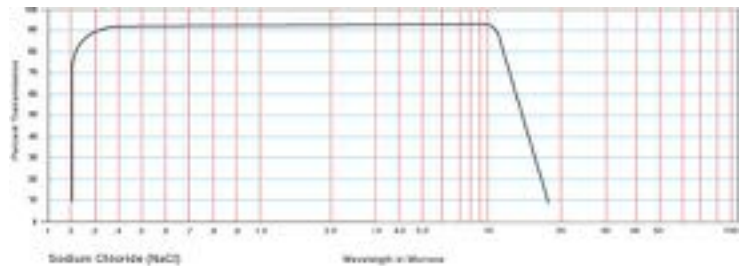
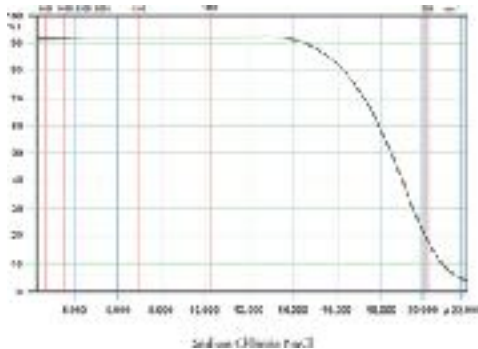


# Optical Materials

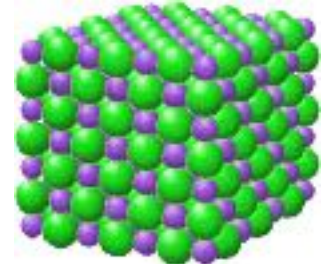
## Sodium Chloride (NaCl) Optical Crystals

Sodium Chloride is the most common infrared transmission crystal window for gas and liquid sample cells used with infrared and FTIR spectrophotometers. It is also useful for CO<sub>2</sub> lasers, although KCl is normally preferred due to its lower refractive index at 10.6 microns. NaCl windows are soft and hygroscopic.



### Optical Properties- Sodium Chloride (NaCl) Optical Crystals

Transmission Range: 0.2 to 20 microns  
Refractive Index: 1.494 at 10 microns  
Reflection Loss: 7.5% at 10 microns ( 2 surfaces)  
dN/dT:  $-36.2 \times 10^{-6}/^{\circ}\text{C}$  at 0.7 microns



### Physical Properties- Sodium Chloride (NaCl) Optical Crystals

Melting Point: 801° C  
Young's Modulus: 39.98 GPa  
Apparent Elastic Limit: 350 psi  
Structure: Cubic-(100) cleavage plane



### Chemical Properties- Sodium Chloride (NaCl) Optical Crystals

Solubility: 35.7gm/100gm H<sub>2</sub>O at 0° C



*future in focus...*