

Identification Chart For Common METAMORPHIC ROCKS

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TEXTURE	GRAIN SIZE	ROCK NAME <small>*modify rock name by adding name of prominent minerals (e.g., garnet schist, etc.)</small>	DESCRIPTION	INTERPRETATIONS		
				Common Protoliths <small>(original or "parent" rock)</small>	Metamorphic Grade / Type	
<div style="display: flex; flex-direction: column; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Foliated <small>(layered)</small></div> <hr style="width: 100%;"/> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Non-Foliated <small>(massive or no layering)</small></div> </div>	very fine	SLATE	<i>layers break into thin plates (slaty cleavage), smooth surface, harder and more shiny than shale</i>	mudstone	LOW --- metamorphic grade	low pressure (P) & low temperature (T) metamorphism (regional)
	fine	PHYLLITE	<i>layers may be wrinkled (crenulated), silky sheen (phyllitic luster)</i>	mudstone	---	low P & low T metamorphism (regional)
	medium to coarse	SCHIST	<i>layers have flaky scales of mica (schistosity), index minerals are common (e.g., garnet, micas, kyanite, staurolite, sillimanite, amphibole, etc.)</i> Amphibolite - abundant amphibole	volcanic rocks, mudstone	---	moderate P & T metamorphism (regional) many varieties from different protoliths form in different pressure & temperature conditions
	coarse	GNEISS	<i>lighter and darker compositional layers (gneissic banding)</i> 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	<i>breaks across clasts boundaries</i> 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	<i>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</i>	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	<i>interlocking calcite or dolomite crystals, easily scratched with a steel nail (H = 3), may react with HCl, variable color</i>	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	<i>very hard, variable color</i>	many	---	high metamorphic grade low P & high T metamorphism (contact)
	n / a	ANTHRACITE COAL	<i>hard, compact, shiny luster, dark color, >90% carbon</i>	bituminous coal	---	low metamorphic grade low P & low T metamorphism (regional)