

Caesium Bromide (CsBr)

Specialist Data Sheet

Product Name	Caesium Bromide (CsBr)
Transmission Range	0.25 ~ 40 μm
Refractive Index	1.6612 @ 11 μm
Reflection Loss	11.6% @ 11 μm (2 surfaces)
Absorption Coefficient	n/a
Reststrahlen Peak	121.2 μm
dN/dT	+79 x 10 ⁻⁶ /°C @ 0.6 μm
dN/du	5.3 μm
Density	4.44 g/cc
Melting Point	636 °C
Thermal Conductivity	0.94 W m ⁻¹ K ⁻¹ @ 273 K
Thermal Expansion	47.9x 10 ⁻⁶ /°C @ 273 K
Hardness	Knoop 19.5 with 200g indenter
Specific Heat Capacity	263.8 J Kg ⁻¹ K ⁻¹
Dielectric Constant	6.51 @ 2Mhz
Youngs Modulus (E)	15.85 Gpa
Shear Modulus (G)	7.5 Gpa
Bulk Modulus (K)	13.01 Gpa
Elastic Coefficients	C11=30.97; C12=4.03; C44=7.5
Apparent Elastic Limit	8.4 Mpa (1220psi)
Poisson Ratio	0.279
Solubility	124.3g/100g water @ 273K
Molecular Weight	212.83
Class/Structure	Cubic CsCl, Pm3m, no cleavage planes

Notes:

CsBr is grown by sealed ampoule Stockbarger technique. It is a soft pliable material.

Application:

Caesium Bromide has limited application in the deep IR. It is slightly more amenable to optical working than CsI and is sometimes used as a beamsplitter component in wide-band spectrophotometers

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μm	No	μm	No	μm	No	μm	No
0.5	1.70896	11.0	1.6612	22.0	1.63798	34.0	1.59078
1.0	1.67793	12.0	1.65976	23.0	1.635	35.0	1.58558
2.0	1.67061	13.0	1.6582	25.0	1.62856	36.0	1.58016
3.0	1.66901	14.0	1.6561	26.0	1.62509	37.0	1.5745
4.0	1.66813	15.0	1.65468	27.0	1.62146	38.0	1.5686
5.0	1.66737	16.0	1.65272	28.0	1.61764	39.0	1.56245
6.0	1.66659	17.0	1.65062	29.0	1.61365		
7.0	1.66573	18.0	1.64838	30.0	1.60947		
8.0	1.66477	19.0	1.646	31.0	1.6051		
9.0	1.6637	20.0	1.64348	32.0	1.666053		
10.0	1.66251	21.0	1.6408	33.0	1.59576		

Transmission Range Graph:

