

Lab 4: Minerals

Hardness

Samples 1–9 define the Mohs hardness scale. Harder minerals can scratch softer minerals; softer minerals cannot scratch harder minerals. The samples are

1	Talc	6	Feldspar
2	Gypsum	7	Quartz
3	Calcite	8	Topaz
4	Fluorite	9	Corundum
5	Apatite	10	(We don't have diamond.)

To make a scratch, hold one mineral firmly against the table top. Holding the other mineral firmly in the other hand, place a point of that mineral against a flat portion of the target mineral. Drag the point across the surface. Examine the surface of the target specimen. Is there a scratch? If not, try again, pressing more firmly. If you see a mark, try to brush it away with your finger. If a groove persists in the target surface, that is a scratch.

- How hard on the Mohs scale is an *iron nail*? _____ A *fingernail*? _____

Streak

Hold a porcelain streak plate firmly on the table. Pressing firmly, drag a mineral across the surface of the plate. The mark it leaves on the plate is the **streak**.

Luster

How does the mineral reflect light? There are a variety of names used to describe luster, including metallic, submetallic, nonmetallic, vitreous, dull, greasy, pearly, resinous, silky, waxy, and adamantine. Hold the specimen under direct light and observe it from a variety of angles. Different specimens of the same mineral may exhibit different lusters, depending on surface characteristics.

Mineral Samples

Examine the mineral samples given. Observe their properties, including hardness, color, luster and streak. Note any other distinctive characteristics, such as crystal shape, magnetism, and heft.

#	Name	Hard	Color/ Luster	Streak	Other
10	Feldspar				
11	Celestite				

#	Name	Hard	Color/ Luster	Streak	Other
12	Chalcopyrite				
13	Magnetite (1)				Check with magnet.
14	Magnetite (2)				
15	Hematite				
16	Satin spar				
17	Rose quartz				
18	Halite				
19	Calcite				
20	Barite				Note heft.
21	Obsidian				
22	Pyrite				
105	Muscovite				Note cleavage. Can you peel off a sheet?

#	Name	Hard	Color/ Luster	Streak	Other
33	Sulfur				
35	Kyanite				Try to scratch with an iron nail across and with the grain.

Unidentified minerals

What can you find out about these mineral samples?

#	Hard	Color/luster	Streak	Observations
101				
102				
103				
104				
106				
107				

Rocks

Rocks are made of grains of one or more minerals. What can you determine about the minerals in these rocks?

64 and 68. These are samples of calcite.

69. This rock is a quartzite. What is its mineral composition?

“Soldier’s Delight”

“Sybille Canyon”

“Little Harbor”

“Vedauwoo”