Material	Spectral Range based on 4 mm crystals (cm^{-1})	Refractive Index based on 4 mm crystals (cm^{-1})	Solubility in water at 25 °C (g/100g)	General Properties
Sodium Chloride (NaCl)	52,600 - 584	1.49 @ 1,000	36	Soluble in water and glycerine, slightly soluble in alcohol. Fairly resistant to thermal and mechanical shock. *Hygroscopic.*
Potassium Bromide (KBr)	48,800 - 388	1.52 @ 1,000	65	Soluble in water and alcohol. Slightly soluble in ether. Fairly resistance to thermal and mechanical shock. *Hygroscopic.*
Potassium Chloride (KCl)	55,600 - 439	1.46 @ 1,000	35	Less soluble than NaCl with lower reflection losses and wider transmssion range. *Hygroscopic.*
Calcium Fluoride (CaF_2)	79,500 - 1,025	1.40 @ 2,000	0.0017	Insoluble in water, resists most acids and alkalis. Soluble in ammonium salts. High mechanical strength makes it suitable for high-pressure work.
Barium Fluoride (BaF_2)	66,000 - 782	1.42 @ 1,000	0.17	Insoluble in water, soluble in acids. Wide spectral range. Fairly sensitive to mechanical and thermal shock. Relatively hard.
Cesium Iodide (CsI)	42,000 - 172	1.73 @ 1,000	44	Soluble in water and alcohol. Wide transmission range. Good resistance to shock. Soft and *slightly hygroscopic*. *Slightly toxic*.
Thallium Bromo-iodide (KRS-5)	17,900 - 232	2.37 @ 1,000	0.05	Slightly soluble in water. Soluble in bases, not in acids. Good transmission range, ideal for ATR work. Soft - will deform. *Highly toxic*.
Silver Bromide (AgBr)	22,000 - 292	2.22 @ 1,000	1.2E-05	Insoluble in water, soluble in acids. Attacks base metals. Senstitve to mechanical shock. Crystal may darken when exposed to UV light. Easily scratched. Will cold flow.
Silver Chloride (AgCl)	24,500 - 400	1.90 @ 1,000	5.2E-02	Insoluble in water, slightly soluble in sodium hydroxide and some aminos. Blackens under UV radiation. Not recommended for use at temperatures above 200 °C.
Silicon (Si)	10,000 - 1,540 500 - 300	3.41 @ 1,000	0	Hard, brittle, relatively inert. Can be attacked by a combination of HF and HNO_3, but withstands thermal shock. Strong absorbtion band in IR.
Fused Silica (SiO2)	50,000 - 2,677	1.42 @ 3,333	0	IR grade material is insoluble in water and slightly soluble in bases. Extends into the NIR region.
Germanium (Ge)	5,500 - 574	4.0 @ 1,000	0	Insoluble in water. Suitable for ATR work where high-pressure contact is not required. Very brittle. High reflection losses due to low transmission levels.
Zinc Selenide (ZnSe)	15,000 - 508	2.40 @ 1,000	0	Insoluble in water, slightly soluble in acids. High resistance to chemical attack. Unaffected by organic solvents, dilute acids and bases. Ideal for ATR work due to low absorbance in the IR region.
Zinc Sulfide (ZnS)	17,000 - 722	2.20 @ 1,000	0	Insoluble in water, normal acids and bases. Reacts to strong oxidizing agents. Good thermal and mechanical shock resistance.

Storage of hygroscopic materials: NaCl, KBr and KCl crystals should be stored in airtight, sealed containers. Alternatively in oil, kerosene or in a dry atmosphere.