Very Common Minerals			
Mineral (r.i.)	**Relief**	**Interference color**	**Distinctive characteristics**
Quartz (1.55)	Low	1st order white	Undulose or domainal extinction
Plagioclase (~1.55)	Low	1st order white	Albite and pericline twinning; often optically zoned
K-feldspar (1.53)	Very Low	1st order white	"Tartan" twinning (microcline); Carlsbad twins (sanidine)
Muscovite (1.6)	Moderate	Extremely high	Bird's Eye Extinction (BEE) but colorless in PPL; single really good cleavage
Biotite (1.62)	Moderate	Moderately High	BEE, pleochroic brown or brownish green in PPL; may host pleochroic haloes; single really good cleavage
Hornblende (1.65)	Mod. High	1st order	Pleochroic green, brown, greenish brown or greenish blue; inclined extinction; pleochroic haloes; 60-120 cleavage (good)
Clinopyroxene (1.7)	High	1st–2nd order	Greenish in PPL (may be pale); inclined extinction; 90-90 cleavage (not great)
Orthopyroxene (1.7)	High	low 1st order	Subtle pink/green pleochroism; parallel extinction; 90-90 cleavage (not great)
Olivine (1.67)	Mod. High	2nd order	Arcuate fractures; doesn't occur with quartz
Garnet (1.8)	Very High	(none)	Often contains quartz and oxides
Calcite (1.5-1.65)	Variable	Extremely high	Planar twin domains may appear colored
Common or Diagnostic Minerals			
Mineral (r.i.)	**Relief**	**Interference Color**	**Other characteristics**
Epidote (1.75)	Very High	Anomalous blue or 2nd order	Occasional twins; very saturated interference colors, e.g., lemon yellow, bright magenta
Kyanite (1.72)	High	1st order	Good cleavage + 1 parting; ductile folding common; looks like colorless staurolite, but with good cleavage; often plucked (has holes)
Sillimanite (1.66)	Mod. High	1st order	Good cleavage; rhombs or rectangles in cross section; also can be fibrous (fibrolite mats)
Andalusite (1.64)	Moderate	<1st order	Chiastolite crosses (sometimes); faintly pink pleochroism
Chlorite (1.6)	Mod/low	Green-brown/blue	Pleochroic green; pleochroic haloes; one really good cleavage
Staurolite (1.75)	Very High	<1st order	Pleochroic yellow. Looks like kyanite but lacks cleavage
Chloritoid (1.75)	Very High	Low	Pleochroic blue/green; may have hourglass structure. Similar to staurolite but different color.
Cordierite (1.55)	Low	Low	Looks like quartz, but can have yellow pleochroic haloes around accessory minerals; sillimanite often present
Glaucophane (1.65)	Mod. High	1st order	Pleochroic blue/purple
Actinolite (1.65)	Mod. High	1st order	Very pale green to colorless
Accessory Minerals (small or tiny, rarely abundant)			
Mineral (r.i.)	**Relief**	**Interference Color**	**Other characteristics**
Apatite (1.65)	Mod. High	Very Low (gray)	Usually small; looks a lot like garnet but lower relief, and not quite isotropic
Tourmaline (~1.65)	Mod. High	1st order	Usually small; diverse colors; reverse pleochroism
Spinel (1.8)	Very High	(none)	Dark bottle green or reddish brown
Zircon/Monazite (1.9)	Very High	Very High	Usually tiny; causes pleochroic haloes in biotite, chlorite, and hornblende
Ilmenite		(opaque)	Usually small and elongate; rarely blood-red or purple at thinned edges
Magnetite, chromite sulfides		(opaque)	Usually small; blockier than ilmenite; chromite often inclusions in olivine
Titanite (1.95)	Very High	Very High	Usually small; brown/tan in PPL; similar to calcite but much higher relief
Rutile (2.75)	Very High	Very High	Usually small to tiny; blobby or needly; Orange/brown/amber-colored in PPL

Note: r.i. = refractive index; bird's eye extinction refers to a pebbly appearance in crossed polars and reflects imperfections introduced in micas when thin sections are made. This texture resembles bird's eye maple.