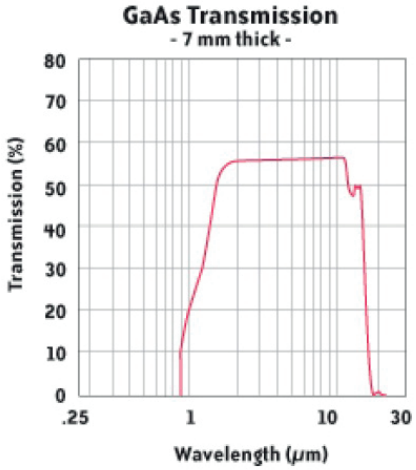
Optical material / crystals (Infrared)

Material / Specification: Gallium Arsenide for 1µm to 16µm transmission
Range / Description: OPMI-GALLIUM ARSENIDE

Gallium Arsenide is used in specialist applications in far IR optics and lens systems. It is best used in applications where durability is important as it's a tough material.

Internal Transmittance



Refractive Index n vs. Wavelength λ									
λ, MKM	8		10		14.5		17		19	
n(λ)	3.34		3.03		2.82		2.59		2.41	

Optical Properties	
Transmission Range	1 to 16 micron
Refractive Index	3.2727 @ 10.33 micron
Refractive Loss	44% @ 10.33 micron
Crystal/Class Structure	Cubic ZnS, F43m
Cleavage Plane	(100) cleavage

Thermal Properties	
Thermal Expansion	5.7 x 10^{-6} /°C at 300K
Thermal Conductivity	48 W m^{-1} K^{-1} @ 273K
Melting Point	1511°C
Specific Heat Capacity	360 J Kg^{-1} K^{-1}

Mechanical Properties	
Density	5.315 g/cc
Hardness (Knoop)	Knoop 750
Youngs Modulus	84.8 GPa
Shear Modulus	n/a
Bulk Modulus	75.5 GPa
Poisson Ratio	0.31
Elastic Limit	71.9 MPa
Molecular Weight	144.64

Chemical Properties	
Solubility	Insoluble in water