

Generalized Rock Identification Chart For Common METAMORPHIC ROCKS

TEXTURE	GRAIN SIZE	ROCK NAME <i>*modify rock name by adding name of prominent minerals (e.g., garnet schist, etc.)</i>	DESCRIPTION	INTERPRETATIONS			
				Common Protoliths <i>(original or "parent" rock)</i>	Metamorphic Grade / Type		
Foliated (layered) Non-Foliated (massive or no layering)	very fine	SLATE	layers break into thin plates (slaty cleavage), smooth surface, harder and more shiny than shale	mudstone	LOW	low pressure (P) & low temperature (T) metamorphism (regional)	
	fine	PHYLLITE	layers may be wrinkled (crenulated), silky sheen (phyllitic luster)	mudstone	metamorphic grade	low P & low T metamorphism (regional)	
	medium to coarse	SCHIST	layers have flaky scales of mica (schistosity), index minerals are common (e.g., garnet, micas, kyanite, staurolite, sillimanite, amphibole, etc.) Amphibolite - abundant amphibole	volcanic rocks, mudstone		moderate P & T metamorphism (regional) many varieties from different protoliths form in different pressure & temperature conditions	
	coarse	GNEISS	lighter and darker compositional layers (gneissic banding) Migmatite Mylonite Augen Gneiss	plutonic rocks, mudstone, etc.		HIGH	high P & high T metamorphism (regional) Mylonite (formed from faulting or ductile shear) Migmatite (highest grade - partially melted)
	coarse	METACONGLOMERATE	breaks across clasts boundaries Stretched Pebble Conglomerate - original clasts deformed into cigar-shaped rods (stretching lineation)	conglomerate		variable metamorphic grade variable P & T metamorphism (regional) may become foliated from stretching during tectonic shear	
	fine	METABASALT	Greenstone - a common Precambrian rock type (greenish color due to high chlorite content) transitional with greenschist & amphibolite	basalt	low metamorphic grade low P & low T metamorphism (regional) may become foliated (greenschist) under higher pressure & temperature conditions		
	fine to coarse	QUARTZITE	interlocking quartz break across grain boundaries, very hard (H = 7), not scratched by steel, will not react with HCl, variable color, relict sedimentary structures may be preserved	quartz arenite	variable metamorphic grade low P & high T metamorphism (contact) may also form from regional metamorphism (no foliation due to lack of platy minerals)		
	medium to coarse	MARBLE	interlocking calcite or dolomite crystals, easily scratched with a steel nail (H = 3), may react with HCl, variable color	limestone dolostone	variable metamorphic grade low P & high T metamorphism (contact) may also form from regional metamorphism (no foliation due to lack of platy minerals)		
	very fine	HORNFELS	very hard, variable color	many	high metamorphic grade low P & high T metamorphism (contact)		
	n / a	ANTHRACITE COAL	hard, compact, shiny luster, dark color, >90% carbon	bituminous coal	low metamorphic grade low P & low T metamorphism (regional)		