

Material Safety Data Sheet (MSDS)

Fluorspar (Calcium Fluoride)

Chemical Name: Calcium Fluoride (CaF₂) | CAS No. 7789-75-5

1. Identification of the Substance and Supplier

Product Name	Fluorspar (Calcium Fluoride)
Chemical Formula	CaF ₂
CAS No.	7789-75-5
Synonyms	Fluorspar, fluorite, calcium fluoride, acidspar, metspar
Product Use	HF / AHF manufacture, steel & aluminium flux, ceramics, optics
Supplier	Ochnology Solution Pvt. Ltd., B-153, Sector-4 Defence Colony, Dehradun, Uttarakhand, India – 248001
Contact	projects@ochnology.com bd@ochnology.com

2. Hazards Identification

GHS Classification: Acute Tox. 4 (oral/inhalation – fluoride); STOT RE (skeletal/dental fluorosis on prolonged exposure). Releases toxic, corrosive hydrogen fluoride (HF) on contact with acids.
Signal word: WARNING.

- Harmful if swallowed or if dust is inhaled (fluoride toxicity)
- Contact with acids releases hydrogen fluoride (HF) – a toxic, highly corrosive gas
- Dust may irritate the eyes, skin, and respiratory tract
- Prolonged or repeated exposure to fluoride may cause fluorosis (skeletal / dental)
- Keep strictly separated from acids during storage and handling

3. Composition / Information on Ingredients

Component	CAS No.	Concentration
Calcium Fluoride (CaF ₂)	7789-75-5	85% – 99%+ (grade dependent)
Silica (SiO ₂)	14808-60-7	0.1% – 3% (grade dependent)

Calcium Carbonate & other minerals

Various

Balance

4. First-Aid Measures

Inhalation: Move to fresh air. If HF exposure is suspected, seek immediate medical attention. Treat respiratory irritation promptly.

Skin Contact: Wash thoroughly with plenty of water. If contact with acid-contaminated material or HF is suspected, seek immediate medical attention and consider calcium gluconate gel treatment as advised by a physician.

Eye Contact: Rinse immediately and continuously with water for at least 15 minutes. Seek immediate medical attention.

Ingestion: Do NOT induce vomiting. Rinse mouth, give water or milk (calcium). Seek immediate medical attention – fluoride is toxic if swallowed.

5. Fire-Fighting Measures

- Non-combustible; does not burn
- Use extinguishing media appropriate to the surrounding fire
- In a fire, contact with acids or high heat may release toxic fluoride / HF fumes
- Wear full protective equipment and self-contained breathing apparatus (SCBA)

6. Accidental Release Measures

- Avoid generating dust; do NOT allow contact with acids
- Collect mechanically into labelled containers; avoid wetting with acidic water
- Wear full PPE (respirator, goggles, gloves, protective clothing)
- Prevent entry into drains and watercourses; report significant spills

7. Handling and Storage

- Avoid inhalation of dust and ingestion; use local exhaust ventilation
- Store strictly away from acids – contact releases toxic hydrogen fluoride (HF)
- Keep containers closed and in a dry, well-ventilated area
- Wear respiratory protection, goggles, and impervious gloves; wash after handling

8. Exposure Controls / Personal Protection

- Fluorides (as F): 2.5 mg/m³ (8-hr TWA) – typical occupational reference value
- Provide effective local exhaust ventilation to control dust
- Respiratory protection: dust respirator (N95/P2 or higher) where limits may be exceeded
- Wear chemical safety goggles, impervious gloves, and protective clothing; ensure good hygiene

9. Physical and Chemical Properties

Property	Value
Appearance	White / off-white / grey powder, lumps, or briquettes
Odour	Odourless
pH (in suspension)	Approx. 7 – 8 (neutral; low solubility)
Melting Point	Approx. 1,418°C
Solubility in Water	Very low (~16 mg/L)
Bulk Density	Approx. 1.5 – 3.2 g/cm ³ (form dependent)

10. Stability and Reactivity

- Stable under normal conditions of storage and use
- Reacts with strong acids (e.g. sulphuric acid) to release hydrogen fluoride (HF)
- Incompatible with acids and strong oxidisers
- No hazardous polymerization occurs

11. Toxicological Information

- Harmful if swallowed or inhaled due to fluoride content
- Acute fluoride poisoning possible from large ingested doses
- Chronic over-exposure to fluoride can cause fluorosis (skeletal / dental)
- Dust may cause irritation; HF (released on acid contact) causes severe burns

12. Ecological Information

- Low water solubility limits immediate aquatic availability
- Fluoride release in quantity may be harmful to aquatic organisms
- Avoid release of large quantities into the environment
- Prevent acidic conditions that could mobilise fluoride / generate HF

13. Disposal Considerations

- Dispose of in accordance with local, state, and national regulations
- Do not dispose of with acidic wastes (risk of HF generation)
- Use a licensed waste contractor for significant quantities where required

14. Transport Information

UN Number	Generally not regulated as supplied (verify by grade / regulation)
Proper Shipping Name	Calcium fluoride (not classified as dangerous goods in most cases)
Hazard Class	Not applicable in most cases (confirm for the relevant mode)
Packing Group	Not applicable
Remarks	Keep separate from acids during transport; confirm current dangerous-goods status

15. Regulatory Information

- Classified for fluoride toxicity; releases HF on acid contact
- Subject to occupational exposure regulations for fluorides
- Listed on major chemical inventories as calcium fluoride (CAS 7789-75-5)

16. Other Information

This MSDS has been prepared in accordance with the GHS 16-section format and covers acid, metallurgical, ceramic, and optical grades of fluorspar. The principal hazards are fluoride toxicity and the release of toxic, corrosive hydrogen fluoride (HF) on contact with acids. Keep strictly separated from acids. Information relates to the specific material designated.

Disclaimer: The information in this MSDS is provided in good faith and is based on current knowledge. It is intended as a guide for safe handling, use, storage, and disposal, and is not a warranty of quality. Ochnology Solution Pvt. Ltd. accepts no liability for loss or damage arising from its use. Users are responsible for ensuring suitability and safety for their own conditions of use.