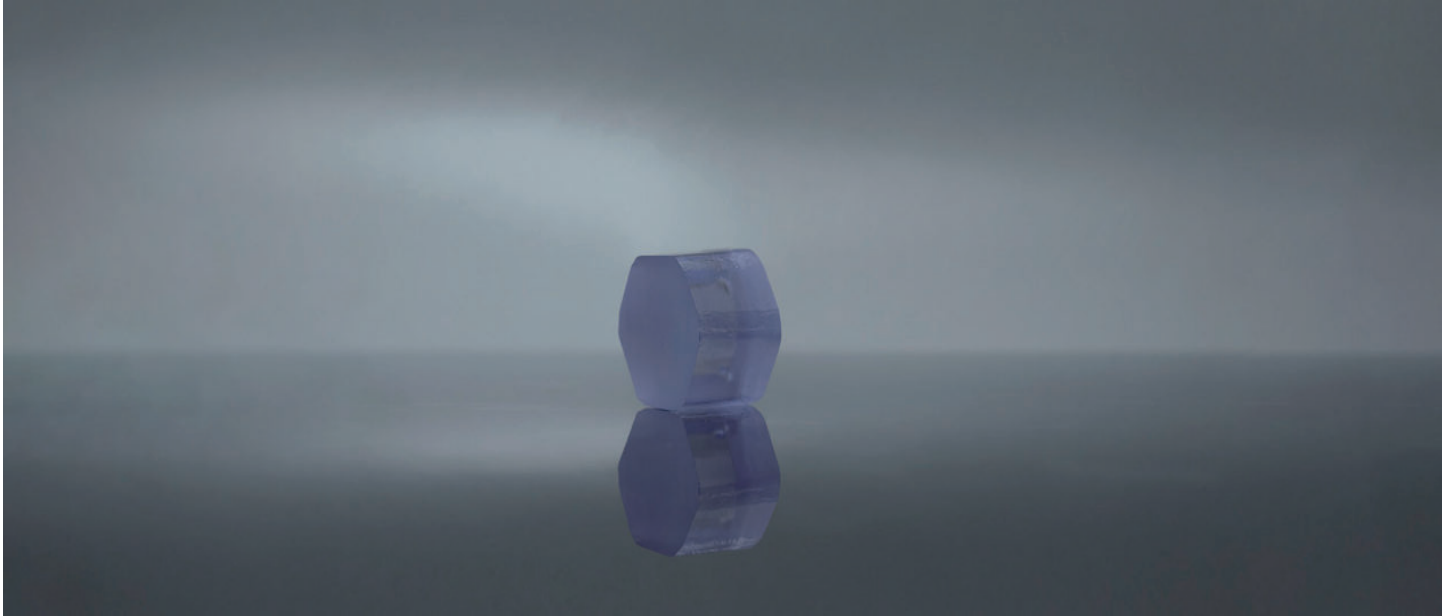


CaF₂ /Eu: CaF₂ scintillator crystals



DESCRIPTION

Europium doped calcium fluoride crystal (Eu:CaF₂) shows high transparency in a wide wavelength range, high chemical resistance, high laser damage threshold and low refractive index. CaF₂ shows strong shock resistance, thermal shock resistance and good mechanical processing performance. Eu:CaF₂ exhibits chemical inertness. It is hardly soluble in water and insoluble in most organic substances. Its emission peak is located at 435 nm, which matches well with the photomultiplier tube (PMT) and silicon photodiode (PD).

Eu:CaF₂ scintillation crystal becomes an ideal material for the detection of low-energy γ - rays and charged particles (especially β - rays). It is widely used in low-energy nuclear physics experiments and the detection of charged ions in nuclear reactors, and the environment radiation monitoring and radiological medical diagnosis and other fields.

FEATURES

- Good mechanical properties
- High light output
- Chemically inert
- High Transparency
- High Chemical Resistance
- High Laser Damage Threshold
- Low Refractive Index

APPLICATIONS

- γ -ray detection
- β -ray detection
- Radioactivity medical science diagnose
- Scintillation screens
- 2.8 μ m Laser



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PARAMETERS

MATERIAL PROPERTIES

Chemical formula	Eu: CaF ₂
Density (g/cm ³)	3.18
Melting point (°C)	1360
Hardness (Mohs)	4
Hygroscopic	No
Cleavage	<111>
Solubility (g/100gH ₂ O)	0.0017
Thermal conductivity	9.7
Thermal expansion coeff (C ⁻¹)	19.5*10 ⁻⁶

SCINTILLATOR PROPERTIES

Wavelength (Max.emission) (nm)	435
Wavelength range (nm)	395~525
Decay time (ns)	950
Light output (photons/MeV)	30000
Refractive index	1.47@435nm
Radiation length (cm)	3.05
Optical transmission (um)	0.13-10
Transmittance (%)	TBA
Reflection loss/surface (%)	5.4
Energy resolution (%)	<8
Neutron capture cross-section (barns)	TBA
Afterglow	<0.3

SPECTRA

