Thallium Bromide (TlBr)

Specialist Data Sheet

Product Name	Thallium Bromide (TlBr)
Transmission Range	0.5 ~ 40 µm
Refractive Index	2.388 @ 10 µm
Reflection Loss	n/a
Absorption Coefficient	n/a
Reststrahlen Peak	172 µm
dN/dT	n/a
dN/du	8.5 µm
Density	7.453 g/cc
Melting Point	460 ℃
Thermal Conductivity	0.586 W m^{-1} K^{-1} @ 343K
Thermal Expansion	51 x 10^{-6} /K @ 300K
Hardness	Knoop 11.9 with 500g indenter
Specific Heat Capacity	188 J Kg^{-1} K^{-1}
Dialectric Constant	303 @ 1 MHz
Youngs Modulus (E)	29.5 GPa
Shear Modulus (G)	7.58 Gpa
Bulk Modulus (K)	22.47 GPa
Elastic Coefficients	C11=37.8; C12=14.8; C44=7.56
Apparent Elastic Limit	20.7 Mpa (3000 psi)
Poisson Ratio	0.281
Solubility	0.05g/100g water @ 25℃
Molecular Weight	248.31
Class/Structure	Cubic CsCl, Pm3m, no cleavage

Notes:

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.

Application:

Thallium Bromide has little practical application.

원우시스템즈 WONWOO SYSTEMS
Tel (02) 3289-1290 Fax (02) 3289-1293
서울시 동작구 신대방1가길 38 (신대방 719 동작상떼빌) 106동 209호
www.wonwoosystem.co.kr

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Refractive Index:

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

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