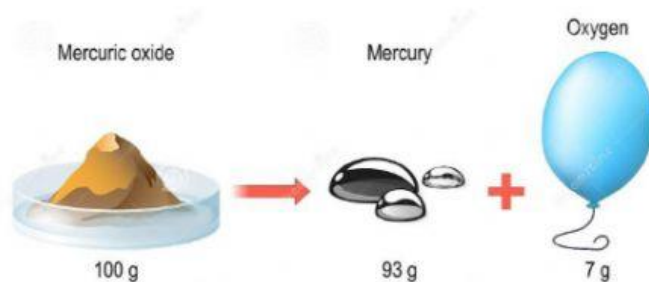## Conservation of Mass

Antoine Lavoisier was a French chemist who did most of his work between 1772-1786.

His experiments led to what is currently known as The Law of Conservation of Mass.

This law states that mass can neither be created nor destroyed. It can only be converted from one form to another.

Instructions: Examine the data for each of the following combustion experiments and answer the questions based on analysis of the data.

EXPERIMENT #1

REACTANT(S)   **PRODUCT(S)**

Magnesium + Oxygen ------> Magnesium Oxide

48.6 g   +   32.0 g -----> 80.6 g

a. What is the mass of the product?

b. What is the total mass of reactants?

c. Does this experimental data support the Law of Conservation of Mass?

EXPERIMENT #2

Based on the Law of Conservation of Mass, predict the minimum amount of magnesium that will react with all 16.0 grams of oxygen to produce 40.3 grams of magnesium oxide.

REACTANT(S)   **PRODUCT(S)**

Magnesium + Oxygen ------> Magnesium Oxide

     g   + 16.0 g -----> 40.3 g

EXPERIMENT #3

Assuming that magnesium and oxygen will react completely with one another, predict the mass of magnesium oxide that will be produced.

REACTANT(S)   **PRODUCT(S)**

Magnesium + Oxygen ------> Magnesium Oxide

12.2 g   + 8.0 g ----->   g

EXPERIMENT #4

Predict the mass of oxygen that will be left over after the reaction of 48.6 grams of magnesium with 50.0 grams of oxygen.

REACTANT(S)   **PRODUCT(S)**

Magnesium + Oxygen ------> Magnesium Oxide + Oxygen

48.6 g   + 50.0 g -----> 80.6 g   +   g