



## The Physical Properties of Minerals



Minerals are identified by analyzing their physical properties. Let's learn about these properties and discover what they mean and how to determine them. Start by reading the descriptions of each of the physical properties. You can then dig deeper by going to the source website listed below and clicking on each of the links to learn more about each property.

### **Cleavage & Fracture**

Cleavage and fracture are descriptions of how a mineral breaks into pieces. Cleavage describes how a mineral breaks into flat surfaces (usually one, two, three or four surfaces). Fracture describes how a mineral breaks into forms or shapes other than flat surfaces.

### **Hardness**

The hardness of a mineral is a way of describing how easy or difficult it is to scratch the mineral. It is used, in combination with the other physical properties, to help identify a mineral specimen.

### **Luster**

Luster is a description of the way a mineral surface looks when light reflects off of the surface.

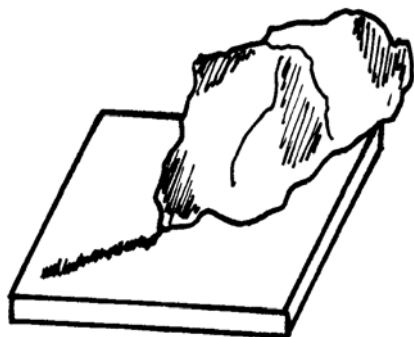
### **Specific Gravity**

Specific Gravity is a measure of the density of a mineral compared to the density of an equal volume of water.

### **Streak**

Streak is the color of a mineral when it is crushed to a powder.

# STREAK



Another physical property that mineralogists use to identify a mineral is *streak*. Streak is the color of a mineral when it is crushed to a powder. Most minerals are the same color in the hand sample as they are when they are crushed. However, there are a few minerals that are a different color when they are powdered.

The easiest way to crush a mineral into a powder is to do a *streak test*. Try this yourself. Take a mineral and rub it against a piece of unglazed porcelain. The back side of a bathroom or kitchen tile is perfect. Officially this is known as a *streak plate*. Look at the color of the line on the streak plate.

This is the mineral's streak.

Mineral Name	Streak
Azurite	
Malachite	
Hematite	
Pyrite	
Fluorite	
Calcite	
Graphite	
Feldspar	
Quartz	
Corundum	
Gypsum	
Sulfur	
Galena	

If you have the following minerals, do a streak test on each and record the result in the table above. If you do not have a specimen, or if your specimen is too good to damage by doing a streak test, look the answer up in a good mineral book. (It is always best to do your physical tests on pieces of a mineral that are not collector specimens. Any test you do (specific gravity, hardness, streak) will damage the specimen.

Notice that minerals that are harder than the porcelain will not leave a streak. A streak plate has a hardness around 7. You may see a colorless line, but that is where the mineral scratched into the streak plate!