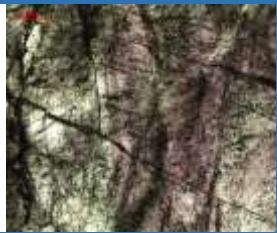






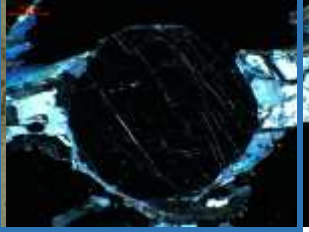















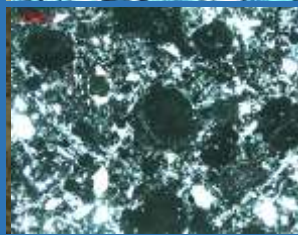

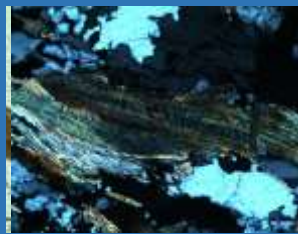
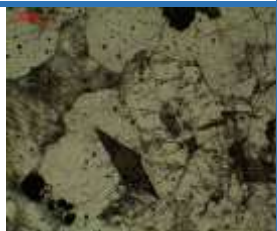


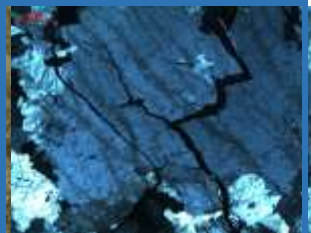


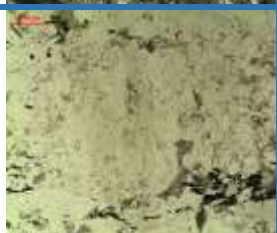
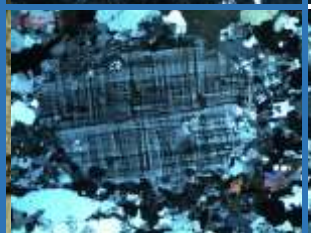

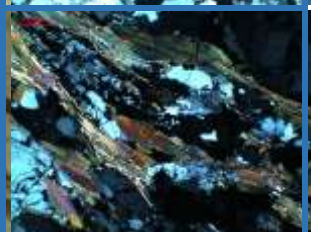
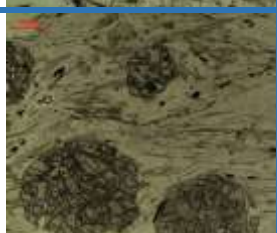






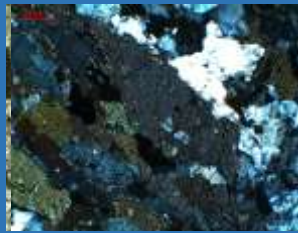
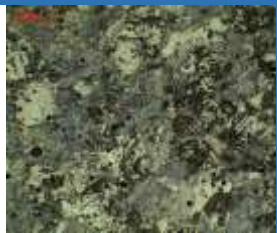





**List of Rock Forming Minerals and Their properties Under the Microscope**





Mineral	Crystal System	Cleavage	Color	Relief	Birefringence	Extinction	Plane Polarized	Cross Polarized
Fluorite	Cubic			1.43	isotropic			
Sodalite (Na <sub>3</sub> Al <sub>3</sub> Si <sub>3</sub> O <sub>12</sub> .NaCl)	Cubic	Poor	Gray to blue	1.48	isotropic			
Analcime (NaAlSi <sub>2</sub> O <sub>6</sub> .H <sub>2</sub> O)	Cubic	Imperfect	Colorless	1.49	isotropic			
Garnet	Cubic			1.71-1.87	isotropic			
Spinel	Cubic			1.72-1.74	isotropic			

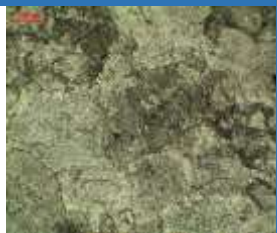




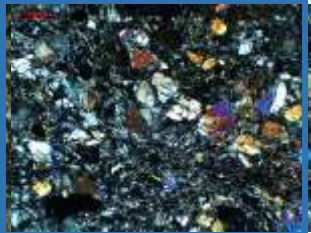
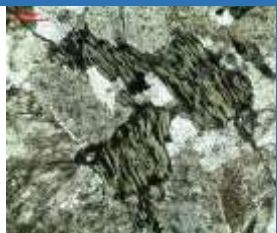

Calcite	Hexagonal (-)			1.48-1.65	0.172			
Dolomite	Hexagonal (-)			1.50-1.67	0.177-0.185			
Magnesite	Hexagonal (-)			1.50-1.70	0.191			
Nepheline (Na,K)AlSiO4	Hexagonal (-)	Poor cleavage	Colorless to cloudy	1.54	0.003-0.005	Parallel		
Scapolite Maialite $\text{Na}_4(\text{AlSi}_3\text{O}_8)_3\text{Cl}$ Meionite $\text{Ca}_4(\text{Al}_2\text{Si}_2\text{O}_8)_3(\text{CO}_3, \text{SO}_4)$	Tetragonal (+)			1.54-1.59	0.002-0.004			
Tourmaline	Hexagonal (-)			1.62-1.67	0.021-0.029			

Apatite	Hexagonal (-)			1.63	0.003			
Quartz	Hexagonal (+)	Absent	Colorless	1.54	0.009	Wavy (Undulatory)		
Leucite (KAlSiO6)	Tetragonal (+)	Poor	Colorless	1.51	0.001	Wavy		
Zircon	Tetragonal (+)			1.93-1.99	0.060-0.062			
Rutile	Tetragonal (+)			2.61-2.90	0.286-0.287			
Plagioclase	Triclinic (-,+)	One perfect	Colorless Pale brown	1.53-1.59	0.007-0.013	Inclined Composition		

Orthoclase	Monoclinic (-)	Two	Colorless Pale brown	1.52	0.005-0.007	Inclined 0-12°		
Sanidine	Monoclinic (-)	One		1.52	0.005-0.007			
Microcline	Triclinic (-)	One		1.52	0.006			
Biotite $Kfe_3(AlSi_3O_{10})(OH)$	Monoclinic (-)	One excellent	Brown, Pale green	1.57-1.61	0.028-0.081	Parallel - Up to 3°		
Muscovite $Kal_2(AlSi_3O_{10})(OH)$	Monoclinic (-)	One Excellent	Colorless	1.56-1.60	0.036-0.054	Parallel		
Tremolite Actinolite	Monoclinic (-)			1.61-1.63	0.016-0.030			

Talc $Mg_3Si_4O_{10}(OH)_2$	Monoclinic (-)	One perfect	Colorless	1.54-1.58	0.046-0.050	Parallel		
Aragonite	Monoclinic (-)			1.53-1.68	0.155			
Hornblende (Amphibole)	Monoclinic (-)			1.65-1.67	0.020			
Glaucophane	Monoclinic (-)			1.65-1.67	0.006-0.029			
Andalusite	Orthorombic (-)			1.63	0.009-0.011			
Disten (Kyanite)	Triclinic (-)			1.72	0.014-0.017			

Epidote	Monoclinic (-)			1.71-1.80	0.015-0.048			
Clinozoisite	Monoclinic (-)			1.67-1.73	0.005-0.015			
Gypsum	Monoclinic (+)			1.52	0.010			
Anhydrite	Orthorombic (+)			1.57-1.61	0.044			
Barite	Orthorombic (+)			1.64	0.012			
Sillimanite	Orthorombic (+)			1.65-1.68	0.021			

Diopside <chem>CaMgSi2O6</chem>	Monoclinic (+)	Two 87° basal sec.	Colorless to pale green	1.66-1.75	0.031	Up to 44°		
Augite	Monoclinic (+)	Two 87° basal sec.	Colorless to pale green	1.68-1.75	0.024-0.029	Between 36- 44°		
Hypersthene	Orthorombic (+)	Two	Colorless to plae green	1.65-1.72	0.008-0.016	Parallel		
Lawsonite	Orthorombic (+)			1.66-1.68	0.020			
Chlorite <chem>Mg3Si4O10(OH)</chem>	Monoclinic (+,-)	One Perfect	Green to pale brown	1.56-1.61	0.006-0.020	Inclined 0- 10°		
Chloritoide	Monoclinic (+)			1.72	0.010-0.012			
Staurolite	Monoclinic (+)			1.75	0.013-0.015			

