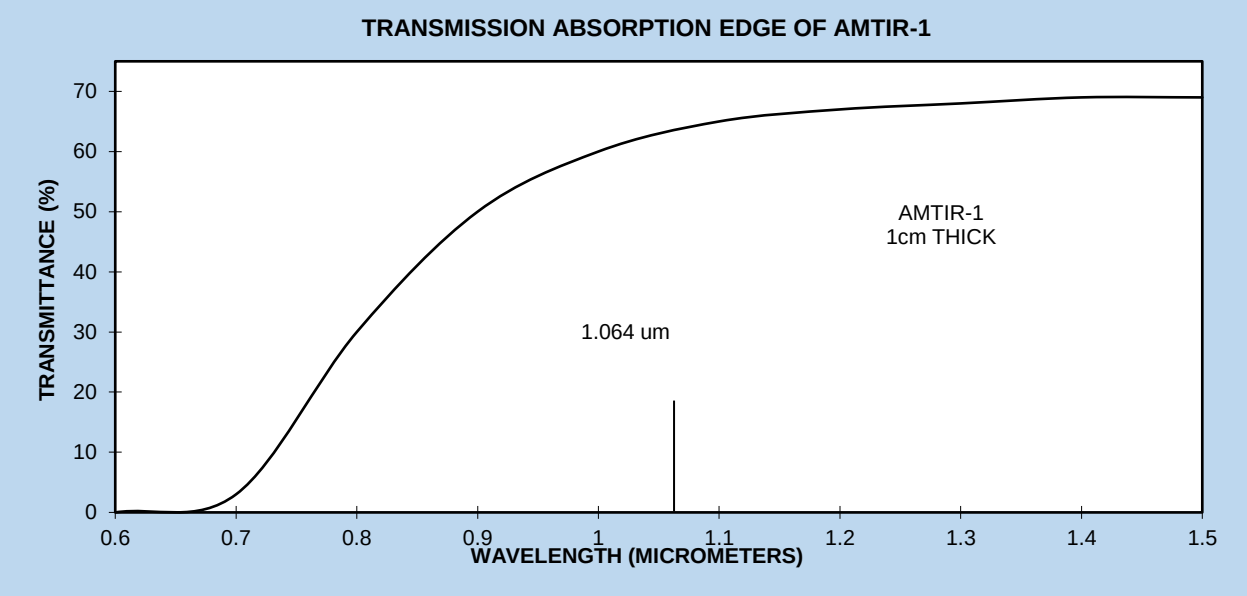
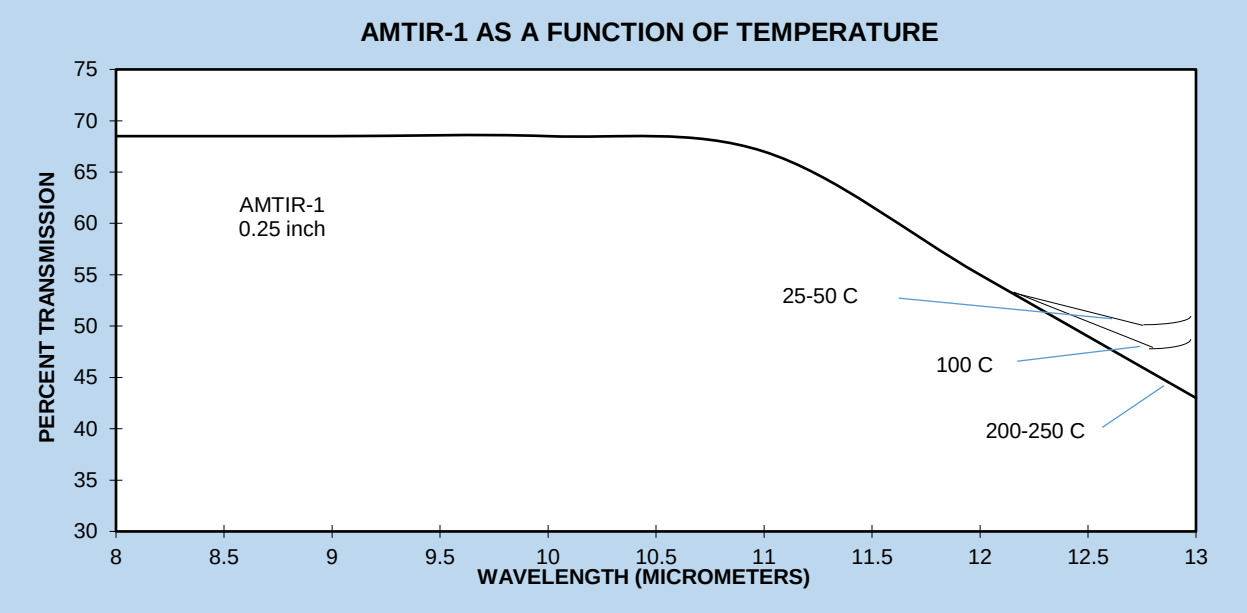
AMORPHOUS MATERIALS, INC.
MANUFACTURER OF IR MATERIALS

AMTIR®

AMTIR-1 Data Sheet

Composition	AsSeGe
Glass Transition Temperature	Tg 368˚C
Expansion Coefficient	$\Delta L / L = 12 \times 10^{-6}$ /˚C
Softening Point	405˚C
Thermal Conductivity	6×10^{-4} cal /cm-sec- ˚K
Knoop Hardness	170
Young's Modulus E	3.2×10^{6} lbs / in²
Shear Modulus G	1.3×10^{6} lbs/in²
Poisson's Ratio	0.27
Tensile Strength	1100lbs / in²
Compressive Strength	21000lbs / in²
Rupture Modulus	2700 lbs / in²
Density	4.4 gm / cm³
Dielectric Constant	
Resistivity	2×10^{12} ohm-cm @ 100Hz
Dispersion Values 3-5µm	202
Dispersion Values 8-12µm	109


TRANSMISSION ABSORPTION EDGE OF AMTIR-1
TRANSMITTANCE (%)
70
60
50
40
30
20
10
0
0.6
0.7
0.8
0.9
1
1.1
1.2
1.3
1.4
1.5
WAVELENGTH (MICROMETERS)
AMTIR-1
1cm THICK
1.064 um


AMTIR-1 AS A FUNCTION OF TEMPERATURE
PERCENT TRANSMISSION
75
70
65
60
55
50
45
40
35
30
8
8.5
9
9.5
10
10.5
11
11.5
12
12.5
13
WAVELENGTH (MICROMETERS)
AMTIR-1
0.25 inch
25-50 C
100 C
200-250 C

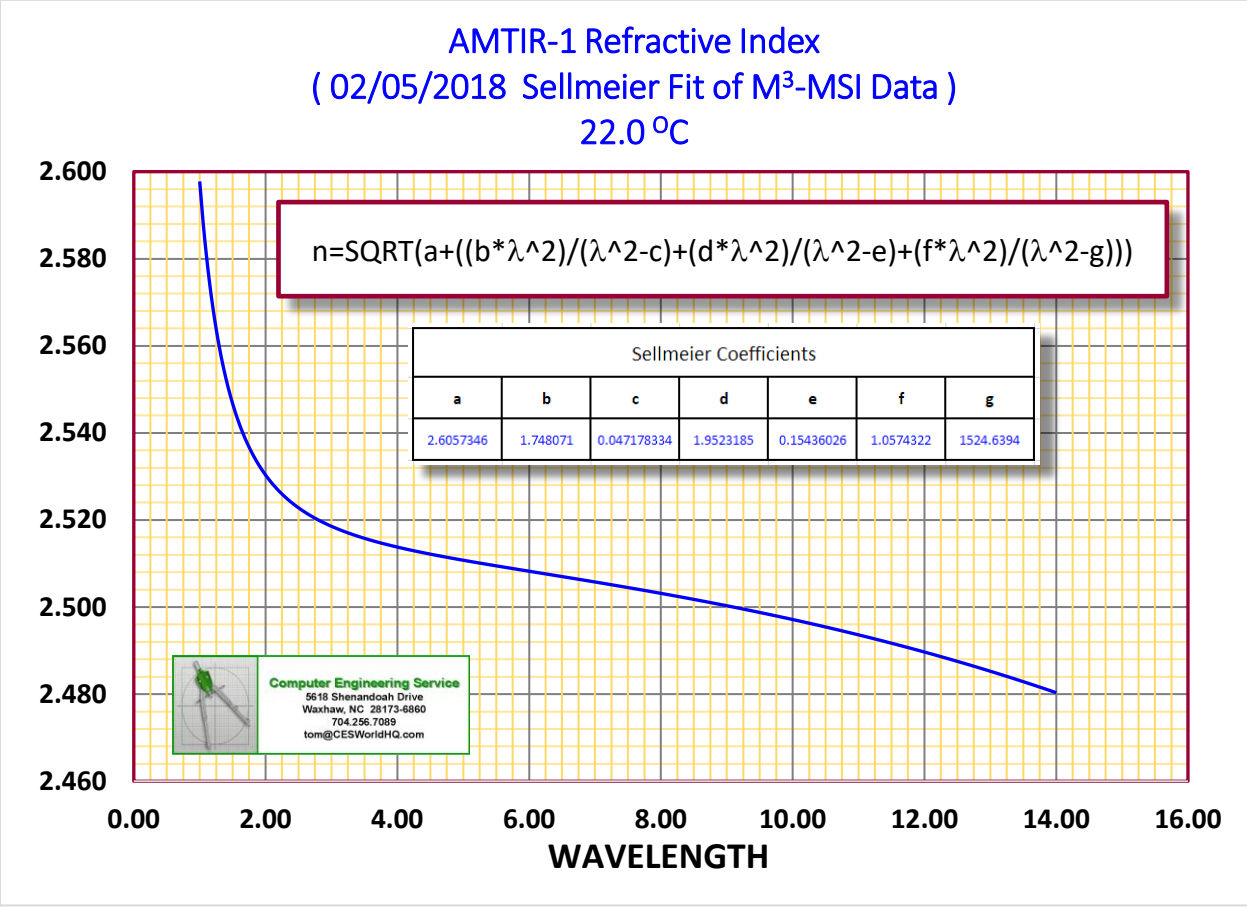
AMI Refractive Index Values for AMTIR-1

Wavelength (nm)	Refractive Index 22 Deg C	Absorption cm^{-1}	Dn/dT
1000	2.59776	0.064	1.1E-04
1064	2.58642	0.044	
1500	2.54672	0.01	
2000	2.53033	0.01	8.0E-05
3000	2.51856	0.01	7.6E-05
4000	2.51378	0.01	7.4E-05
5000	2.51076	0.02	7.4E-05
6000	2.50824	0.01	
7000	2.50577	0.01	
8000	2.50316	0.01	7.2E-05
9000	2.50031	0.01	
10000	2.49715	0.01	7.1E-05
11000	2.49362	0.03	
12000	2.49968	0.15	7.1E-05
13000	2.48527	0.15	

Data presented in RED text should not be given significant weight, as this wavelength region is within the absorption edge of the glass.

AMTIR-1 dn/dT (linear fit from 25 Deg C to 65 Deg C)
10000 nm 72E-06

Chemical Durability (weight loss in gms in 4 hrs)
H_2O, 25˚C - 0.0 H_2O,90°C – 0.0 NH_4OH 2%, 60°C – 0.01
KOH, 2%, 60˚C – 0.032 HCL,HNO_3,H_2SO_4,EtOH, 60˚C – 0.0



Amorphous Materials Inc
3130 Benton, Garland, TX 75042
972-494-5624