

Name: _____

Block: _____

Date: _____

Chemistry 11

Classifying Matter

Assignment

1. Complete the following sentences by filling in the appropriate word from the list below.

Elements	Carbon
Mixtures	Pure
Compound	Letters
Symbols	Carbon dioxide
Properties	

- _____ cannot be separated by physical or chemical means.
- Elements are abbreviated with _____, which consist of one or two _____.
- Two or more elements chemically combined make up a _____.
- _____ is an example of an element and _____ is an example of a compound.
- Elements and compounds are called _____ substances because they have a unique set of chemical and physical _____.

2. Fill in the blanks in the following chart.

Element Name	Element Symbol	Common Ions Formed
a. Sodium		
b.	Cu	
c.	W	
d. Iron		
e.	Sn	
f. Potassium		
g.	Au	
h.	Ag	

3. Classify each of the following as one of an Atom (A), a Molecule (M) or an Ion (I).

- | | | | |
|--------------|-------|--------------|-------|
| a. P^{3-} | _____ | e. Ge | _____ |
| b. H_2O | _____ | f. O | _____ |
| c. O_2 | _____ | g. Ca^{2+} | _____ |
| d. Au^{3+} | _____ | h. NH_3 | _____ |

4. Describe the difference between a homogeneous and heterogeneous mixture. Give an example of each.

5. Assume you have 10g of pure gold. Should you refer to the gold as an atom or an element? Why?

6. Which of an Element (E), Compound (C), Solution (S), or Mechanical Mixture (MM) are possible classifications for the following? (There may be more than one answer for each example).

- A clear liquid which can be boiled away to leave a white solid. _____
- A collection of solid particles, some of which are white, and some of which are red. _____
- A solid which melts at 170°C. _____
- A gas. _____
- A liquid. _____
- A liquid which boils away completely at 136°C. When the liquid is strongly heated in a closed container, a yellow gas and a black solid are produced. _____

7. Which substance is the solute in each of the following?

- Water containing 5% acetic acid (this mixture is commonly called "vinegar").

- Tincture of iodine (a small amount of solid iodine mixed with alcohol).

- A mixture containing 60% alcohol and 40% chloroform.

- A solution containing 900g of silver nitrate in 100g of water.

8. Classify the following as a Pure substance (P) or Mixture (M).

- Air _____
- Sugar _____
- Dirt _____

9. Classify each of the following as a Mixture (M) or a Compound (C).

- | | |
|---|---|
| a. Alcohol, $\text{CH}_3\text{CH}_2\text{OH}$ _____ | d. Baking soda, NaHCO_3 _____ |
| b. A pizza _____ | e. CH_3OH in H_2O _____ |
| c. Soda pop _____ | f. Iced Tea _____ |

10. In an aqueous solution of calcium chloride, what is the solvent and what is the solute?

Solvent: _____

Solute: _____