

Sedimentary Rocks

Sedimentary rock: Are the type of rocks that is formed by the deposition of material at the Earth's surface and within bodies of water by process called **Sedimentation**. Particles that form a sedimentary rock by accumulating are called **sediment**.

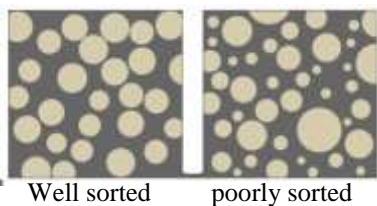
Types of sedimentary rocks:

1. **Clastic sedimentary rocks:** dominated by component from erosion of previously existing Earth material. Such as (**Shale, Mudstone, Siltstone, Sandstone, Breccia, Conglomerate**).
2. **Non-clastic sedimentary rocks (Chemical):** dominated by component from solution and/or remains or traces of once living organisms (plant or animal) or material derived from their activities. These divided into following kinds:
 - a. **Carbonate sedimentary rocks** are composed of calcite (CaCO₃), dolomite (CaMg(CO₃)₂) examples include **limestone** and **dolostone, stalactite**
 - b. **Evaporite sedimentary rocks** are composed of minerals formed from the evaporation of water. The most common evaporite minerals are (**halite** built on Cl⁻), and (**gypsum** built on SO₄). Examples (**halite (rock salt), gypsum** , and **anhydrite**).
 - c. **Organic-rich sedimentary rocks** have significant amounts of organic material (animal & plant), generally in excess of 5% total organic carbon. examples **coquina, chalk, coal(peat), Bituminous**
 - d. **Siliceous sedimentary rocks** are almost entirely composed of silica (SiO₂), typically as **chert**
 - e. **Iron-rich sedimentary rocks** are composed of >15% iron; include **ironstones**
 - f. **Phosphatic sedimentary rocks** are composed of phosphate minerals and contain more than 6.5% phosphorus; examples include **phosphatic rocks**.

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Sedimentary rocks classified on the basis of following parameters:

- a. **Color** of rock (may be white, gray, greenish gray.....etc.)
- b. **Size** of particles/or crystals formed the rock: fine, medium, and coarse
- c. **Sorting:** The statistical distribution of grains of the clastic rock only.



d. **Mineral composition:**

clastic sedimentary rocks	
ROCK NAME	MINERAL COMPOSITION
MUDSTONE	Clay
SILTSTONE	
SANDSTONE	quartz (quartz sandstone)
	rock fragments, feldspar, quartz, mica (graywacke)
	quartz, feldspar (arkose)
CONGLOMERATE	quartz, feldspar, rock fragments
BRECCIA	

non-clastic sedimentary rocks	
ROCK NAME	MINERAL COMPOSITION
CHERT	quartz
GYPSUM	gypsum
ROCK SALT	halite
DOLOMITE	dolomite
LITHOGRAPHIC LIMESTONE	calcite
COAL INCLUDE PEAT LIGNITE BITUMINOUS ANTHRACITE	no true minerals, various stages of altered plant remains

Clastic sedimentary rocks

No.	Name	Color	Grain/ or crystal size	sorting	Mineral Composition	description
1						
2						
3						
4						
5						
6						
7						

Non-Clastic sedimentary rocks

No.	Name	Color	Grain/ or crystal size	Mineral Composition	description
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					