

Germanium (Ge)

Germanium (Ge) crystal is widely used for infrared applications due to its high index of refraction. Germanium's high density (5.33 g/cm³) should be considered when designing for weight-sensitive systems. The Knoop Hardness of germanium is approximately twice that of magnesium fluoride, making it ideal for infrared applications requiring rugged optics. Typical applications are infrared optics, night vision, laser and x-ray applications. Its high index of refraction (greater than 4) makes it of particular interest for lens design. Germanium absorption increases with temperature. At 200°C it becomes non-transmissive. Germanium components are used with AR coatings because of high surface reflectivity of substrate.

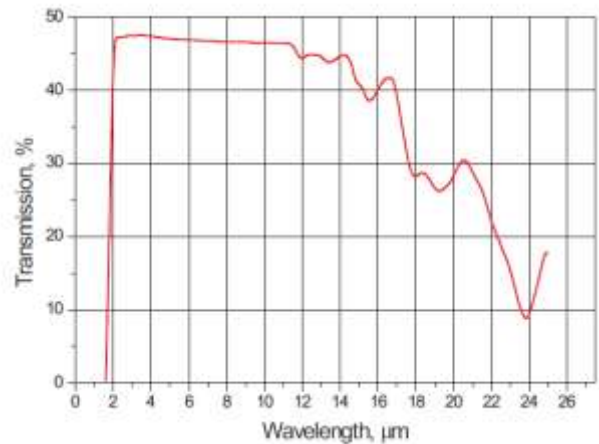


Substance	Form	Typical Diameter Range*	Typical Thickness Range*	Transmission Range (μm)	Typical Transmittance
Germanium (Ge)	Single or Poly Crystal	10 to 100 mm	1 to 30 mm	1.8 to 24.00	46% (2 - 14μm)

*Special orders available

PROPERTIES

Transmission Range	1.8 – 24.0 microns
Density	5.32 g/cm ³
Refractive Index	4.005 @ 8μm
Melting Point	938° C
Thermal Conductivity	59 W/Km @ 300K
Transmittance (2μm - 11μm)	~ 46%
Crystal Structure	Diamond Cubic
Electrical Resistivity	53 ohm-cm @25°C
Knopp Hardness	780
Thermal Shock Resistance	125°C



Hazard Labeling: Not regulated by Department of Transportation (DOT)

Shipping Classification: UPS or FedEx: Ground, Air

Fairfield Crystal Technology will be pleased to quote you price and delivery.

Contact us

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