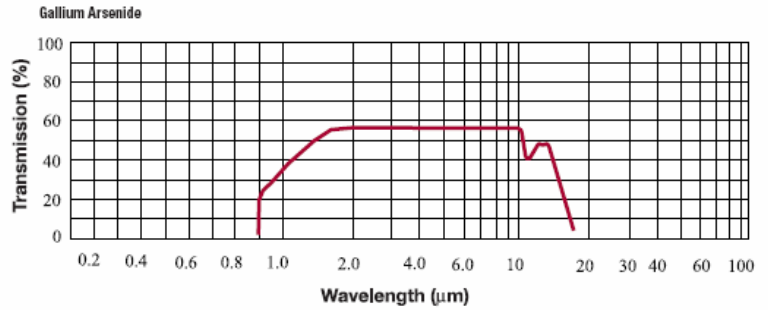


Gallium Arsenide (GaAs)

OVERVIEW

Gallium arsenide (GaAs) is a compound of two elements, gallium and arsenic. It is an important semiconductor and is used to make devices such as microwave frequency integrated circuits, infrared light-emitting diodes, laser diodes and solar cells. Optical grade Gallium Arsenide is an infrared transmitting, semi-insulating material. Gallium Arsenide is nearly as hard, strong and dense as Germanium. It is commonly used in applications where toughness and durability is needed. It has a low absorption coefficient of 0.01cm^{-1} from 2.5 to $12\mu\text{m}$. GaAs optical grade material is generally more expensive than Germanium and ZnSe.



PRODUCTS



Phoenix Infrared offers GaAs in blank form and as windows with laser quality surface finish. Windows are supplied uncoated but an anti-reflection coating may be selected. They may also be used as substrates for beam splitters, beam combiners, polarizers and many other uses by selection of the appropriate coating.

SPECIFICATIONS

GaAs Properties	
Transmission Range (um)	1.0-22
Refractive Index@10um	3.277
Temperature Coefficient of Refractive Index @ 10um	$149 \times 10^{-6}/^{\circ}\text{C}$
Bulk Absorption Coefficient@10um / cm	<0.01
Melting Point, °C	1600
Hardness (Knoop), Kg/mm ²	750
Density, g/cm ³	5.37
Rupture Modulus, Mpa	13.8
Young's Modulus, Gpa	8.3
Fracture Toughness Mpam ^{-1/2}	0.31

Wavelength μm	Refractive Index
2.6	3.3239
3	3.3169
4	3.3069
5	3.301
6	3.2963
7	3.2923
8	3.2878
9	3.283
10	3.277
10.6	3.2743