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LANGUAGE OF CHEMISTRY

SUBJECT-CHEMISTRY

CHAPTER NO- 5

Chemical Equations- Steps in writing a chemical equation, Need for balancing a chemical equation.

PERIOD-3

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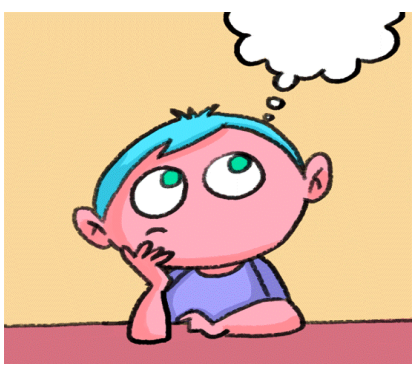
LEARNING OBJECTIVE

Students will be able

- Familiarize with the steps of writing a chemical equation.
- Sensitize the concept with examples.



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CHEMICAL EQUATIONS

- A Chemical equation is a symbolic representation of a chemical reaction using symbols and formulae of the reactants and the products formed in the reaction.
- The chemical reaction can be written both by word form or statement form or in the form of symbols.
- For example, Carbon + Oxygen——————→ Carbon dioxide (word form)
- $C + O_2$——————→ CO_2 (Symbolic form)

STEPS INVOLVED IN WRITING A CHEMICAL EQUATION

- Write the symbols or the formula of the reactants on the left side, with a (+) sign between them if they are two or more than two.
- Write the symbols or the formula of the products on the right-hand side, with a (+) sign between them if they are two or more than two.
- Put the sign of an arrow (→) in between the reactant side and the product side.
- Represent the reactants and the products in their molecular form.

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Now Consider this Example: -

- Reaction between Zinc oxide and carbon to form zinc and Carbon monoxide
- Zinc Oxide + Carbon ----------→ Zinc + Carbon Monoxide [Word equation]
- ZnO + C ----------→ Zn + CO [symbolic form]

Need for Balancing a chemical equation

- A chemical equation must be balanced in order to satisfy the Law of Conservation of Mass or Matter.
- The Law of Conservation of Mass states that , during a chemical Reaction the total mass of the reactant is always equal to the total mass of the product.

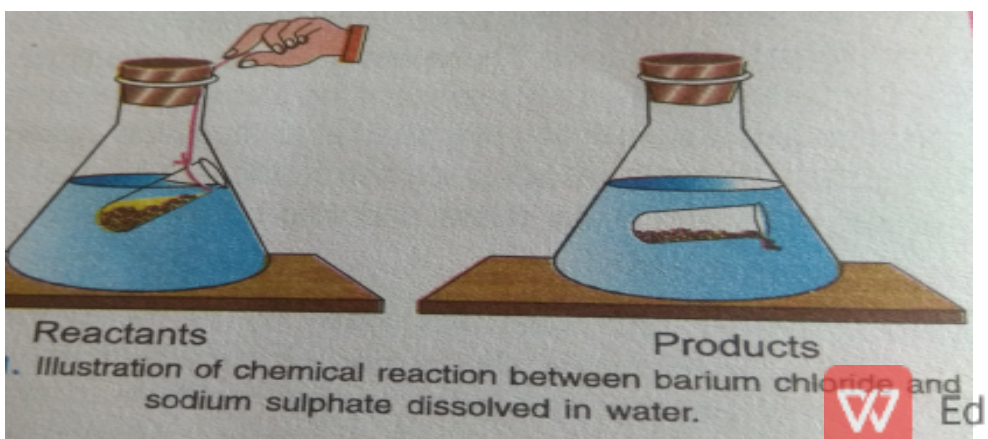
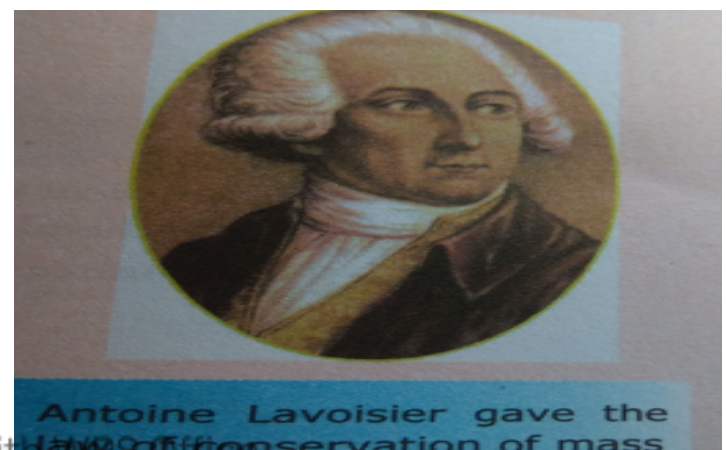


Illustration of chemical reaction between barium chloride and sodium sulphate dissolved in water.


Antoine Lavoisier gave the law of conservation of mass

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SIGNIFICANCE OF A BALANCED EQUATION

- It shows which substances are taking part in the chemical reaction and what are the products formed.
- It shows both the number of atoms and the number of molecules in the reaction
- It satisfies the Law of Conservation of Mass.
- It makes the study of chemistry universally standardized.

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HOME ASSIGNMENT

- Exercise-Q7 & Q8
- Write the equations in the symbolic form :-

a) Carbon + Oxygen----------→Carbon Dioxide

b) Hydrogen + chlorine----------→ Hydrogen Chloride

c) Magnesium + Oxygen ---------→ Magnesium oxide

THANKING YOU

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