Sinoceramics

Material:

Sinoceramics has the capability to fabricate optical components with various optical materials. Some of the most important material properties to consider for optical elements are:

- Transmission versus wavelength
- Index of refraction
- Thermal characteristics
- Mechanical and chemical characteristics
- Cost

There are two instances in which you might need to know more about optical materials. First, you may need to determine the performance of a catalog component in a particular application. Second, you may need specific information when selecting the material for a custom component. The data below is intended to assist in these situations. It is very important to select the best material for your optical component(s).

General Optical Glass: Crown Glass, Fire Glass, SF Glass...
Special Glass: Fused Silica, UV Fused Silica, Color Glass, Float Glass...
Laser Product: Nd:YVO_4, Nd:YAG, Ti:Sapphire, Cr:YAG, KTP, KDP, KD*P...
Optical Crystal: Sapphire, CaF_2, BaF_2, MgF_2, MgO, Silicon, Ge, ZnSe, ZnS, YAG...
Birefringence Material: YVO_4, $LiNbO_3$, Quartz, Calcite, a-BBO, TeO_2...

n_o = ordinary n_e = extraordinary

Material	Refractive Index		Transmission	Thermal Expansion Coefficient (10^{-6} /k)	
BK7	1.5164 (588nm)		0.33 - 2.1	7.5	
Fused Silica	1.4858 (308nm)		0.185 - 2.5	0.54	
CaF_2	1.399 (5.0μm)		0.17 - 7.8	18.85	
Sapphire	1.755 (1.0μm)		0.18 - 4.5	8.4	
Quartz	n_o = 1.5427	n_e = 1.5518 (633nm)	0.20 - 2.3	7.07	
YVO_4	n_o = 1.9500	n_e = 2.1554 (1.3nm)	0.40 - 5.0	a: 4.46	b: 11.37
Calcite	n_o = 1.9500	n_e = 2.1554 (1.3nm)	0.21 - 2.3	a: 24.39	b: 5.68
$LiNbO_3$	n_o = 2.2863	n_e = 2.2027 (633nm)	0.37 - 4.5	a: 16.7	c: 2.0
a-BBO	n_o = 1.6749	n_e = 1.5555 (532nm)	0.19 - 3.5	a: 4.0	c: 36
TeO_2	n_o = 2.261	n_e = 2.142 (6332nm)	0.35 - 5.0		
SF11	1.78472 (588nm)		0.37 - 2.5	6.8	
SF14	1.76182 (588nm)		0.42 - 2.0	8.1	
Silicon	3.4179 (10μm)		1.20 - 7.0	4.15	
Ge	4.003 (10μm)		1.90 - 16	6.1	
ZnSe	2.10 (10μm)		0.63 - 18	7.8	
ZnS	2.2 (10μm)		0.38 - 14	6.5	
LiF	1.39 (500nm)		0.15 - 5.2	37	
KBr	1.526 (10μm)		0.28 - 22	43	
MgF_2	n_o = 1.3836	n_e = 1.3957 (405nm)	0.13 - 7.0	a: 13.7	b: 8.48
YAG	1.8197 (1.0μm)		0.25 - 5.0	6.9	
TiO_2	n_o = 2.261	n_e = 2.142 (633nm)	0.35 - 5.0		