Strontium Fluoride (SrF2)

Specialist Data Sheet

Product Name	Strontium Fluoride (SrF2)
Transmission Range	0.15 ~ 11 µm
Refractive Index	1.439 @ 0.55 µm
Reflection Loss	6.3% @ 0.55 µm (2 surfaces)
Absorption Coefficient	$< 1 \times 10^{-3}$ cm^{-1} @ 5 µm
Reststrahlen Peak	46 µm
dN/dT	-12×10^{-6} /℃
dN/du	n/a
Density	4.24 g/cc
Melting Point	1450 ℃
Thermal Conductivity	1.42 W m^{-1} K^{-1} @ 298K
Thermal Expansion	18.4×10^{-6} /K @ 293K
Hardness	Knoop 154 (100) & 140 (110)
Specific Heat Capacity	543 J Kg^{-1} K^{-1}
Dialectric Constant	7.69 @ 2 MHz
Youngs Modulus (E)	89.91 GPa
Shear Modulus (G)	34.6 Gpa
Bulk Modulus (K)	24.65 GPa
Elastic Coefficients	C11=124; C12=45; C44=31.7
Apparent Elastic Limit	36.5 Mpa (5300 psi)
Poisson Ratio	0.25
Solubility	0.012g/100g water @ 27℃
Molecular Weight	125.62
Class/Structure	Cubic FCC, CaF2, Fm3m, (111) cleavage

Notes:

Strontium fluoride is produced by vacuum Stockbarger growth.

Application:

Strontium Fluoride has only specialist application. Optically, the material has properties intermediate to calcium and barium fluoride.

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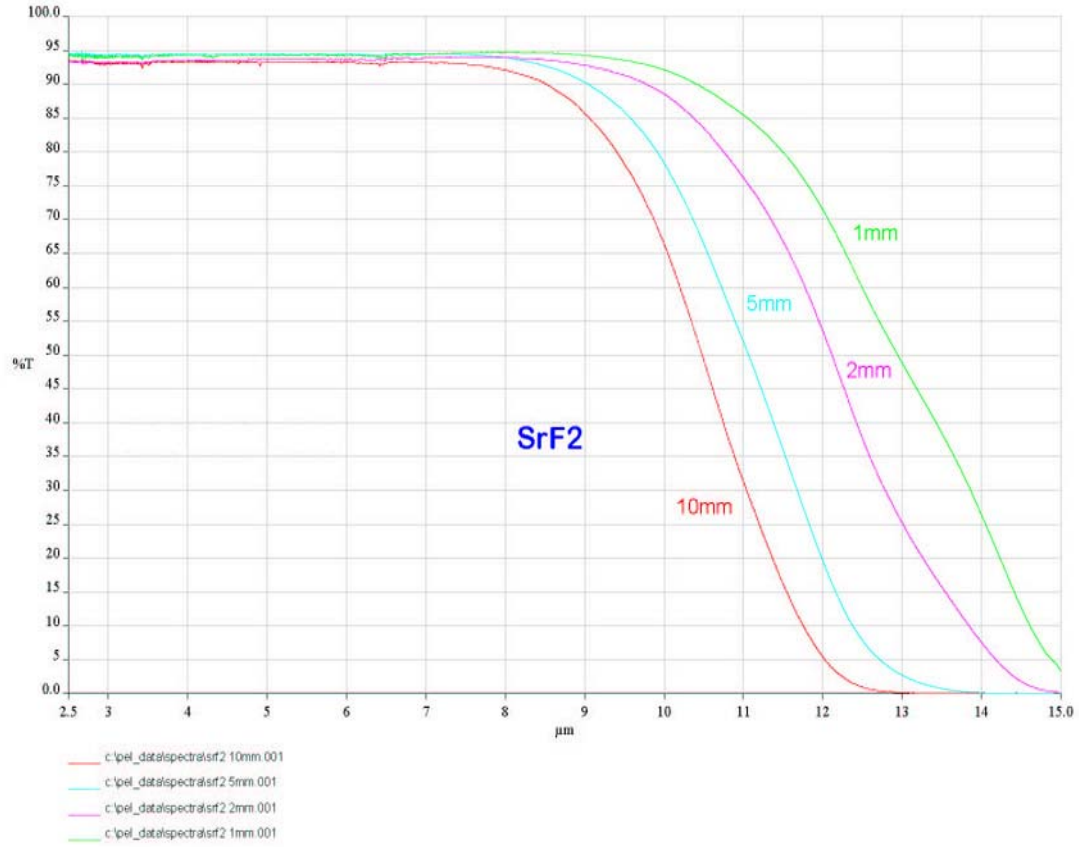
Refractive Index:

µm	No	µm	No	µm	No	µm	No
0.15	1.594	0.81	1.43435	4.01	1.41337	10.1	1.3800
0.20	1.504	0.91	1.43343	5.01	1.40269	11.1	1.2686
0.31	1.45725	1.01	1.43269	6.01	1.38934	12.35	1.3002
0.41	1.44556	1.51	1.43003	7.01	1.37308		
0.51	1.44029	2.01	1.42761	8.01	1.35362		
0.61	1.43740	3.01	1.42159	9.1	1.3283		

Transmission Range Graph:



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