

KEY TO COMMON METAMORPHIC MINERALS

SOFTER THAN GLASS

These minerals are often in mixed mineral associations and hardness may be difficult to determine

Increasing hardness

H: 1; apple-green, gray, white; greasy; foliated masses, or fine grained aggregates



Often mixed with serpentine; from alteration of mafic minerals; low grade; soapstone = massive



TALC

H: 1-2; black to steel gray; metallic luster; greasy feel, black streak



Disseminated in mables, schists, gneisses. Often derived from metamorphism of organic matter



GRAPHITE

H: 2-2.5; dark green, basal cleavage (micaceous); flexible; but distinct crystals rare; often massive



In slates/phyllites/green schists w/o visible crystals but foliation; common with epidote and actinolite



CHLORITE

H: 3-5; mottled lighter & darker green; greasy to waxlike when massive; may be fibrous (asbestos)



Common, widely distributed alteration product of olivine pyroxene, amphibole; often with talc



SERPENTINE

H: 5-6; light green prismatic, fibrous or compact (jade); glassy or silky. Grades to white Tremolite



Commonly seen as fibrous lenses or layers; common in greenschist facies and dolomitic marbles



ACTINOLITE

H: 5 & 7; blue (often patchy or streaky) bladed crystals; vitreous to pearly



Typically masses of small crystals; often w/ garnet, staurolite, corundum in schists & gneisses; also eclogites



KYANITE

H: 6-7; long slender to fibrous brown, pale green or white crystals, often in parallel groups



High grade regional schists/gneisses and contact metamorphic hornfels



SILLIMANITE

H: 7; green (pistachio), yellow to blackish green; prismatic crystals; transparent to translucent



Commonly as a finely disseminated pale green mass of microscopic crystals mixed with chlorite



EPIDOTE

H: 7; prismatic crystals; brown; glassy, dull to earthy; sometimes crossed (intergrown) crystals at 60° and 90°



Frequently with garnet in schists, sometimes with kyanite; weathers punky and splotchy.



STAUROLITE

H: 7-7.5; 12 sided crystals or fractured masses; glassy; red, brown, yellow, white, green



Common in schists, often with minor amounts of staurolite; also pegmatites and some igneous rocks



GARNET

H: 9; hexagonal crystals with basal parting; brown, pink, blue usual, but also white, gray, green, ruby, sapphire



In rocks may be confused with staurolite; common in mica schist and marbles & syenites



CORUNDUM

HARDER THAN GLASS

Weathered specimens lose color and hardness; if specimen not here check under softer than glass

Increasing hardness