

NBU-IR1

$\text{Ge}_{20}\text{Sb}_{15}\text{Se}_{65}$ (mol%)

Physical Data and Typical Characteristics

Mechanical

Density	g/cm ³	4.72
Young's modulus	GPa	19.11
Rupture Modulus	GPa	7.52
Poisson's ratio		0.27

Thermal

Coefficient of Thermal Expansion	10 ⁻⁶ K ⁻¹ @ 20°C-100°C	14.1
	10 ⁻⁶ K ⁻¹ @ 20°C-200°C	15.5
Specific Heat	J/gK	0.34
Thermal Conductivity	W/mK	0.23
Transition Temperature	°C	285

Optical

Wavelength (μm)	Index Of Refraction	Transmission (293K) %
2	2.6261	65.4
3	2.6116	65.6
4	2.6058	66.2
5	2.6022	66.9
6	2.5991	67.4
7	2.5962	67.8
8	2.5929	67.7
9	2.5895	66.2
10	2.5858	67.6
11	2.5816	67.4
12	2.5769	67.8

Temperature coefficient of refractive index dn/dt @ 25°C $5.8 \times 10^{-5} \text{K}^{-1}$ (10.6μm)

Formats

Ingots
Disks

Sizes

Diameters up to 110 mm
Length of ingot up to 100 mm

If specific requirements such as composition, diameter and length are needed, please contact us

Contact information

Link man Dr. Shixun Dai
Tel +86-574-87600947
Fax +86-574-87600946
E-mail ir-glass@nbu.edu.cn
website <http://www.ir-glass.com>
Address Laboratory of Infrared Materials and Devices,
 Ningbo University, Zip code: 315211
 No.818 Fenghua Road, Jiangbei District, Ningbo City, China

NBU-IR2

$\text{Ge}_{28}\text{Sb}_{12}\text{Se}_{60}$ (mol%)

Physical Data and Typical Characteristics

Mechanical

Density	g/cm ³	4.67
Young's modulus	GPa	29.60
Rupture Modulus	MPa	18
Poisson's ratio		0.26

Thermal

Coefficient of Thermal Expansion	10 ⁻⁶ K ⁻¹ @ 20°C-100°C	13.7
	10 ⁻⁶ K ⁻¹ @ 20°C-200°C	15.0
Specific Heat	J/gK	0.35
Thermal Conductivity	W/mK	0.26
Transition Temperature.	°C	300

Optical

Wavelength (μm)	Index Of Refraction	Transmission (293K) %
3	2.6273	66.9
4	2.6224	66.7
5	2.6183	66.4
6	2.6157	66.5
7	2.6130	66.1
8	2.6099	66.8
9	2.6064	66.7
10	2.6026	66.9
11	2.5985	66.5
12	2.5948	51.3

Temperature coefficient of refractive index dn/dt @ 25°C $87 \times 10^{-6} \text{k}^{-1}$ (10.6μm)

Formats

Ingots
Disks

Sizes

Diameters up to 50 mm
Length of ingot up to 100 mm

If specific requirements such as composition, diameter and length are needed, please contact us

Contact information

Link man Dr. Shixun Dai
Tel +86-574-87600947
Fax +86-574-87600946
E-mail ir-glass@nbu.edu.cn
website <http://www.ir-glass.com>
Address Laboratory of Infrared Materials and Devices,
 Ningbo University, Zip code: 315211
 No.818 Fenghua Road, Jiangbei District, Ningbo City, China

NBU-IR3

Physical Data and Typical Characteristics

Mechanical

Density	g/cm ³	4.72
Young's modulus	GPa	21.75
Rupture Modulus	MPa	8.40
Poisson's ratio		0.29

Thermal

Coefficient of Thermal Expansion	10 ⁻⁶ K ⁻¹ @ 20°C-100°C	18.1
	10 ⁻⁶ K ⁻¹ @ 20°C-200°C	23.3
Specific Heat	J/gK	0.320
Thermal Conductivity	W/mK	0.232
Transition Temperature.	°C	187.2

Optical

Wavelength (μm)	Index Of Refraction	Transmission (293K) %
2	2.4325	54.63
3	2.4217	58.33
4	2.4175	59.83
5	2.4148	60.93
6	2.4127	61.13
7	2.4110	60.93
8	2.4092	61.13
9	2.4069	60.93
10	2.4046	59.83
11	2.4017	60.63
12	2.3979	58.83

Formats

Ingots
Disks

Sizes

Diameters up to 50 mm
Length of ingot up to 100 mm

If specific requirements such as composition, diameter and length are needed, please contact us

Contact information

Link man Dr. Shixun Dai
Tel +86-574-87600947
Fax +86-574-87600946
E-mail ir-glass@nbu.edu.cn
website <http://www.ir-glass.com>
Address Laboratory of Infrared Materials and Devices,
 Ningbo University, Zip code: 315211
 No.818 Fenghua Road, Jiangbei District, Ningbo City, China

NBU-IR4

Physical Data and Typical Characteristics

Mechanical

Density	g/cm ³	4.70
Young's modulus	GPa	35.4
Rupture Modulus	MPa	13.8
Poisson's ratio		0.28

Thermal

Coefficient of Thermal Expansion	10 ⁻⁶ K ⁻¹ @ 20°C-100°C	11.0
	10 ⁻⁶ K ⁻¹ @ 20°C-200°C	13.4
Specific Heat	J/gK	0.348
Thermal Conductivity	W/mK	0.324
Transition Temperature.	°C	262.7

Optical

Wavelength (μm)	Index Of Refraction	Transmission (293K) %
2	2.4323	70.5
3	2.4215	67.8
4	2.4173	69.7
5	2.4146	68.8
6	2.4125	70.2
7	2.4108	70.3
8	2.4087	70.2
9	2.4067	70.3
10	2.4041	70.1
11	2.4014	69.3
12	2.3975	67.3

Formats

Ingots
Disks

Sizes

Diameters up to 50 mm
Length of ingot up to 100 mm

If specific requirements such as composition, diameter and length are needed, please contact us

Contact information

Link man Dr. Shixun Dai
Tel +86-574-87600947
Fax +86-574-87600946
E-mail ir-glass@nbu.edu.cn
website <http://www.ir-glass.com>
Address Laboratory of Infrared Materials and Devices,
 Ningbo University, Zip code: 315211
 No.818 Fenghua Road, Jiangbei District, Ningbo City, China

NBU-IR5 (As₂Se₃)

Physical Data and Typical Characteristics

Mechanical

Density	g/cm ³	4.63±0.01g/cm ³
Young's modulus	GPa	18.3 Gpa
Rupture Modulus	MPa	17 Mpa

Thermal

Thermal change dn/dT	40×10 ⁻⁶ K ⁻¹ (10.6μm)
Expansion	20.6 ×10 ⁻⁶ K ⁻¹
Specific Heat	0.36 J/gK
Thermal Conductivity	0.24 W/mK
Transition Temperature.	182 °C

Optical

Wavelength (μm)	Index Of Refraction	Transmission (293K) %
2	2.8219	
3	2.8034	
4	2.7964	
5	2.7926	
6	2.7898	
7	2.7873	
8	2.7850	
9	2.7823	
10	2.7795	
11	2.7766	
12	2.7737	

Formats

Ingots
Disks

Sizes

Diameters up to 100 mm
Length of ingot up to 80 mm