Table 2.3 Sedimentary rock identification key. Sedimentary rocks are divided into two groups, detrital and chemical, depending upon the type of material that composes them. Detrital rocks are further subdivided by the size of their grains, while the subdivision of the chemical rocks is determined by composition.

DETRITAL ROCKS

Texture (grain size)	Composition	Rock Name
Coarse (over 2 mm) with large grains	Rounded fragments of quartz and/or chert	**Conglomerate**
	Angular fragments of quartz and/or chert	**Breccia**
Medium (1/16 to 2 mm) feels "sandy"	Quartz usually dominates (If abundant feldspar is present the rock is called **Arkose**)	Feldspathic **Sandstone** Arkose
Medium (1/16 to 2 mm) feels "sandy"	Quartz Arenite	Orthoquartizite **Sandstone**
		Hybrid
Medium (1/16 to 2 mm) feels "sandy"	Feldspathic graywacke	Lithic graywacke **Sandstone**
		Lithic Arenite
Fine (1/16 to 1/256 mm)	Quartz and clay	**Siltstone**
Very fine (less than 1/256 mm)	Quartz and clay	**Shale**

CHEMICAL ROCKS

Composition	Texture (grain size)	Rock Name	
Calcite, $CaCO_3$ (will effervesce)	Fine to coarse crystalline	**Crystalline Limestone** Oolitic	
	Visible shells and shell fragments loosely cemented	**Coquina**	Biochemical Limestone
	Various size shells and shell fragments cemented with calcite cement	**Fossiliferous Limestone**	
	Microscopic shells and clay	**Chalk** Kaolin	
Dolomite $CaMg(CO_3)_2$ (will effervesce if powdered)	Fine to coarse crystalline	**Dolostone** Dolomite	
Quartz, SiO_2	Very fine crystalline	**Chert (light colored)** **Flint (dark colored)**	
Gypsum $CaSO_4 \cdot 2H_2O$	Fine to coarse crystalline	**Rock Gypsum**	
Halite, NaCl	Fine to coarse crystalline	**Rock Salt**	
Altered plant fragments	Various size fragments	**Bituminous Coal** Lignite Peat	

TEXTURE	PARTICLE TYPE	COMPOSITION	COMMENTS		ROCK NAME	
Relatively coarse Detrital Grains (Can be seen with naked eye)	Detrital Grains > 2 mm	Any rock type (quartz, chert, or quartzite most common)	Rounded particles		Conglomerate	
			Angular particles		Breccia	
	Detrital Grains 1/16 to 2 mm (sand sized)	Rock fragments, mica, clay, quartz	Dirty" looking, dark colored; sandpapery feel		Graywacke	SANDSTONE
		Quartz, with at least 25% potash feldspar	Often reddish because of potash feldspar; sandpapery feel		Arkose	
		Quartz with minor accessory minerals	White, tan, brown; sandpapery feel		orthoquartzite Quartz Sandstone	
Relatively fine Detrital Grains (Cannot be seen with naked eye)	Detrital grains or interlocking crystals	Quartz and clay minerals	Gritty, 1/16-1/256 mm; some grains can be seen with hand lens		Siltstone	
		Predominantly clay sized particles	Smooth,< 1/256 mm; non-laminated		Claystone, Mudstone	
		Predominantly clay minerals	Smooth,< 1/256 mm; laminated		Shale	
		Calcite ($CaCO_3$)	Consolidated; fizzes rapidly with dilute HCl		Limestone	
		Calcite ($CaCO_3$)	Powdery; shells of microscopic animals; fizzes with HCl		Chalk (Kaolin)	
		Dolomite (Ca,Mg) $(CO_3)_2$	Consolidated; fizzes with dilute HCl when powdered		Dolostone	
		Chalcedony (SiO_2)	Light colored, hardness of 7		Chert	
		Chalcedony (SiO_2)	Dark colored, hardness of 7		Flint	
		Carbonaceous Material	Plant remains	Brown, soft, porous	Peat	
				Brown	Lignite	
				Black, sooty, blocky	Bituminous Coal	
Chemical or Biochemical Grains (Crystals or other grains can be seen with naked eye)	Interlocking Crystals, Ooids, or Biochemical Grains	Calcite ($CaCO_3$)	Fizzes rapidly with dilute HCl	Medium to coarse grained	Crystalline Limestone	
				Abundant fossils, consolidated	Fossiliferous Limestone	
				Ooids (tiny spheres)	Oolitic Limestone	
				Banded	Travertine	
				Fossils & fossil fragments loosely cemented	Coquina	
		Dolomite (Ca,Mg) $(CO_3)_2$	Fizzes with dilute HCl when powdered		Dolostone	
		Halite (NaCl)	Evaporite, tastes salty		Rock Salt	
		Gypsum ($CaSO_4\ 2H_20$)	Evaporite, hardness of 2		Rock Gypsum	