Law of conservation mass simple

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The law of conservation of mass states that mass within a closed system remains the same over time. Discover more about the law of conservation of mass, including its importance, equations, and some examples of this law in action.

The law of conservation of mass states that

“The mass in an isolated system can neither be created nor be destroyed but can be transformed from one form to another”.

According to the law of conservation of mass, the mass of the reactants must be equal to the mass of the products for a low energy thermodynamic process.

It is believed that there are a few assumptions from classical mechanics which define mass conservation. Later the law of conservation of mass was modified with the help of quantum mechanics and special relativity that energy and mass are one conserved quantity. In 1789, Antoine Laurent Lavoisier discovered the law of conservation of mass.

Law of conservation of mass can be expressed in the differential form using the continuity equation in fluid mechanics and continuum mechanics as:

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Q1. 10 grams of calcium carbonate (CaCO3) produces 3.8 grams of carbon dioxide (CO2) and 6.2 grams of calcium oxide (CaO). Represent this reaction in terms of law of conservation of mass.Ans: According to law of conservation of mass:Mass of reactants = Mass of products? 10 gram of CaCO3 = 3.8 grams of CO2 + 6.2 grams of CaO10 grams of reactant = 10 grams of products

Hence, it is proved that the law of conservation of mass is followed by the above reaction.

Why is there no change in mass during chemical reactions?

During a chemical reaction, atoms are neither created nor destroyed. The atoms of the reactants are just rearranged to form products. Hence, there is no change in mass in a chemical reaction.

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