

Elite FLUOR- SAFETY DATA SHEET (SDS)

Prepared according to GHS (Rev.9) and ISO 11014:2022

1. Identification of the Substance and Company

Product Name: Metallurgical Fluorspar (CaF₂ 70-90%)

Product Code: FS-70/90

Form: Lumpy or Crushed form (0-100 mm)

CAS Number: 7789-75-5 (main constituent, natural mineral)

Formula: CaF₂

Supplier: Elite Fluor

Origin: Kuh-e-Sefid Mine, Iran

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Recommended Use: Flux in steelmaking and metal smelting industries; may also be used for ceramic and glaze applications.

Physical Description: Light gray to violet mineral lumps or crushed particles.

2. Hazard(s) Identification

Classification according to GHS: Not classified as hazardous under the Globally Harmonized System (GHS).

Signal Word: None required

Hazard Pictogram(s): None required

Hazard Statements:

- This material is not classified as hazardous under normal conditions of use.
- Fine powder may cause temporary mechanical irritation to eyes, skin, and respiratory tract.
- Inhalation of respirable dust at high concentrations may cause coughing or discomfort.

Precautionary Statements:

- Avoid generating or breathing dust.
- Use adequate ventilation or dust extraction systems when handling fine material.
- Wear protective gloves, goggles, and an N95/P2 dust mask when handling bulk material.
- Wash hands and exposed skin thoroughly after handling.

Hazard Overview:

Metallurgical fluorspar is a stable, non-reactive, non-flammable mineral. Dust may cause mild irritation if inhaled or contacted with eyes or skin.

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3. Composition / Information on Ingredients

Component	CAS No.	Range (%)	Remarks
Calcium Fluoride (CaF ₂)	7789-75-5	70-90	Main mineral constituent
Silica (SiO ₂)	7631-86-9	5-23	Natural gangue mineral
Iron Oxide (Fe ₂ O ₃)	1309-37-1	0.005-0.015	Trace impurity
Phosphorus Pentoxide (P ₂ O ₅)	1314-56-3	0.015-0.045	Trace impurity
Loss on Ignition (LOI)	—	0.5 - 2.5	Includes volatiles and minor carbonates
Moisture	—	≤1.5	Free surface moisture

4. First Aid Measures

Eye Contact: Rinse with plenty of water for several minutes. Seek medical advice if irritation persists.

Skin Contact: Wash thoroughly with soap and water.

Inhalation: Move to fresh air; if symptoms occur, seek medical advice.

Ingestion: Rinse mouth and drink water; seek medical advice if large quantities are swallowed.

5. Fire-Fighting Measures

Flammability: Non-combustible.

Suitable Extinguishing Media: Use extinguishing agent suitable for surrounding fire.

Special Hazards: None known.

Protective Equipment: Standard protective gear.

6. Accidental Release Measures

Avoid generating dust. Sweep or vacuum material and collect mechanically for reuse or disposal.

Prevent entry into drains or watercourses.

7. Handling and Storage

Handle gently to minimize dust formation. Avoid breathing dust during loading or furnace charging.

Store in a dry, well-ventilated area away from acids (may release HF gas upon contact).

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8. Exposure Controls / Personal Protection

Exposure Limit (as Fluoride Ion, F⁻): 2.5 mg/m³ (ACGIH TLV-TWA, 2024)

Personal Protective Equipment (PPE):

Respiratory Protection: Dust mask (N95 / P2)

Eye Protection: Safety goggles

Skin Protection: Gloves and protective clothing

Hygiene: Wash hands after handling; avoid eating or drinking during work.

9. Physical and Chemical Properties

Appearance: Light gray to violet mineral lumps or crushed particles

Odor: Odorless

CaF₂ Content: 70-90%

Bulk Density: 1.5-1.8 g/cm³

Specific Gravity: 3.18 g/cm³

Solubility: Insoluble in water

pH (10% slurry): Neutral (6.5-7.5)

Melting Point: ~1418°C

10. Stability and Reactivity

Chemical Stability: Stable under normal conditions.

Incompatibility: Strong acids (releases HF gas).

Decomposition Products: Hydrogen fluoride when exposed to acids.

11. Toxicological Information

Acute Toxicity: Low.

Chronic Effects: Long-term inhalation of fluoride dust may cause skeletal fluorosis.

Irritation: Dust may irritate eyes, skin, and respiratory tract.

12. Ecological Information

Insoluble and stable mineral; not expected to bioaccumulate.

Avoid release of fine particles to water or soil.

Persistence and degradability: Not applicable (inorganic mineral).

Mobility in soil: Very low, due to insolubility.

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13. Disposal Considerations

Dispose of in compliance with local environmental regulations.
Non-hazardous mineral waste; may be reused in industrial processes.

14. Transport Information

UN Number: Not regulated
Hazard Class: Non-hazardous
Packing Group: None
Proper Shipping Name: Calcium Fluoride (natural)
Transport Regulations: Not regulated under ADR/RID/IMDG/IATA.

15. Regulatory Information

This product is not classified as hazardous according to the Globally Harmonized System (GHS).
Complies with EU REACH Regulation (EC) No. 1907/2006 and CLP Regulation (EC) No. 1272/2008.
Subject to general workplace exposure limits for fluoride compounds.

16. Other Information

Prepared by: Elite Fluor – Safety and Quality Department
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This SDS applies to Metallurgical Fluorspar (CaF_2 70–90%) produced from Kuh-e-Sefid Mine, Iran.

Disclaimer: The information herein is believed to be accurate but does not constitute a warranty, expressed or implied.

Users are responsible for ensuring safe use in their specific applications.