

Name : Date :

Law of Conservation of Mass Worksheet

1. Define the law of conservation of mass.

2. Why does the law of conservation of mass apply only to closed systems?

3. The mass of the reactants and the products are given in the table below. With the help of the law of conservation of mass, fill out the missing information:

Reactant(s)		Product(s)	
H ₂	O ₂	H ₂ O	
3.4g	10g		
CH ₄	O ₂	CO ₂	H ₂ O
12.2g		16.2g	20g
HgO		Hg	O ₂
23.6g		10.6g	
Li	O ₂	Li ₂ O	
	5.7g	24.6g	
Al(OH) ₃		Al ₂ O ₃	H ₂ O
31.5g			9.7g
C ₃ H ₆	O ₂	CO ₂	H ₂ O
18.9g		14.4g	15.6g

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Answers

1. Define the law of conservation of mass.

The law of conservation of mass states that mass is neither destroyed nor created during a chemical reaction. This means that the reactants' mass will equal the mass of the products after a chemical reaction occurs within a closed system.

2. Why does the law of conservation of mass apply only to closed systems?

In an open system, the products may change their state of matter, making it appear that the overall mass has changed. Also, energy like heat, radiation, or work escaping may also affect the mass but is generally too small to have a significant change in the result.

3. The mass of the reactants and the products are given in the table below. With the help of the law of conservation of mass, fill out the missing information:

Reactant(s)		Product(s)	
H ₂	O ₂	H ₂ O	
3.4g	10g	13.4g	
CH ₄	O ₂	CO ₂	H ₂ O
12.2g	14g	16.2g	20g
HgO		Hg	O ₂
23.6g		10.6g	13g
Li	O ₂	Li ₂ O	
18.9g	5.7g	24.6g	
Al(OH) ₃		Al ₂ O ₃	H ₂ O
31.5g		21.8g	9.7g
C ₃ H ₆	O ₂	CO ₂	H ₂ O
18.9g	11.1g	14.4g	15.6g