

ZINC SELENIDE (Sublimate) ZnSe

Crystallographic ZnSe (Zinc Selenide) Sublimate

Syngony	Cubic
Symmetry Class	43m
Lattice Constants, Angstroms	a=5.668 c=a

Optical ZnSe (Zinc Selenide) Sublimate

Refractive Index at n_e	2.6645
Refractive Index at $n_F'-n_C'$	0.1841
Refractive Index at $n_{10.6}$	2.4034
Refractive Index at $n_{8.0}-n_{12.5}$	0.0285
Thermal Coefficient of Refractive Index at $\lambda=3.39$ microns, $^{\circ}\text{C}^{-1}$ for $\pm 60^{\circ}\text{C}$	$(6.0,6.3) \cdot 10^{-5}$
Transmission Range, microns (thickness 10MM)	0.55, 18
Transmittance $t_i(\lambda)$ vs. wavelength λ	ZnSe Sublimate

Internal Transmittance $t_i(\lambda)$ vs. wavelength λ	
λ, MKM	$t_i(\lambda)$
0.2	
0.5	0.65
1.0	0.76
3.0	0.94
5.0	0.97
6.0	0.97
7.0	0.99
8.0	0.99
9.0	0.99
10.0	0.99
12.0	0.98
15.0	0.90
20.0	0.16

Refractive Index n vs. wavelength λ	
λ, MKM	n(λ)
1.0	2.4894
2.0	2.4462
3.0	2.4376
4.0	2.4331
5.0	2.4296
6.0	2.4258
7.0	2.4219
8.0	2.4176
9.0	2.4123
10.0	2.4006
11.0	2.4006
12.0	2.3936
12.5	2.3891
15.0	2.3662

Thermal ZnSe (Zinc Selenide) Sublimate

Thermal Linear Expansion $\alpha_t, ^{\circ}\text{C}^{-1}$ at 27°C	$7.9 \cdot 10^{-6}$
Thermal Conductivity, $\text{W}/(\text{m} \cdot ^{\circ}\text{C})$ at 20°C	14.1
Specific Heat Capacity, $\text{J}/(\text{kg} \cdot ^{\circ}\text{C})$ at 25°C	367.0
Thermal Stability, $^{\circ}\text{C}$	-
Melting Point, $^{\circ}\text{C}$	1520 \pm 15

Mechanical ZnSe (Zinc Selenide) Sublimate

Density, g/cm^3 at 20°C	5.26
Mohs Hardness	4
Vickers Microhardness, Pa	$(101 \pm 3) \cdot 10^7$
Poisson Ratio	0.311
Young Modulus (E), Pa	$7.76 \cdot 10^{10}$
Shear Modulus (G), Pa	$2.96 \cdot 10^{10}$

Chemical ZnSe (Zinc Selenide) Sublimate

Solubility	
in water at 18°C $\text{g}/100\text{cm}^3$ insoluble	in acids soluble