Potassium Bromide (KBr)

Potassium Bromide is produced in large ingots by the Kyropoulos growth method. Potassium Bromide cleaves easily. With care Potassium Bromide can be polished to a high standard under humidity controlled conditions. Polymer coating can be applied.

APPLICATIONS: Potassium Bromide is one of the most useful materials for general purpose spectroscopic windows and applications where sensitivity to moisture is unimportant. Potassium Bromide is the most commonly used beamsplitter material for IR spectrophotometers. It can be supplied with a conformal polymer coating to give some protection against atmospheric humidity.

Transmission Range	0.23 to 25µm
Refractive Index	1.527 at 10µm (1)
Reflection Loss	8.3% at 10µm
Absorption Coefficient	3×10^{-6} @ 1064nm : 14×10^{-6} cm^{-1} @ 10.6 (7)
Reststrahlen Peak	77.6µm
dn/dT	-40.83×10^{-6} K^{-1} (1)
$dn/d\mu = 0$	4.2µm
Density	2.753 g/cc (2)
Melting Point	730°C
Thermal Conductivity	4.816 W m^{-1} K^{-1} @ 319K (3)
Thermal Expansion	43×10^{-6} K^{-1} @300K (4)
Hardness	Knoop 7 in <100> with 200g indenter (4)
Specific Heat Capacity	435 J Kg^{-1} K^{-1}
Dielectric Constant	4.9 @ 1MHz (6)
Youngs Modulus (E)	26.8 GPa (4)
Shear Modulus (G)	5.08 GPa (4)
Bulk Modulus (K)	15.03 GPa (4)
Elastic Coefficients	C_{11}=34.5 C_{12}=5.4 C_{44}=5.08 (5)
Rupture Modulus	3.3 MPa (475psi) (4)
Poisson Ratio	0.203
Solubility	53.48g/100g water at 273K
Molecular Weight	119.01
Class/Structure	Cubic FCC, NaCl, Fm3m, (100) cleavage

(1) Stephens et. al.; J.Opt. Soc. Am. V43, p111, 1953
(2) Kohler; Z. Physik. Volk 78, p375. 1932
(3) Ballard, McCarthy & Davis; Rev. Sci. Insts, V21, p905, 1970
(4) Combes, et.al.; J.Opt. Soc. Am. V41, p215, 1951.
(5) Huntingdon; Phys.Rev. V72, p321, 1947
(6) Hipple; Dielectric Materials & Applications. Wiley
(7) H.H.Li, Absorption Coefficients, Int.J.Therm, V1, No. I, 1980

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µm	No	µm	No	µm	No
0.405	1.5898	0.436	1.5815	0.486	1.5718
0.508	1.5684	0.546	1.5639	0.587	1.5600
0.643	1.5559	0.707	1.5524	1.014	1.5441
2.440	1.5373	3.419	1.5361	4.258	1.5352
6.238	1.5329	8.662	1.5290	9.724	1.5270
11.04	1.5240	14.29	1.5150	17.40	1.5039
19.91	1.4929	23.86	1.4714	25.14	1.4632
28.00	1.4423	30.00	1.4253