

Mineral Identification Lab

Answer the following questions using the mineral trays provided.

1. Pick up specimens 15, 18, 19, and 22. Which one has the highest specific gravity (refer to the discussion on "Specific Gravity" on page 3)?

2. Note the colors of specimens 7. All the specimens are the same mineral. By referring to page 2, would you say this mineral displays exotic or inherent coloring?

3.
 - a. Is specimen 8, harder or softer than your fingernail?

 - b. Is specimen 8, harder or softer than glass?

 - c. Describe the hardness of specimen 8. (<2.5, 2.5-5.5, >5.5)

4. Carefully study specimens 13, 17, 18, 19, 20, and 24. Determine which luster best describes each: metallic, nonmetallic-glassy, or non-metallic-dull.
 - a. Specimen 13
 - b. Specimen 17
 - c. Specimen 18
 - d. Specimen 19
 - e. Specimen 20
 - f. Specimen 24

5. Specimen 2:
 - a. How many planes of cleavage does this mineral have? One, two, or three?

 - b. Do the planes meet at right angles?

6. Specimen 4:
 - a. What is the color of the specimen?

 - b. What is the color of the mineral's streak?

 - c. Were the colors of the mineral and the streak the same?

7. Specimen 6 demonstrates cleavage.
 - a. How many planes of cleavage does this mineral have?

 - b. Do the planes meet at right angles?

8. Some minerals have a distinctive "feel" which is a characteristic that may help in identifying the specimen.
 - a. Compare the "feel" of specimens 8 and 19. Which has a soapy feel?

 - b. Compare samples 10 and 15. Which has a greasy feel?

9. What is the hardness of specimen 7? (<2.5, 2.5-5.5, >5.5)
 - a. How did you arrive at your answer?

10. Using the display samples provided, put a small drop of dilute hydrochloric acid (HCl) on specimens 2 and 7. Do NOT put acid on the samples in the mineral set! Which specimen reacted with the acid? You can see from this test that although the two minerals may look very similar, they may have altogether different properties.

11. Few minerals show obvious magnetic attraction; therefore, if such a property is displayed by a mineral, it would be a very diagnostic property. Which of your specimens is magnetic?

12. Pick up specimens 22 and 23. Which has the higher specific gravity?

13. What is the hardness of specimen 5?
14. Specimen 18 has well developed cleavage. The cleavage is:
 - a. 3 directions at right angles.
 - b. 3 directions not at right angles
15. Specimen 19:
 - a. What is the color of the streak?
 - b. Is the streak the same color as the mineral?
 - c. What does the lab manual say concerning the color of the streak you found?
16. Four minerals in your set have a definite metallic luster. List these by number.
17. What is the hardness of specimen 2?
18. It is common for sample 7 to exhibit a fracture that looks like a thick piece of broken glass. Does your sample exhibit this property?
19. When a mineral breaks into smooth curved surfaces resembling broken glass it is said to exhibit what type of fracture?
20. Does sample 11 exhibit cleavage? If yes, then describe the planes of cleavage.
21. What is the streak color of sample 23?
 - a. Sniff the streak. What does it smell like?
22. Determine the following for sample 6:
 - a. Luster:
 - b. Streak:

c. Cleavage:

d. Hardness: