

# Gallium Arsenide (GaAs)

## CRYSTALLOGRAPHIC

Syngony	Cubic
Symmetry Class	43m F43m
Lattice Constant, Angstrom	5.653

## OPTICAL

Refractive Index at $n_{8.0}$	3.2884
Transmission Range, microns	1-15
Absorbance $\mu (\lambda)$ , $\text{cm}^{-1}$ at 10.6 microns	0.01

## THERMAL

Thermal Linear Expansion, $\text{deg C}^{-1}$ for 0-30 deg C	$5.39 \times 10^{-6}$
Thermal Conductivity, $\text{W}/(\text{m} \cdot \text{deg C})$ at 25 deg C	46.05
Specific Heat Capacity, $\text{J}/(\text{kg} \cdot \text{deg C})$	350
Melting Point, deg C	1238

## MECHANICAL

Density, $\text{g}/\text{cm}^3$ at 20 deg C	5.316
Mohs Hardness	4.5
Vickers Microhardness, Pa	$6.9 \times 10^9$
Young Modulus (E), Pa	$85 \times 10^9$
Poisson Ratio	0.31

## CHEMICAL

Molecular Weight	144.64
Solubility in water, $\text{gram}/100 \text{ cm}^3$	insoluble

## Refr. Index n vs. Wavelength $\lambda$

WAVELENGTH, MICRONS	REFRACTIVE INDEX
7.0	3.2927
8.0	3.2884
9.0	3.2838
10.0	3.2786
11.0	3.2729
12.0	3.2667

## Transmittance $\tau (\lambda)$ vs. Wavelength $\lambda$

