

POTASSIUM CHLORIDE KCl

Crystallographic KCl (Potassium Chloride)

Syngony	Cubic
Symmetry Class	m3m
Lattice Constants, Angstroms	a=6.292 c=a
Cleavability	(100), perfect

Optical KCl (Potassium Chloride)

Refractive Index at n_e	1.4930
Refractive Index at $n_F - n_C$	0.0112
Refractive Index at $n_{10.6}$	1.4546
Refractive Index, $n_{8.0} - n_{12.5}$	0.0172
Thermal Coefficient of Refractive Index at $\lambda=3.39$ microns, $^{\circ}\text{C}^{-1}$ for $\pm 60^{\circ}\text{C}$	$(-3.28 \dots -3.75) \cdot 10^{-5}$
Transmission Range, microns (thickness 10mm)	0.21, 21
Transmittance $t_i(\lambda)$ vs. wavelength λ	KCl Potassium Chloride

Internal Transmittance $t_i(\lambda)$ vs. wavelength λ	
λ, MKM	$t_i(\lambda)$
0.2	0.89
0.5	0.98
1.0	0.98
3.0	0.98
5.0	0.98
6.0	0.98
7.0	0.98
8.0	0.98
9.0	0.98
10.0	0.98
12.0	0.98
15.0	0.95
20.0	0.68

Refractive Index n vs. wavelength λ	
λ, MKM	n(λ)
0.2	1.7170
0.5	1.4968
1.0	1.4796
2.0	1.4751
3.0	1.4735
4.0	1.4720
5.0	1.4703
6.0	1.4683
7.0	1.4659
8.0	1.4632
9.0	1.4601
10.0	1.4566
11.0	1.4527
12.0	1.4463
12.5	1.4460
15.0	1.4325
20.0	1.3947
30.0	1.2626

Thermal KCl (Potassium Chloride)

Thermal Linear Expansion $\alpha_t, ^{\circ}\text{C}^{-1}$ for $\pm 60^{\circ}\text{C}$	$(34.1, 38.3) \cdot 10^{-6}$
Thermal Conductivity, $\text{W}/(\text{m} \cdot ^{\circ}\text{C})$ at 42°C	6.53
Specific Heat Capacity, $\text{J}/(\text{kg} \cdot ^{\circ}\text{C})$ at 23°C	695
Melting Point, $^{\circ}\text{C}$	776

Mechanical KCl (Potassium Chloride)

Density, g/cm^3 at 20°C	1.98	
Mohs Hardness	2	
Vickers Microhardness, Pa	$15 \cdot 10^7$	
Constants of Elastic Compliance, Pa^{-1}	S_{11}	$26.21 \cdot 10^{-12}$
	S_{12}	$-3.47 \cdot 10^{-12}$
	S_{44}	$161.98 \cdot 10^{-12}$
Poisson Ratio	0.134	
Young Modulus (E), Pa	$\langle 100 \rangle$	$3.82 \cdot 10^{10}$
	$\langle 100 \rangle$	$1.68 \cdot 10^{10}$
Shear Modulus (G), Pa	(100)	$1.08 \cdot 10^{10}$
	(100)	$0.63 \cdot 10^{10}$

Chemical KCl (Potassium Chloride)

Solubility KCl	
in water at 20°C $\text{g}/100\text{cm}^3$	in acids
34.7	-