

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



SEAFORTH
MINERAL

Fluorspar (Acid Grade)

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Fluorite, Fluorspar, Acid Grade 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

Signal Word: Warning

Pictogram:



Safety Phrases: May be Harmful if swallowed or inhaled. May cause irritation to skin, eyes and respiratory tract.

Classification (EEC): Not controlled (See section 15).

Other hazards: No known effects from chronic exposure. Possibility of irritation, silicosis. Avoid dusty conditions.

Environmental hazards: No known effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Name | CAS No. | Per Cent |
|--------------------|-----------|----------|
| Calcium Flouride | 7789-75-5 | 94-97.5 |
| Crystalline Silica | 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.

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



SEAFORTH
MINERAL

Fluorspar (Acid Grade)

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

Products of Combustion: Calcium oxide; Hydrogen fluoride

Fire Hazard: Dust is Flammable when exposed to extreme 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 at extreme temperatures.

Explosion Hazard: Not explosive (mechanical impact). Dusts: Slightly explosive in presence of open flames and sparks and elevated temperature.

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. Dispose according to local and regional authority requirements.

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.

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.

Storage: Dry, cool and well-ventilated area. Away from acids. In low fire-risk area.

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

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



Fluorspar (Acid Grade)

Personal Protection: Safety glasses. Coveralls. Working gloves and boots. Dusts respirator. Be sure to use a NIOSH approved respirator or equivalent when concentrations exceed occupational exposure limits.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| ACGIH | OSHA (USA) | Quebec | CA | | |
|--------------------|------------|-------------|------------------------------|------------------------------|----------------------------|
| Name | CAS No. | PerCent (%) | TLV-TWA (mg/m ³) | PEL-TWA (mg/m ³) | TWAEV (mg/m ³) |
| Calcium Fluoride | 7789-75-5 | 80-95 | 2.5 (F) | 2.5 (F) | 2.5 (F) |
| Silica (amorphous) | 7631-86-9 | 2-11 | 3 (respirable Fraction) | 80% SiO ₂ | 6 |
| Calcium Carbonate | 1317-65-3 | 2-4 | 10 | 15 | 10 (Total) |
| | | | | 5 (respirable Dusts) | 5 (respirable Dusts) |

ACGIH: American Conference of Governmental Industrial Hygienists.

OSHA: Occupational Safety and Health Administration.

Note: Calcium (fluoride): UNITED KINGDOM OEL-TWA: 2.5 mg (F)/m³.
ORAL acute (LD50): 4 250 mg/kg (rat)

Silica (amorphous): ORAL acute (LD50): 22 500 mg/kg (rat); 15 000 mg/kg (mouse)

Calcium (carbonate): ACGIH TLV-TWA: total dust containing no asbestos and <1% crystalline silica.
UNITED KINGDOM OES-TWA: 10 mg/m³ (total inhalable dusts); 5 (respirable dusts).

ORAL acute (LD50): 6 450 mg/kg (rat) *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.

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



Fluorspar (Acid Grade)

9. PHYSICAL AND CHEMICAL PROPERTIES

SECTION 3 – PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|----------------------------------|-------------------------------|--------------|
| Physical State & Appearance | Solid (Crystalline powder) | Odor | Odorless |
| Solubility | No (water); Yes (ammonium salts) | Odor Threshold | N/A |
| pH (1% soln/water) | N/A | Color | White to tan |
| Boiling Point | 2 500°C (4 532°F) | Volatility | N/A |
| Flash Point: | N/A | Viscosity: | N/A |
| Flammable Limits: | N/A | Explosion Hazard: | N/A |
| Auto-Ignition Temperature: | N/A | Decomposition Temp | N/A |
| Melting Point | 1 420°C (2 588°F) | % Moisture | N/A |
| Critical Temperature | N/A | Evaporation Rate | N/A |
| Specific Gravity | 3.18 (Water=1) | Water/Oil Dist. Coeff. | N/A |
| Vapor Pressure | N/A | Ionicity (in water) | N/A |
| Vapor Density | N/A | Dispersion | N/A |
| Partition coefficient: n-octanol/water | N/A | Relative Density | 3.18 |

10. STABILITY AND REACTIVITY

| | |
|-----------------------------------|---|
| Stability | Yes, stable under normal conditions. |
| Conditions of Instability: | Not available |
| 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 (amorphous): | violent reaction with: fluoride, oxygen difluoride, chlorine trifluoride. |

NOTE: This list of products is not exhaustive. Verify technical documents to determine any incompatibilities with your process.

| | |
|--------------------|----|
| Corrosivity | No |
|--------------------|----|

11. TOXICOLOGICAL INFORMATION

Routes of Entry Ingestion. Inhalation. Eye and skin contacts.

Acute Effects Solid form: No health hazards. Conditions and work practices which generate dusts or fumes should be avoided or controlled. Dusts and fumes can cause health effects. Ingestion and inhalation: possible diffuse abdominal pain, nausea, vomiting, diarrhea, thirst, saliva, albuminuria, shock.

Chronic Effects CARCINOGENICITY: SUSPECTED: amorphous silica (IARC, NTP). **MUTAGENICITY, TERATOGENICITY and TOXICITY TO THE REPRODUCTIVE SYSTEM:** not applicable. No known effect from chronic exposure.

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

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



SEAFORTH
MINERAL

Fluorspar (Acid Grade)

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 (NIOSH 90-117): 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.

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

Silica (amorphous): 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.

12. ECOLOGICAL INFORMATION

| | |
|--|--------------------------------------|
| Ecotoxicity | Not available |
| Toxicity to Animals Calcium (fluoride): | ACUTE oral (LD50): 4 250 mg/kg (rat) |
| Biodegradation Products | Not applicable |
| Biodegradation Products (Toxicity | Not applicable |
| Remarks on Environment | |
| Calcium fluoride: | Used to fluoridate drinking water. |
| BOD5 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

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



Fluorspar (Acid Grade)

Measures Use appropriate tools to minimize dust generation. Put the spilled solid in a convenient recycling container. Finish cleaning by spreading water on the contaminated surface and dispose of, according to local and regulatory requirements.

TDG (Pictograms) Not regulated (Canada)

PIN Not applicable

Special Provisions (Transport) Not applicable

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 |
|--------------------|---|-------------------|---|---------------|---|-----------------------|

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

Seaforth Mineral & Ore Co. Inc.

Safety Data Sheet



Fluorspar (Acid Grade)

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: 06/01/2015