

Calculating A Mineral's Specific Gravity

Specific Gravity is the mass (weight) of an object divided by Mass of water displaced by the object. In another words, it is the density of the sample in relationship to water.

Equipment Required:

1. Digital Scale
2. Clear container
3. Light fishing line
4. Calculator
5. Paper and pencil
6. Reference book for specific gravity of minerals

Procedure:

1. Turn on scale and set to grams. Works best for small and medium samples.
2. Fill container $\frac{3}{4}$ with water and place on scale.
3. Set the Tare to zero
4. Tie a light fishing line to your sample long enough to reach outside the container.
5. Place sample in container with end of the line hanging outside the container.
6. Record the weight of the sample.
7. Pick up the end of the fishing line and suspend the sample in the water without touching the container.
8. Record the weight of the displaced water.
9. Divide the weight of the sample by the weight of the displaced water to get specific gravity.

Example:

The sample weighs 36.2 grams.

Suspended in water the mass of the displaced water is 14.2 grams.

Specific Gravity = $36.2 \text{ grams} / 14.2 \text{ grams} = 2.5$

Specific Gravity of Minerals

Mineral	Specific Gravity	Mineral	Specific Gravity
Graphite	2.23	Barite	4.45
Quartz	2.65	Ilmenite	4.5 - 4.7
Feldspars	2.6 - 2.75	Magnetite	4.9 - 5.2
Beryl	2.6 - 2.9	Pyrite	4.9 - 5.2
Tourmaline	2.9 - 3.2	Hematite	4.9 - 5.3
Hornblende	3.0 - 3.4	Arsenopyrite	6.0 - 6.2
Fluorite	3.18	Galena	7.5
Epidote	3.3 - 3.6	Cinnabar	8.1
Topaz	3.53	Silver	10.5
Corundum	4.02	Uranium	18.7