

Chemistry – Chapter 2 Book Assignment #1: Classification of Matter

1. List three physical properties of copper.
2. What is the physical state of each of these materials at room temperature?
 - a. gold
 - b. gasoline
 - c. oxygen
 - d. neon
 - e. olive oil
 - f. sulfur
 - g. mercury
3. Fingernail-polish remover (mostly acetone) is a liquid at room temperature. Would you describe acetone in the gaseous state as a vapor or a gas? Explain your answer.
4. Compare the arrangements of individual particles in solids, liquids, and gases.
5. What is the difference between homogeneous mixtures and heterogeneous mixtures?
6. How many phases does a solution have? Explain your answer.
7. Classify each of the following as a homogeneous or heterogeneous mixture:
 - a. chocolate chip ice cream
 - b. green ink
 - c. cake batter
 - d. cooking oil
 - e. granite rock
 - f. salt water
 - g. paint
 - h. a silver ring
8. How could you distinguish an element from a compound?
9. Classify the following materials as an element, compound, or mixture. Give reasons for your answers.
 - a. table salt (NaCl)
 - b. salt water

c. sodium (Na)

10. What does the formula H_2O tell you about the composition of water?

11. When ammonium nitrate (NH_4NO_3) explodes, the products are nitrogen, oxygen, and water. When 40 grams of ammonium nitrate explode, 14 grams of nitrogen and 8 grams of oxygen form. How many grams of water form?

12. Identify each of the following items as a mixture or compound. Classify the mixtures as homogeneous or heterogeneous.

a. raw egg

b. ice

c. gasoline

d. blood

13. Classify the following properties of the element silicon as chemical or physical properties:

a. blue-gray color

b. brittle

c. doesn't dissolve in water

d. melts at 1410°C

e. reacts vigorously with fluorine

14. Identify each of the following as an element, compound, or mixture.

a. iron

b. distilled water

c. laundry detergent

d. sulfur

e. chicken broth

f. sodium fluoride