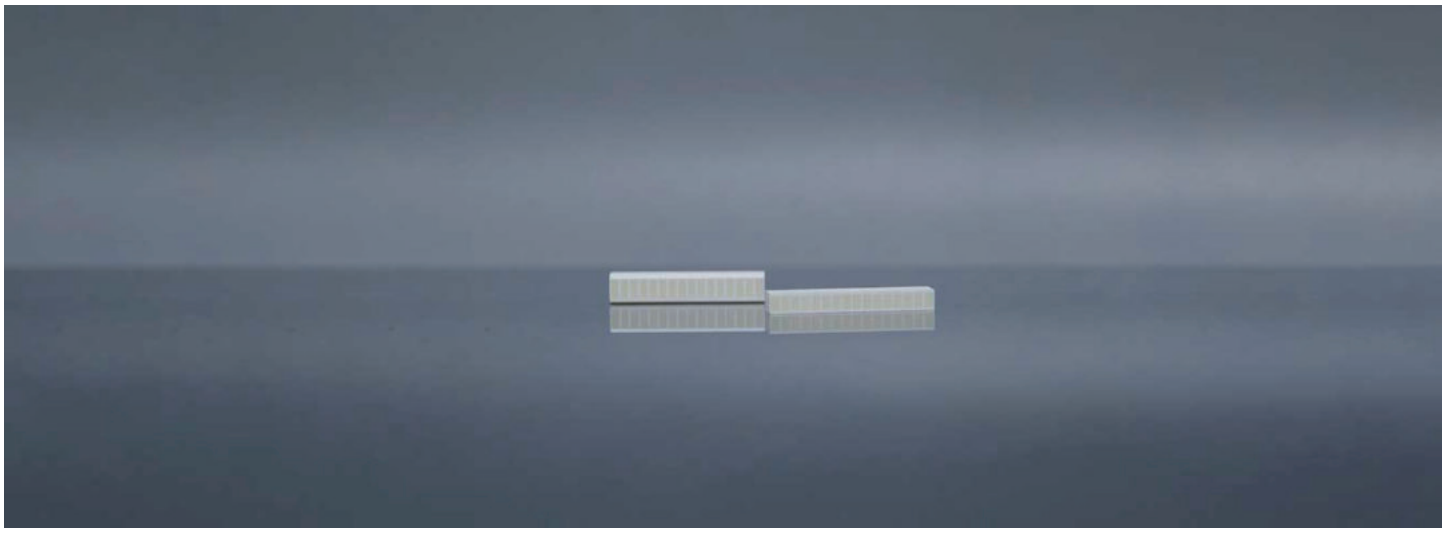
GOS Scintillator Ceramic



DESCRIPTION

GOS (Gd_2O_2S, gadolinium oxysulfide) has excellent characteristics such as high light output, high density, short afterglow, etc. GOS ceramic belongs to hexagonal system structure. It exhibits chemical inertness. GOS doped with rare earth ion has relatively high light output and extremely low afterglow. The emission peaks range from 480 to 900 nm matchs well with spectral sensitivity of silicon photodiodes. It has been widely used for purposes such as CT scanners, security devices and non-destructive testing.

FEATURES

- High light output
- Low afterglow
- High density
- High X-ray absorption efficiency
- Chemical inertness

APPLICATIONS

- X-ray CT
- X-ray microscope
- CT scanners
- Neutron detection

PARAMETERS

MATERIAL PROPERTIES

Property	Value
Materials	Ge_2O_2S
Density (g/cm^3)	7.34
Crystal structure	Hexagonal
Lattice parameters	a=b=3.85827Å
Hygroscopicity	No
Cleavage plane	No
Solubility ($g/100gH_2O$)	N/A

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SCINTILLATOR PROPERTIES

Property	Value
Wavelength(Max. emission) (nm)	510
Wavelength range (nm)	400-900
Decay time	5.5
Wide-Gap (eV)	4.6-4.8
Light output(photons/MeV)	27000
X-ray attenuation coefficient (cm^{-1})	52 at 70 keV 0.80 at 500 keV
Afterglow (%)	<0.01
Radiation damage	-3

SPECTRA