

Rock Type	Texture, average. size of minerals, clasts or grains	observations	rock name
IGNEOUS ROCKS Rock formed from a molten state Interlocking homogenous crystalline texture – no apparent preferred orientation to the mineral grains	Frothy	Felsic - Light colored	<i>pumice</i>
		Mafic - Dark colored	("none")
	Glassy	Dark to black - felsic (DOES NOT follow normal color index)	<i>obsidian</i>
	Fine grained Extrusive, volcanic	Felsic - Light colored	rhyolite
		Intermediate	andesite
		Mafic - Dark colored	basalt
	Modifier for extrusive rocks with trapped gas bubbles that might fill in with minerals		amygdaloidal or vesicular
	Medium grained Dikes, sills, etc.	Felsic - Light colored	("none")
		Intermediate	<i>dacite</i>
		Mafic - Dark colored	diabase
	Coarse grained Generally intrusive or plutonic	Felsic - Light colored	granite
		Intermediate	diorite
		Mafic - Dark colored	gabbro
		Ultramafic	<i>peridotite</i>
	Modifier for extrusive rocks with fine matrix and well developed crystals		porphyry or porphyritic
SEDIMENTARY ROCKS Rocks formed from other rocks or existing materials. Consolidated detrital clasts (grains), chemical precipitates, and or biological residue	Coarse Fragments	Rounded clasts	conglomerate
		Angular clasts	breccia
	Sand sized fragments	"Clean" quartz (may be other minor minerals as well)	sandstone
		"Dirty" with rock fragments & clay	<i>graywacke</i>
	Fine grained - cannot see individual clasts or grains	Nonfoliated	siltstone
		Foliated	shale
	Fossiliferous	Mostly shell fragments	<i>coquina</i>
	Chemical - fine grain	Softer - reacts with dilute acid	limestone
		Harder - does not react with dilute acid	chert
	Evaporates	bedded to massive salt which is the mineral halite	rock salt
		Bedded to massive gypsum	rock gypsum
METAMORPHIC ROCKS Rocks changed by heat and or pressure but not melted. Interlocking, mixed crystalline textures, commonly with an orientation to the minerals. Rocks can be folded or crenulated.	Foliated, very fine grained-no visible minerals	Dull – metallic sound when tapped with metal object	slate
		Foliated, shiny due to increased size of micaceous minerals (almost see them)	phyllite
	Foliated - medium to coarse grain	Individual mineral grains visible. Major mineral(s) included as name modifiers (ex. Biotite Schist)	schist
	Color banded	Alternating layers of light (felsic) and dark (mafic) minerals	gneiss
	Distinct layering - often highly folded and contorted	Alternating layers of felsic igneous rock (light) and mafic gneiss (dark)	migmatite
	Non-foliated with non-oriented grains	Soft – reacts with dilute acid	marble
		Hard – does not react with dilute acid	quartzite
		Interlocking amphibole / hornblende crystals	amphibolite

Items in *italics* are not present or are very rare in Michigan

It is important to note that there are many, many intermediate steps or subdivisions of these main divisions provided here. Geology is full of "shades of gray," and the naming of rocks is not an exception. If you have a comment, correction, addition or deletion, please contact, Steven E. Wilson at wilsonse@michigan.gov.
THANKS!