



FLUORSPAR

**For Aluminum, Gasoline, Insulating foams, Refrigerants,
Steel, and Uranium fuel**

Fluorspar

Fluorspar (also referred to as fluorite) is a mineral composed of calcium fluoride, CaF_2 . It is a naturally occurring mineral that tends to form in rocks that have been subjected to hydrothermal activity.

The main fluorite-containing mineral is fluorspar, CaF_2 . In its pure form it contains 51.5% calcium and 48.9% fluorine, and has a specific gravity of 3.18. The hardness is about 4. Commonly it is glassy, colorless, white, or grayish.

It can be also purple, pink, blue, green, or yellow. Fluorspar belongs to a cubic system mineralogically and crystallizes into cubic shapes in vugs and cavities. In most of the ore types it appears in massive forms, with interlocking crystals.

Fluorspar is used in many different processes throughout the chemical, ceramic and metallurgical industries, and is therefore split into three different grades: acid, ceramic and metallurgical.

- The highest-grade fluorspar, or “acid grade fluorspar,” is 97% or more CaF_2 and is used to produce hydrogen fluoride or hydrofluoric acid by reacting with sulfuric acid in the following reaction: $\text{CaF}_2(\text{s}) + \text{H}_2\text{SO}_4 \rightarrow \text{CaSO}_4(\text{s}) + 2 \text{HF}(\text{g})$. The hydrofluoric acid produced by this reaction is then converted into fluorine, fluorocarbons or other diverse fluoride materials.
- The second highest grade fluorspar, or “ceramic grade fluorspar,” is 85-95% CaF_2 and is often used to manufacture glass, enamel and cooking utensils.
- The lowest grade fluorspar, or “metallurgical grade fluorspar,” is 60-93% CaF_2 and can be used to help lower the melting point of raw materials used in steel production. This aids in removing impurities and also in the production of aluminum. In steel making, it is added to metal bath to promote slag fluidity and in the basic process to assist in the removal of Sulphur and phosphorus. The wide range in content is catered to customer preference and needs, but mostly customers prefer material with higher CaF_2 content.

	Acid Grade	Metallurgical Grade
Calcium Fluoride (CaF ₂)	Above 97%	Above 85%
Calcium as Calcium Carbonate	1 to 2 %	6 to 10%
Silica	Up to 1%	Up to 5%
Mixed Oxide ((Fe ₂ O ₃ , Al ₂ O ₃ etc.)	0.1 to 0.5%	1 to 2%
Barium as Sulphate	—	Up to 0.2%
Lead as Sulphate	—	Up to 0.5%
Zinc as Sulphate	—	Up to 0.5%
Sulphur	—	Up to 0.3%

Fluorspar is indispensable in everyday consumer products.

1. Refrigerators and Air Conditioners in homes, businesses and automobiles all require fluorspar.

Without fluorspar, widespread personal refrigeration would likely not exist today.



2. Fluoropolymers are the basis for high end plastics like Teflon and Gore-Tex.

3. Medicine - half a new drug formulas include fluorspar derivatives.



Fluoropolymers are incredibly useful due to their resistance to:

- High Temperatures
- Chemical Reactions
- Corrosion
- Stress Cracking

Fluorspar is also available in Briquettes form or Powder form

Fluorspar Briquettes

Fluorspar briquettes for the steel industry, ceramic industry and glass industry. Fluorspar (also called fluorite) is **the mineral form of calcium fluoride, CaF₂**. Industrially, fluorite is used as a flux for smelting, and in the production of glasses, electrodes, alloys, hydrofluoric acid and enamels.



CaF ₂ 85% Min Briquettes				
Specification				
Elements	Analysis basis	Min/Max	Guaranteed	Typical
CaF ₂	Dry Basis	Min	83%	85%
Fe ₂ O ₃	Dry Basis	Max	12%	10%
SiO ₂	Dry Basis	Max	3%	2%
CaCO ₃	Dry Basis	Max	2%	1.50%
P	Dry Basis	Max	0.05%	0.03%
S	Dry Basis	Max	0.05%	0.03%
Compressive St	N/cm ²	Min	1700	2000
Moisture	Dry Basis	Max	1%	0.70%
Sizing				
20-50 mm	90%	Min		

Fluorspar Powder

Multiple uses in the **fiberglass, ceramic, welding rod, glass industry as well as hydrofluoric acid production**. Also used in blending with burned lime & dolomite for the steel industry.





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altech@altechgroup.net
www.altechgroup.net

