
  Remarks: as F
- US. OSHA Table Z-2 (29 CFR 1910.1000) 02 2006
  time weighted average = 2.5 mg/m3
  Remarks: Dust
- US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) 02 2006
  Permissible exposure limit = 2.5 mg/m3
  Remarks: as F
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
  time weighted average = 2.5 mg/m3
  Remarks: as F

Silica, Crystalline Quartz

- US. ACGIH Threshold Limit Values 02 2014
  time weighted average = 0.025 mg/m3
  Remarks: respirable dust fraction
- US. OSHA Table Z-1-A (29 CFR 1910.1000) 1989
  time weighted average = 0.1 mg/m3
  Remarks: Respirable dust
- US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A 06 2008
  time weighted average = 0.1 mg/m3
  Remarks: Respirable dust
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 2.4 millions of particles per cubic foot of air
  Remarks: Respirable., The exposure limit is calculated from the equation, 250/(%SiO2+5), using a value of 100% SiO2. Lower percentages of SiO2 will yield higher exposure limits.
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000
  time weighted average = 0.1 mg/m3
  Remarks: Respirable., The exposure limit is calculated from the equation, 10/(%SiO2+2), using a value of 100% SiO2. Lower percentages of SiO2 will yield higher exposure limits.
- US. OSHA Table Z-3 (29 CFR 1910.1000) 2000

time weighted average = 0.3 mg/m3
Remarks: Total dust, The exposure limit is calculated from the equation, 30/(%SiO2+2), using a value of 100% SiO2. Lower values of % SiO2 will give higher exposure limits.

8.2. Engineering controls

- Provide appropriate exhaust ventilation at places where dust is formed.
- Apply technical measures to comply with the occupational exposure limits.

8.3. Personal protective equipment

8.3.1. Respiratory protection

- In case of insufficient ventilation, wear suitable respiratory equipment.
- In case of emissions and dust clouds/fog/fumes, face mask with combined type E-P3 cartridge.
- Use only respiratory protection that conforms to international/ national standards.
- Use NIOSH approved respiratory protection.
- Comply with OSHA respiratory protection requirements.

8.3.2. Hand protection

- Impervious gloves
- Suitable material: Neoprene, Fluoroelastomer

8.3.3. Eye protection

- Dust proof goggles obligatory.

8.3.4. Skin and body protection

- Dust impervious protective suit

8.3.5. Hygiene measures

- Eye wash bottles or eye wash stations in compliance with applicable standards.
- When using, do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Appearance	:	powder, crystalline
Colour	:	slightly coloured
Odour	:	odourless

9.2. Important health safety and environmental information

pH	:	7 *Concentration*: 0.42 g/l *Temperature*: 25 °C (77 °F)
Boiling point/boiling range	:	*Remarks*: Not applicable

Flash point	:	( ) (inorganic) *Remarks*: Not applicable
Flammability	:	*Remarks*: Not applicable
Explosive properties	:	*Explosion danger*: *Remarks*: Not explosive
Oxidizing properties	:	*Remarks*: Non oxidizer
Vapour pressure	:	*Remarks*: Not applicable
Relative density / Density	:	2.97 *Temperature*: 20 °C (68 °F)
Bulk density	:	500 - 800 kg/m3 *Temperature*: 20 °C (68 °F)
Solubility(ies)	: : :	0.602 g/l(pH 5.5 - 7) 0.217 g/l(pH 8.5 - 9) Water *Temperature*: 20 °C (68 °F)
Partition coefficient: n-octanol/water	:	*Remarks*: Not applicable
Viscosity	:	*Remarks*: Not applicable

9.3. Other data

Melting point/range	:	1,009 - 1,012 °C (1,848 - 1,854 °F)
Auto-flammability	:	*Remarks*: Not applicable
Granulometry	:	20.97 µm *Remarks*: d 90 9.78 µm *Remarks*: d 50 1.73 µm *Remarks*: d 10
Decomposition temperature	:	> 1,000 °C (1,832 °F)

10. STABILITY AND REACTIVITY

10.1. Stability

- Stable under recommended storage conditions.

10.2. Conditions to avoid

- none

10.3. Materials to avoid

- Strong acids and strong bases

10.4. Hazardous decomposition products

- Hydrogen fluoride

11. TOXICOLOGICAL INFORMATION

Toxicological data

Acute oral toxicity

- LD50, Rat, > 5,000 mg/kg

Acute inhalation toxicity

- LC50, 4 h, Rat, 4.47 mg/l

Acute dermal irritation/corrosion

- LD50, Rat, > 2,100 mg/kg

Skin irritation

- Rabbit, No skin irritation

Eye irritation

- Rabbit, No eye irritation

Sensitisation

- Guinea pig, Did not cause sensitisation on laboratory animals.

Chronic toxicity

- Inhalation, Repeated exposure, Rat, Target Organs: Respiratory system, NOEL: 1 mg/m3, observed effect
- Oral, Repeated exposure, Rat, Target Organs: skeleton, NOEL: 0.58 - 17 mg/kg, observed effect

Carcinogenicity

- Animal testing did not show any carcinogenic effects., (Sodium fluoride)

Reproductive toxicity

- Oral, Rat, 128 mg/kg, NOAEL, Effects on fertility
- Rat, 42 mg/kg, NOAEL, Developmental Toxicity

Remarks

- No data available
- In vitro tests did not show mutagenic effects
- In vivo tests did not show mutagenic effects

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity effects

Acute toxicity

- Fishes, Brachydanio rerio, LC50, 96 h, 99 mg/l
- Crustaceans, Daphnia magna, EC50, 48 h, 156 mg/l

Chronic toxicity

- Scenedesmus capricornutum (fresh water algae), LC50, 72 h, 8.8 mg/l
- Scenedesmus capricornutum (fresh water algae), NOEC, Growth rate, 1 mg/l

12.2. Mobility

- Air
  Remarks: mobility as solid aerosols
- Water
  Remarks: low solubility and mobility
- Soil/sediments, log KOC:3.18
  Remarks: adsorption on mineral and organic soil constituents

12.3. Persistence and degradability

Abiotic degradation

- Water, Soil
  Result: acid/base equilibrium as a function of pH
- Water, Soil
  Result: complexation/precipitation of inorganic and organic materials

Biodegradation

- Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

12.4. Bioaccumulative potential

- Result: non-suspected bioaccumulation

12.5. Other adverse effects

- No data available

12.6. Remarks

13. DISPOSAL CONSIDERATIONS

13.1. Waste from residues / unused products

- Where possible recycling is preferred to disposal or incineration.
- In accordance with local and national regulations.

13.2. Packaging treatment

- Dispose of as unused product.

13.3. RCRA Hazardous Waste

- Listed RCRA Hazardous Waste (40 CFR 302) - No
- Unlisted RCRA Hazardous Waste (40 CFR 302) - No

14. TRANSPORT INFORMATION

IATA-DGR

UN number	UN 3077
Class	9
Packing group	III

ICAO-Labels	9 - Miscellaneous substances
Remarks	Environmentally hazardous

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TRISODIUM HEXAFLUOROALUMINATE)

IMDG

UN number	UN 3077
Class	9
Packing group	III
IMDG-Labels	9 - Miscellaneous substances
EmS	F-A S-F
Remarks	Marine pollutant

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (TRISODIUM HEXAFLUOROALUMINATE)

Mexico (NOM-002-SCT)

UN number	UN 3077
Class	9
Packing group	III
Label	9 - Miscellaneous substances
Remarks	Environmentally hazardous

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

- Not a DOT Hazardous Material (49 CFR 172.101)
- May be exempted from this classification following the prescriptions of the multilateral agreement M80
- DOT permits classification of this material as an Environmentally Hazardous Substance (UN 3077) if other regulatory bodies so designate (49 CFR 172.401(c) & 172.202(e)).

15. REGULATORY INFORMATION

15.1. Inventory Information

Australia. Inventory of Chemical Substances (AICS)	: -	In compliance with inventory.
Canada. Domestic Substances List (DSL)	: -	In compliance with inventory.
Inventory of Existing Chemical Substances (China) (IECS)	: -	In compliance with inventory.
Japan. Inventory of Existing & New Chemical Substances (ENCS)	: -	In compliance with inventory.
New Zealand. Inventory of	: -	In compliance with inventory.

Chemicals (NZIOC)		
USA. Toxic Substances Control Act (TSCA)	: -	In compliance with inventory.
EU list of existing chemical substances (EINECS)	: -	In compliance with inventory.
Korea. Existing Chemicals Inventory (KECI (KR))	: -	In compliance with inventory.
Philippines PICCS (PICCS (PH))	: -	In compliance with inventory.

15.2. Other regulations

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)

- not regulated.

SARA Hazard Designation (SARA 311/312)

- Chronic Health Hazard: Yes.

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

- not regulated.

US. EPA CERCLA Hazardous Substances (40 CFR 302)

- not regulated.

US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

- yes.

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

- yes.

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

- not regulated.

16. OTHER INFORMATION

Ratings :

NFPA (National Fire Protection Association)
Health = 0 Flammability = 0 Instability = 0 Special =None

HMIS (Hazardous Material Information System)
Health = 0 Fire = 0 Reactivity = 0 PPE : Supplied by User; dependent on local conditions

Further information

Material Safety Data Sheets contain country specific regulatory information; therefore, the MSDS's provided are for use only by customers of the company mentioned in section 1 in North America. If you are located in a country other than Canada, Mexico or the United States, please contact the Solvay Group company in your country for MSDS information applicable to your location.

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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