

Title: Optical Material / Crystals (Infrared)

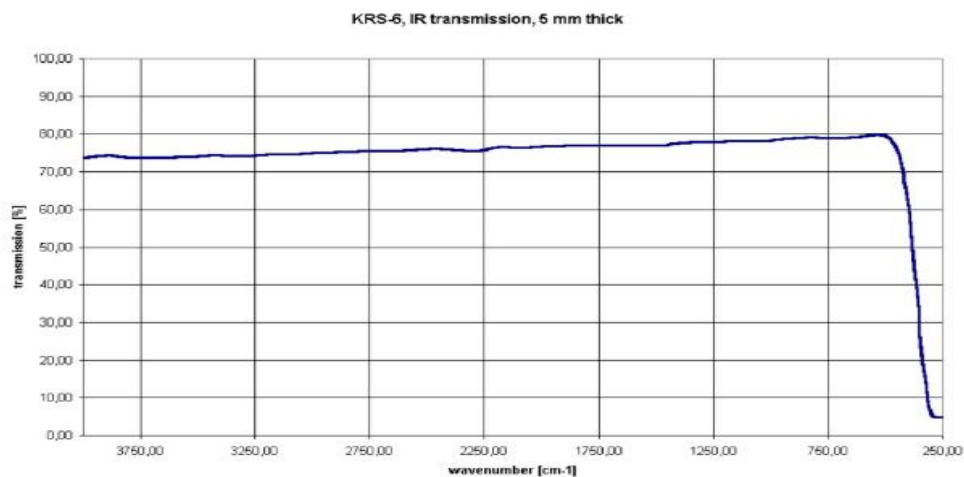
Material / Specification: KRS-6 for 0.4 to 30 micron Transmission

Range / Description: OPM-KRS6

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KRS6 Thallium Bromo-Iodide (TlBr-Cl) is used in research.

Internal Transmittance



Refractive Index n vs. Wavelength λ																
μm	0.60	0.80	1.00	1.50	2.00	4.00	6.00	8.00	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0
no	2.32	2.26	2.24	2.21	2.20	2.19	2.19	2.18	2.17	2.16	2.15	2.14	2.13	2.11	2.09	2.07

Optical Properties	
Transmission Range	0.4 to 30 micron
Refractive Index	2.1723 at 11 micron
Refractive Loss	24.0% at 11 micron
Crystal/Class Structure	Cubic, CsCl structure, Pm3m,
Cleavage Plane	No cleavage planes

Thermal Properties	
Thermal Expansion	$50 \times 10^{-6} / ^\circ\text{C}$
Thermal Conductivity	$0.7 \text{ W m}^{-1} \text{ K}^{-1}$ at 329K
Melting Point	423 °C
Specific Heat Capacity	$188 \text{ J Kg}^{-1} \text{ K}^{-1}$

Mechanical Properties	
Density	7.18 g/cc
Hardness (Knoop)	29.9 with 500g indenter
Youngs Modulus	20.68 GPa
Shear Modulus	8.48 GPa
Bulk Modulus	22.81 GPa
Poisson Ratio	0.219
Elastic Limit	20.7 MPa (3000 psi)
Molecular Weight	40 mole% TlBr; 60 mole% TlCl

Chemical Properties	
Solubility	0.3g/100g water at 20°C