Title: Optical Material / Crystals (Infrared)
Material / Specification: Sodium Chloride for 0.02 to 15 micron Transmission
Range / Description: OPM-Sodium Chloride

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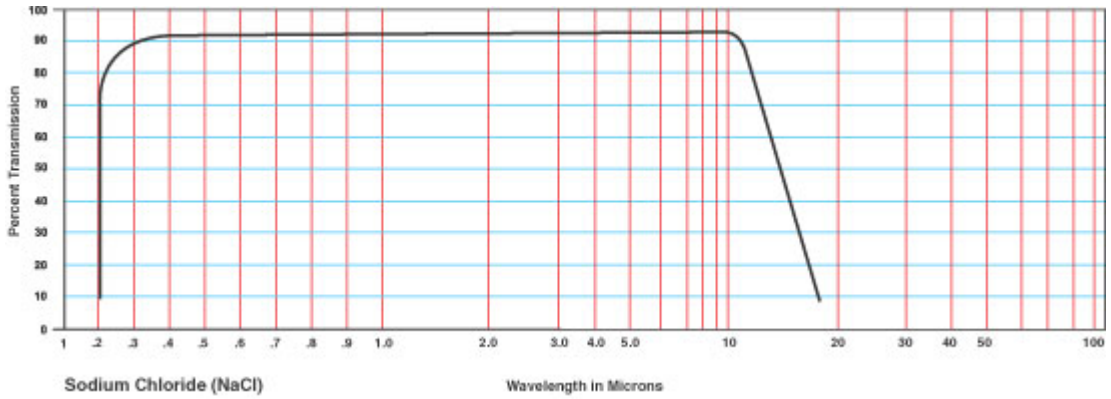
Where sensitivity to moisture is unimportant, Sodium Chloride is one of the most useful materials for general purpose spectroscopic windows and applications.

Internal Transmittance



Internal Transmittance $t_i(\lambda)$ vs. wavelength λ											
λ, мкм	0.2	0.5	1.0	3.0	5.0	9.00	10	12	15	20	—-
$\tau_i(\lambda)$	0.16	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.87	0.05	—-

Refractive Index n vs. Wavelength λ																
λ, мкм	0.2	0.5	1.0	2.0	3.0	5.0	7.0	8.0	9.0	10	11	12	12.5	15	20	30
n(λ)	1.78	1.55	1.53	1.52	1.52	1.52	1.51	1.50	1.50	1.49	1.48	1.48	1.47	1.44	1.38	1.09

Optical Properties	
Transmission Range	0.2 to 15
Refractive Index	1.49065 at 10.6
Refractive Loss	7.5% at 10.6
Crystal/Class Structure	Cubic FCC, NaCl, Fm3m
Cleavage Plane	(100) cleavage

Mechanical Properties	
Density	2.17 g/cc
Hardness (Knoop)	18.2 in <100> with 200g indenter
Youngs Modulus	39.98 GPa
Shear Modulus	12.61 GPa
Bulk Modulus	24.42 GPa
Poisson Ratio	0.252
Elastic Limit	2.4 MPa (350 psi)
Molecular Weight	58.45

Thermal Properties	
Thermal Expansion	36 X 10^{-6} /k at 300k
Thermal Conductivity	44 x10^{-6} /°C
Melting Point	801 °C
Specific Heat Capacity	854 J Kg^{-1} K^{-1}

Chemical Properties	
Solubility	35.7g/100g water at 273K

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Whilst every effort has been made to verify this data, Knight Optical(UK)Ltd can take no responsibility for its accuracy.