

COMPARISON OF IR TRANSMITTING GLASSES PRODUCED BY AMI

Property	AMTIR-1	AMTIR-2	AMTIR-4	AMTIR-5	AMTIR-6	C1
Composition	Ge-As-Se	As-Se	As-Se	As-Se	As-S	As-Se-Te
Transmission Range μm	0.7-12	1.0-14	1.0-12	1.0-12	0.6-8	1.2-14
Ref Index @ 10 μm	2.4981	2.7613	2.6431	2.7398	2.3807	2.8051
N/ T°C x 10 ⁻⁶ @ 10 μm	72	5	-23	<1 (5 μm)	<1	31
Knoop Hardness	170	110	84	87	109	110
Therm Exp x 10 ⁻⁶ / °C	12	22.4	27	23.7	21.6	23
Thermal Condx (cal/gm sec°C) 10 ⁻⁴	6	5.3	5.3	5.7	4	5.2
Specific Heat (cal/gm °C)	0.072	0.068	0.086	0.076	0.109	0.062
Density gm/cm ³	4.4	4.66	4.49	4.51	3.2	4.69
Rupture Mod (psi)	2700	2500	2358	2400	2400	2500
Young's Mod (x10 ⁶ psi)	3.2	5.6	2.2	2.56	2.3	1.8
Shear Mod (x10 ⁶ psi)	1.3	1.03	0.85	1.01	0.94	1.03
Poisson's Ratio	0.27	0.29	0.297	0.279	0.24	0.29
Softening Point °C	405	188	131	170	210	154
Glass Trans Temp (Tg °C)	368	167	103	143	187	133
Upper Use Temp °C	300	150	90	130	150	120
Dispersion Values						
3 - 5 μm	202	171	186	175	155	148
8 - 12 μm	109	149	235	172		196