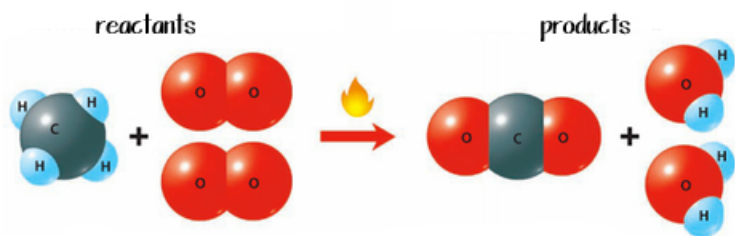


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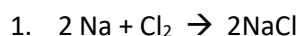
Identifying Reactants and Products/Law of Conservation of Mass



“Law of Conservation of Mass”-

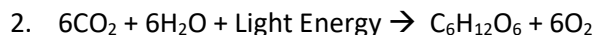
- Matter cannot be created or destroyed.
- Mass of reactants = Mass of products
- # of atoms in reactants = # of atoms in products

Identify the reactants and products in the following examples. Hint: Reactants → Products



Reactants: _____

Products: _____



Reactants: _____

Products: _____

3. When crystalline $\text{C}_6\text{H}_{12}\text{O}_6$ is burned in oxygen, carbon dioxide and water vapor are formed.

Reactants: _____

Products: _____

4. When lithium hydroxide pellets are added to a solution of sulfuric acid, lithium sulfate and water are formed.

Reactants: _____

Products: _____

5. When baking soda and vinegar are added together, water, carbon dioxide and salt are formed.

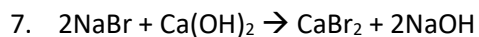
Reactants: _____

Products: _____

6. Acid rain is formed when rain water mixes with sulfur dioxide gas.

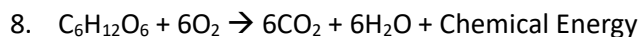
Reactants: _____

Products: _____



Reactants: _____

Products: _____



Reactants: _____

Products: _____

9. HCl and NH_3OH are made when water is added to NH_3Cl .

Reactants: _____

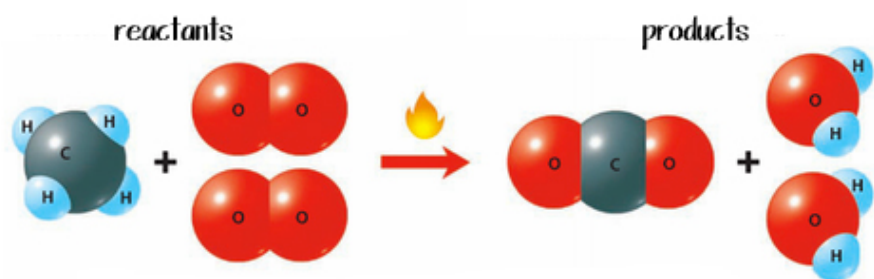
Products: _____

10. When lead nitrate is added to sodium chloride a white precipitate is formed.

Reactants: _____

Products: _____

Use the picture below to answer questions 11-13 below:



11. How many Oxygen (O) ATOMS are in the reactants? _____ products? _____
12. How many Hydrogen (H) ATOMS are in the reactants? _____ products? _____
13. How many Carbon (C) ATOMS are in the reactants? _____ products? _____

Solve each of the following... remember the law of conservation of mass: Mass of reactants=Mass of products

14. A 10.0 g sample of magnesium reacts with oxygen to form 16.6 g of magnesium oxide. How many grams of oxygen reacted?

15. From a laboratory process designed to separate water into hydrogen and oxygen gas, a student collected 10.0 g of hydrogen and 79.4 g of oxygen. How much water was originally involved in the process?

16. A student carefully placed 15.6 g of sodium in a reactor supplied with an excess quantity of chloride gas. When the reaction was complete, the student obtained 39.7 g of sodium chloride. How many grams of chloride gas reacted?

17. A 3.5 kg iron shovel is left outside through the winter. The shovel, now orange with rust, is rediscovered in the spring. Its mass is 3.7 kg. How much oxygen combined with the iron?

18. When 5.0 g of tin reacts with hydrochloric acid, the mass of the products, tin chloride and hydrogen, totals 8.1 g. How many grams of hydrochloric acid were used?

19. A student adds 15g of baking soda to 10 g of acetic acid in a beaker. A chemical reaction occurs and a gas is given off. After the reaction, the mass of the products remaining in the beaker is 23 g. Has mass been conserved in this reaction? Explain.

20. Hydrogen and oxygen react chemically to form water. How much water would form if 14.8 grams of hydrogen reacted with 34.8 grams of oxygen?

Extra credit. In a flask, 10.3 g of aluminum reacted with 100.0 g of liquid bromine to form aluminum bromide. After the reaction, no aluminum remained and 8.5 grams of bromine remained unreacted. How many grams of bromine reacted? How many grams of compound were formed?