

Laws of Mass Conservation, Definite Proportions, and Multiple Proportions

1. State the Law of Mass Conservation:

2. State the Law of Definite Proportions:

3. State the Law of Multiple Proportions:

4. Two compounds that contain sulfur and oxygen have the following percent composition by mass.

Compound 1: 50.1% S and 49.9% O

Compound 2: 40.1% S and 60.0% O

Show the law of multiple proportions is followed. What is the formula of the second compound if the formula of the first compound is SO_2 ?

5. Solid sodium bicarbonate, NaHCO_3 , is heated to form solid sodium carbonate, Na_2CO_3 , liquid water, and carbon dioxide gas. If 336.02 g of sodium bicarbonate was heated, and 36.04 g of water and 211.98 g sodium carbonate are formed, how much carbon dioxide gas was formed? Which law is followed here?