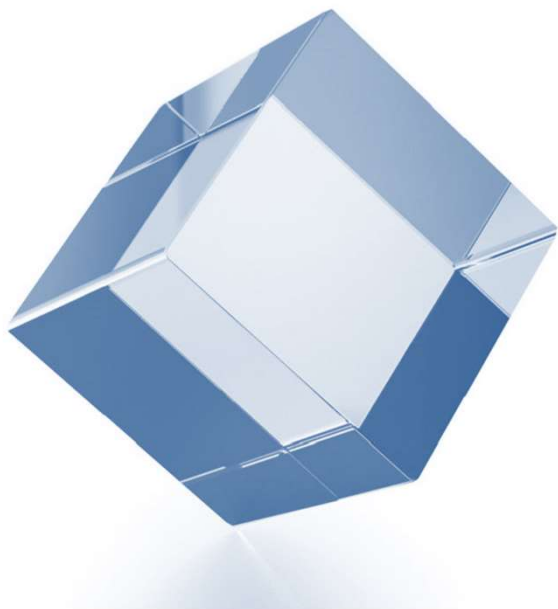


Barium Fluoride

德硅凯氟
DESIOPTOE

BaF₂ Datasheet



DESIOPTOE is a professional fluoride crystal supplier. DESIOPTOE's excellent purification material process makes BaF₂ crystals have good transmittance performance, making BaF₂ crystals widely used in thermal imaging, night vision and broadband surveillance imaging detectors, integrating visible light to infrared and other applications.

The low spectral dispersion of BaF₂ makes it a good material choice for aberration and color correction.

BaF₂ is an excellent scintillator crystal that performs well in high-energy γ -radiation.

KEY ADVANTAGE

High transmittance in VIS and extended IR range

Low refractive index

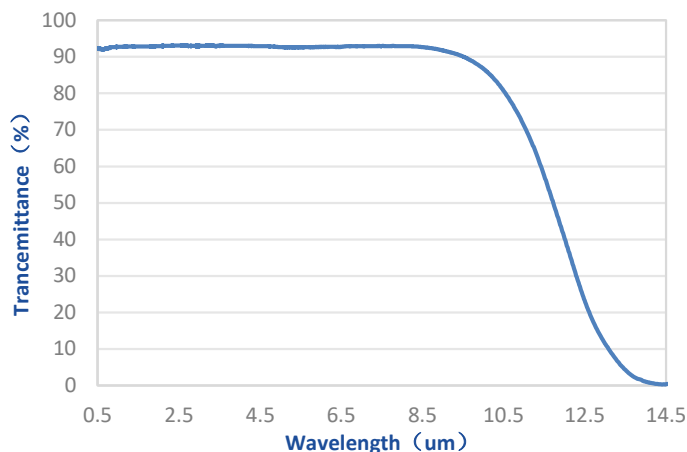
Low spectral dispersion

Scintillator crystal

DESIOPTOE Barium Transmission

Uncoated sample, uncorrected for surface effects

Test sample diameter 15mm, thickness 10mm



Physical Properties

Crystal Structure	Cubic
Cleavage Plane	(111)
Lattice Constant	0.6196
Molecular Weight	175.3 g/mol
Density	4.89 g/cm ³
Melting Point	1386 °C
Solubility	0.016 g/l H ₂ O at 20 °C

Thermal Properties

Heat Capacity	0.410 J/g . K
Thermal Conductivity	11.72 W/g . K
Linear Thermal Expansion Coefficient	18.1 10 ⁻⁶ /°C at -100~200°C

Mechanical Properties

Bulk Modulus	(GPa)	56.4
Shear Modulus	(GPa)	25.4
Young's Modulus	(GPa)	53.07
Poisson Ratio	μ	0.343
Knoop Hardness		82
Mohs Hardness		3.5

Optical fabrication capacity

DESIOPTOE can provide various types of optical fabrication, such as grinding, polishing, and coating. DESIOPTOE not only provides BaF₂ crystal ingots and blanks but also customized optical components.



Refractive Indices @ 19 °C

λ[nm]	n	λ[nm]	n
265.2	1.51217	1014	1.46847
280.4	1.50668	1128.7	1.46779
289.4	1.5039	1367.3	1.46673
296.7	1.50186	1529.5	1.46613
302.2	1.50044	1681	1.46561
313	1.49782	1701.2	1.46554
325.5	1.49521	1970.1	1.46472
334.1	1.49363	2152.6	1.4641
340.4	1.49257	2325.4	1.46356
346.6	1.49158	2576.6	1.46262
361.1	1.48939	2673.8	1.46234
366.3	1.48869	3243.4	1.46018
404.7	1.48438	3422	1.4594
435.8	1.48173	5138	1.45012
486.1	1.47855	5343	1.44878
546.1	1.47586	5549	1.44732
589.3	1.47443	6238	1.44216
643.8	1.47302	6633.1	1.43899
656.3	1.47274	6855.9	1.43694
706.5	1.47177	7044.2	1.43529
852.1	1.46984	7268	1.43314
894.4	1.46942	9724	1.40514
		10346	1.39636

Bubbles/Inclusions	ISO 10110 – 1 x 0.02
Scratch/Dig Limit	10-5
Micro-roughness Limit	≤ 0.5 nm
Available blanks diameters	up to 200mm
Wavefront errors Limit	λ/10
Orientation	(111) (001) (100) orientation are offered
Finish	TSK/rope cut, fine grinded, polished, coated
Components	window, wedge, prism, plano-convex, plan- concave, biconvex, biconcave, convex-concave
Coatings	Anti-reflective, highly reflective