AMTIR-2

Composition	Arsenic Selenide Glass As – Se
Glass Transition Temperature	Tg °C 167 (AMI)
Expansion Coefficient	D L / L = 22.4 x 10^{-6} /°C
Softening Point	188 ° C
Thermal Conductivity	5.3 x10^{-4} cal gm / °C sec
Specific Heat	0.068
Knoop Hardness	110
Young's Modulus E	5.6 x 10^{6} lbs / in^2
Shear Modulus G	1.03 x 10^{6} lbs / in^2
Poisson's Ratio	0.29
Rupture Modulus	~ 2500 lbs / in^2
Tensile Strength	1440 lbs / in^2
Compressive Strength	8,800 lbs / in^2
Density	4.66 gm/cm^3
Chemical Durability	
Chemical	Weight Loss (4hrs, gms / in^2)
60°C-0.01	H_2O 25°C - 0, H_2O 90°C - 0, NH_4OH 2%,
60°C- O	KOH, 2%, 60°C- .032, HCL,HNO_3, H_2SO_4
Dielectric Constant	9.1

Resistivity 15×10^9 ohm-cm

IR REFRACTIVE INDEX OF AMTIR 2

(2008 Sellmeier Fit by Bill Thompson)

$$N = [\, 1 + l^2[\, A_o^2/\,(\, l^2 - A_1^{\,2}\,) + A_2^2/\,(\, l^2 - 19^2) + A_3^2/(\, l^2 - 4xA_1^2)\,]]^{0.5}$$

A_0 =2.234921 A_1 = 0.24164 A_2 = 0.347441 A_3 = 1.308575 WL l

AMI Abs.Coef.

m m	Results	cm^{-1}		
1.0	2.9221	0.056		
1.064	2.9023	0.040		
1.25	2.8638	0.023		
1.5	2.8351	0.016		
1.75	2.8186	0.015		
2.0	2.8082	0.015		
3.0	2.7897	0.01		
4.0		2.7830	0.01	V 3 - 5 mm = 176
5.0		2.7796	0.02	
6.0		2.7773	0.01	
7.0		2.7753	0.01	
8.0		2.7735	0.01	
9.0		2.7714	0.01	

10.0		2.7691	0.01	V 8 – 12 mm = 162
11.0		2.7662	0.016	
12.0	2.7626	0.031		
13.0	2.7577	0.22		

D N / D T @ 1.5 mm = + 117 x 10^{-6} / ° C

D N / D T @ 4 mm = + 31 x 10^{-6} / ° C

D N / D T @ 10 mm = + 30.7 x 10^{-6} / ° C