

CAUTION: Thallium salts are considered TOXIC and should be handled with care.

Thallium Bromide crystals are grown by sealed-ampoule Stockbarger technique. Thallium salts are toxic, and Thallium Bromide has enough solubility to require extreme caution. Careful handling with plastic gloves covered with soft cotton gloves as appropriate to delicate optics is required.

APPLICATIONS: Thallium Bromide has little practical application.

Transmission Range	0.5 to 40 μ m
Refractive Index	2.338 at 10 μ m (1)
Reflection Loss	27.7% at 10 μ m
Absorption Coefficient	n/a
Reststrahlen Peak	172 μ m
dn/dT	n/a
dn/d μ = 0	8.5 μ m
Density	7.453 g/cc (1)
Melting Point	460.5 °C (1)
Thermal Conductivity	0.586 W m ⁻¹ K ⁻¹ at 343K
Thermal Expansion	51 x 10 ⁻⁶ K ⁻¹ at 300K
Hardness	Knoop 11.9 with 500g indenter
Specific Heat Capacity	188 J Kg ⁻¹ K ⁻¹ (3)
Dielectric Constant	30.3 at 1 MHz
Youngs Modulus (E)	29.5 GPa (2)
Shear Modulus (G)	7.58 GPa (2)
Bulk Modulus (K)	22.47 Gpa (2)
Elastic Coefficients	C ₁₁ =37.8; C ₁₂ =14.8; C ₄₄ =7.56 (2)
Apparent Elastic Limit	20.7 MPa (3000 psi)
Poisson Ratio	0.281
Solubility	0.05g/100g water ar 25°C
Molecular Weight	248.31
Class/Structure	Cubic CsCl, Pm3m, no cleavage (1)

(1) Handbook of Optical Constants, ed Palik, V3, ISBN 0-12-544423-0
 (2) Arenberg, Measurements made at Naval Research Labs, USA 1948-49
 (3) Kelly, Bureau of Mines Bulletin, No 371, p51. 1934



Thallium Bromide (TlBr)

MATERIALS DATA

μm	No	μm	No	μm	No
0.438	2.652	0.546	2.452	0.578	2.424
0.650	2.384	0.750	2.350	10.00	2.338

