



Safety Data Sheet

Fluorspar (Acid Grade)

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Fluorite, Fluorspar
Recommended Use: Flux in ferrous metallurgy, Glass & Hydrofluoric Acid Production
Manufactured For: Seaforth Mineral & Ore Co., Inc.
3690 Orange Place, Suite 495
Cleveland, Ohio, 44122
Phone: (216) 292-5820
Emergency Telephone: 800-292-9022

2. HAZARDS IDENTIFICATION

Classification of the Substance: May cause cancer by inhalation. Category 1A due to accompanying high amounts of crystalline silica which is an accompanying impurity. May cause eye irritation, class 2 classification.

Hazard Statements: (The mixture) May cause cancer by inhalation. (The mixture) May cause eye irritation.



Pictograms:

Signal Word: Danger

Hazard Pictogram: Irritant, suspected carcinogen.

Precautionary Statements: Wash (Hands, Face, contaminated skin) thoroughly after handling. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. May be Harmful if swallowed or inhaled. May cause irritation to skin, eyes and respiratory tract.

In Eyes: Rinse Cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If on Skin: Wash with plenty of soap and water. If skin irritation occurs, get medical advice. Wash contaminated clothing before reuse.

If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

If Swallowed: Call a poison center or doctor/physician. Rinse mouth.

Containers: Dispose of contents/containers in full compliance with Federal, State and local regulations.

Other Hazards: Reactive with Acids. Release of hydrogen fluoride (toxic and corrosive gas) under specific moisture and very high temperature conditions. Dust: Possibility of mechanical; irritation of eyes and skin, mucous membranes, upper respiratory tract, lungs.

Not Regulated by DOT (USA-HCS)



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Risk Phrases: Harmful by inhalation and if swallowed. Irritating to eyes, respiratory system and skin.

Safety Phrase: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing.

Other hazards: No known effects from chronic exposure.

N.B. The European Union (REACH) has issued this statement for Fluorspar:
“Product contains no hazardous substances. Fluorspar is not chemically modified. The following substances which occur in nature: Minerals, ores, ore concentrates, raw and processed natural gas, crude oil, coal.”

“Substance is not classified as dangerous according to Directive 1999/45/ec. Annex V exemptions from the obligation to register in accordance with article 2(7)(b).”

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	Per Cent
Calcium Flouride	14542-23-5	94-97.5
Crystalline Silica Dioxide Quartz Sand	7631-86-9	0.09-2.8
Calcium Carbonate	1317-65-3	1.0-2.9

4. FIRST AID MEASURES

Eye Contact	Remove contact lenses if present. Immediately rinse eyes with plenty of water, holding eyelids open for at least 20 minutes. Consult a physician. Dust may irritate eyes.
Skin Contact	Remove contaminated clothing. Wash skin with water and soap. Dust: possible skin irritation.
Inhalation	Remove the person from exposure. Bring to fresh air. If breathing is difficult, give oxygen. Get immediate medical attention. Possible irritation: mucous membranes, upper respiratory tract and lungs.
Ingestion	Rare in industry. Induce vomiting. Give a large quantity of water to dilute. UNCONSCIOUS person: DO NOT induce vomiting or give any liquid. Consult a physician.

5. FIRE FIGHTING MEASURES

Flash Point	Not applicable
Flammable Limits	Not applicable
Auto-Ignition Temperature	Not applicable



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Products of Combustion	Calcium oxide; Carbon dioxide; Hydrogen fluoride
Fire Hazard	Dust: Flammable when exposed to heat or flames. If heated to decomposition (1500°F) may liberate very irritating and toxic fumes or gases (fluorine). Flammable when exposed to flames or by chemical reaction with oxidants.
Explosion Hazard	Not explosive (mechanical impact). Dusts: Slightly explosive in presence of open flames and sparks.
Extinguishing Media	NON-FLAMMABLE. Use fire-fighting materials and procedures adapted to the immediate environment.
Protective Equipment	Firefighters must wear self-contained breathing apparatus (SCBA)

6. ACCIDENTAL RELEASE MEASURES

Spill	Avoid raising dust. Use appropriate tools to put the spilled solid in a convenient recycling container. Finish cleaning by spreading water on the contaminated surface. Collect the dampened spilled material and place into the recycling container.
Personal Protection	Large concentrations of fumes or dusts: Use a self-contained breathing apparatus (SCBA) to avoid inhalation of material. Small concentrations: Use a NIOSH/OSHA approved full face cartridge respirator or the equivalent. Full protective clothing. Boots, Gloves.
Waste Disposal	Recycle to process, if possible. Consult your local or regional authorities for acceptable disposal methods..

7. HANDLING AND STORAGE

Handling	DO NOT ingest or inhale dusts or fumes. Keep away from incompatibles (acids). Ingestion or inhalation: Seek medical advice immediately and show the label or the copy of this SDS to medical personnel.
Storage	Dry, cool and well-ventilated area. Away from acids. In low fire-risk area.



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	CAS No.	PerCent (%)	ACGIH 2014 TLV-TWA (mg/m ³)	OSHA PEL-TWA
				NIOSH REL-TWA (mg/m ³)
CalciumFluoride	7789-75-5	94-97.5	2.5 (F)	2.5 (F) 2.5 (F)
Silica (crystalline)	7631-86-9	0.09-2.8	0.025 (respirable particulate)	10/(% (SiO ₂ +2) Respirable Dust
				0.05 IDLH: 50mg/m ³
Calcium Carbonate	1317-65-3	1.0-2.9	Not established	15 (total dust) 5 respirable fraction
				5 (respirable fraction) 10 (Total)

ACGIH: American Conference of Governmental Industrial Hygienists.

OSHA: Occupational Safety and Health Administration.

Note: **Calcium (fluoride):** DNEL (systemic inhalation) : 5 mg/m³
Silica (amorphous): DNEL (systemic inhalation): 4 mg/m³
Calcium (carbonate): DNEL (systemic inhalation): 10 mg/m³

Consult local authorities for acceptable exposure limits.

Personal Protection Large concentrations of fumes or dusts: Use a self-contained breathing apparatus (SCBA) to avoid inhalation of material. Small concentrations: Use a NIOSH/OSHA approved full face cartridge respirator or the equivalent, full protective clothing, boots, gloves. Ensure that eyewash stations and safety showers are close to the workstation location.

Engineering Controls Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits.



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9. PHYSICAL AND CHEMICAL PROPERTIES

SECTION 3 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance	Solid (Crystalline powder)	Odor	Odorless
Molecular Weight	Not applicable	Taste	N/A
pH (1% soln/water)	Not applicable	Color	White to tan
Boiling Point	2 500°C (4 532°F)	Volatility	N/A
Melting Point	1 420°C (2 588°F)	% Moisture	N/A
Critical Temperature	Not available	Odor Threshold	N/A
Specific Gravity	3.18 (Water=1)	Water/Oil Dist. Coeff.	N/A
Vapor Pressure	Not applicable	Ionicity (in water)	N/A
Vapor Density	Not available	Dispersion	N/A
Solubility	No (water); Yes (ammonium salts)		

10. STABILITY AND REACTIVITY

Stability	stable under normal conditions.
Conditions of Instability:	Strong acid at high temperatures
Incompatibilities:	Reactive with acids. Calcium (fluoride): with acids, chemically active metals, reducing agents, water. Contact with hot concentrated sulfuric acid: possible production of hydrofluoric acid (Hydrogen fluoride). Silica (crystalline): violent reaction with: fluoride, oxygen difluoride, chlorine trifluoride. <i>NOTE: This list of products is not exhaustive. Verify technical documents to determine any incompatibilities with your process.</i>
Corrosivity	None

11. TOXICOLOGICAL INFORMATION

Routes of Entry	Ingestion. Inhalation. Eye and skin contacts.
Acute Toxicity	Calcium Fluoride: Oral acute (LD50): 4,250 mg/Kg (Rat). Intraperitoneal (LD50) > 1500 mg/Kg (rat), 2638 mg/Kg Mouse, (RTECS) Silica crystalline (Quartz) Oral acute (LoTD) : 120mg/Kg (rat) Inhalation acute LoTC 40mg/Kg (Mouse). Intratracheal acute (LoTD): 15.69 mg/Kg (Rat); 16.7 mg/Kg (Mouse) Intravenous acute)LoLD; 90 mg/Kg Rat); 40 mg/Kg Mouse. RTECS
Irritation-sensitisation	Calcium Carbonate: Oral Acute LD50: 6450 (Rat). RTECS Possibility of eyes and skin, upper respiratory tract irritation. Sensitisation. ; No known effects. Calcium carbonate: Severe irritation: 750 ug/24 hour (Eye, Rabbit.) Moderate irritation : 500 mg/24 hour (Skin, Rabbit). RTECS)
Acute Effects	Solid form: No health hazards. Conditions and work practices which generate dusts or fumes should be avoided or controlled. . Ingestion and inhalation: possibility of diffuse abdominal pain, nausea, vomiting, diarrhea, thirst, saliva, albuminuria, shock. Respiratory system. Exposure to fibrous form may cause silicosis (Fibrosis of the lungs), inflammation, emphysema.



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Chronic Effects

No known effects from chronic exposure. Repeated or prolonged exposure (Normal work conditions). Do not aggravate medical conditions.

Silica crystalline (Quartz): the evidence of carcinogenicity to humans is limited to crystalline silica. The silica in this product contains varying concentrations of crystalline (quartz) and amorphous silica. Target organs: respiratory system. Signs or symptoms of overexposure, shortness of breath, silicosis, emphysema..

Calcium Carbonate: No chronic effects of exposure have been reported, Irritant for : skin eyes, nose throat respiratory tract can cause: sneezing and coughing, use as an antacid (small quantity). Calcium supplement.

Toxicity: Workers with the following pre-existing conditions warrant particular attention:

Silica (crystalline): tuberculosis.

Calcium (carbonate): respiratory diseases.

Eating, drinking, and smoking must be prohibited in areas where this material is handled and processed. Wash hands and face before eating, drinking, and smoking.

CARCINOGENICITY:

Calcium carbonate ; Calcium fluoride: NOT A CARCINOGEN 9IARC0. NOT CLASSIFIABLE (Human, A4, ADGIH) Silica crystalline (quartz) PROVEN Group 1 , IARC) (NTP); CARCINOGEN (NIOSH SUSPECTED (Human A2, ACGIH)

MUTAGENICITY, TERATOGENICITY

Calcium fluoride: Cytogenetic analysis: 1 g/Kg (Ascites tumor, Rat) (RTECS)
Calcium Fluoride: INTRAPERITONEAL LoTD: 3200 mg/Kg (9 day pregnant) (Mouse) effects on fertility: Pos-t implantation mortality (e.g. dead and/or resorbed implants per total number of implants) 67,200 mg/Kg (1-21 day pregnant) other developmental abnormalities (RTECS).

Repeated or prolonged exposure (normal work conditions): do not aggravate medical conditions.

Silica Crystalline (quartz):

DNA damages: 120mg/l/24 hour (Cells,Human; 3 mg/Kg intratracheal, Rat, RTECS

Calcium (fluoride): not carcinogen (IARC). Chronic overexposure: may cause increased bone density. Irritant for: skin, eyes, nose, throat and respiratory tract. May cause: coughing, chest discomfort.

Silica (amorphous): target organ for acute and chronic overexposure respiratory system. Possible signs after chronic overexposure: shortness of breath. Prolonged dust inhalation can cause silicosis (fibrosis of the lungs).

Calcium (carbonate): not considered a carcinogen (IARC). No chronic effects of exposure have been reported. Irritant for: skin, eyes, nose, throat, respiratory tract. Can cause: sneezing and coughing, use an antacid (small quantity); calcium supplement.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life. May cause long terms harmful effects in aquatic environment

Toxicity to Animals

Calcium (fluoride): ACUTE oral (LD50): 4 250 mg/kg (rat)

Mobility (Soil)

Not water soluble. Soluble compounds produced by acidic conditions becomes mobile in water.



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Biodegradation Products	Not biodegradeable
Biodegradation Products (Toxicity)	Not applicable
BOD and COD	Not available

13. DISPOSAL CONSIDERATIONS

Disposal methods Recycle to process, if possible. Consult local or regional authorities. If the product becomes a waste, material should be tested to determine if it must be classified as a hazardous waste under the Resource Conservation Recovery Act (RCRA 40CFR261.3). Discard in full compliance with Federal, Provincial and local regulations.

RCRA P-Series and RCRA U-Series: Not listed.

14. TRANSPORT INFORMATION

ADR	Not applicable.
PIN	Not applicable.
Special Provisions (Transport)	Not applicable.
DOT (USA)	Not Regulated

15. REGULATORY INFORMATION

TSCA	(EPA, Toxic Substance Control Act) Chemical Inventory (40CFR710): Listed Calcium fluoride: Silica dioxide (crystalline)
CEPA DSL Canada	Canadian Environmental Protection Act (DEPA) on Domestic Substances List (DSL); Acceptable for use under the provisions of CEPA
Other Regulations	CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): On the Domestic Substances List (DSL); Acceptable for use under the provisions of CEPA.
Classification HCS (USA)	Not regulated
Classifications DSCL (EEC)	Not regulated

NFPA (National Fire Protection Association) (USA)

Fire Hazard 0 **Reactivity** 0 **Health** 1 **Special Hazard**



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16. OTHER INFORMATION

- References**
- TLVs and BEIs (2009). Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices. ACGIH, Cincinnati, OH – <http://www.acgih.org>
 - CCOHS (2009) – Canadian Centre for Occupational Health and Safety – <http://www.ccohs.ca/>
 - ERG (2008). Emergency Response Guidebook, US Department of Transportation, Transport Canada, et le Secretariat of Communications and Transportation of Mexico
 - HSDB (2009) – Hazardous Substances Data Bank. TOXNET® Network of databases on toxicology, hazardous chemicals, and environmental health. NLM Databases & Electronic Resources, US National Library of Medicine, NHI, 8600 Rockville Pike, Bethesda, MD 20894 – <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>
 - ESIS: C&L (Classification and Labeling), substances or preparations in accordance with Directive 67/548/EEC (substances) and 1999/45/EC (preparations),
 - ESIS: EINECS (European Inventory of Existing Commercial Chemical Substances) O.J. C 146A, 15.6.1990
 - ESIS: EINECS corrections published in O.J. C 54/13 01.03.2002, 2002/C54/08.
 - IARC – Monographs on the Evaluation of Carcinogenic Risks to Humans (collection) – <http://www-cie.iarc.fr/>
 - Merck Index (1999). Merck & Co., Inc., 12th edition
 - NIOSH US (2009) – Pocket Guide to Chemical Hazards – <http://www.edc.gov/niosh/npg/>
 - Patty's Industrial Hygiene and Toxicology, 3rd Revised Edition
 - Reglement sur les produits controles (Canada)
 - RTECS (2009). Registry of Toxic Effects of Chemical Substances, NIOSH, CDC
 - Toxicologie industrielle & intoxication professionnelle, 3e edition, Lauwerys
 - TSCA (2009) – US EPA Toxic Substance Control Act, Chemical Inventory. System of Registries (SoR), Substance Registry Services, http://iaspub.epa.gov/sor_internet/registry/substreg/searchandretrieve/substancesearch/search.do

Glossary	ACGIH:	American Conference of Governmental Industrial Hygienists.
	HSDB:	Hazardous Substances Data Bank.
	IARC:	International Agency for Research on Cancer.
	NIOSH:	National Institute of Occupational Safety and Health.
	NTP:	US National Toxicology Program.
	OSHA:	Occupational Safety and Health Administration.
	RTECS:	Registry of Toxic Effects of Chemical Substances.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

Issue Date: 10/1/2022