

Chemistry Practical Class 9 To carry out the reaction of Sodium sulphate with barium chloride in the form of their solutions in water and classify them as physical or chemical changes Viva Questions with Answers

Q1. Define Physical Changes.

Answer. A physical change occurs when there is no change in the composition of a substance and no change in the chemical nature of the substance.

The interconversion of state occurs during physical change.



Q2. Define Chemical Changes.

Answer. It is a change that causes a change in the chemical properties of matter, resulting in the formation of a new substance. As an example, consider the burning of oil or fuel.

Heat is evolved or taken in, the formation of bubbles, gas, and fumes, as well as a change in the colour of the reactants, can take place when they form a product.

Reactants \rightarrow Products



Q3. What is a Chemical Reaction?

Answer. A chemical reaction is a chemical change in which the bonds are broken within reactant molecules, and new bonds are formed within product molecules in order to form a new substance. A chemical reaction can be represented by a chemical equation, which specifies the number and type of atoms involved, as well as their arrangement into molecules or ions. The element symbols are used as shorthand notation for the elements in a chemical equation, with arrows indicating the direction of the reaction.

Q4 How many types of chemical reactions are there?

Answer. There are 4 types of chemical reactions. They are as follows-

- Combination Reaction
- Decomposition Reaction
- Displacement Reaction
- Double Displacement Reaction

Q5. Define Combination reaction.

Answer. A reaction in which two or more reactants combine to form a single product is known as a combination reaction. It takes the form of $X + Y \rightarrow XY$

Combination reaction is also known as a synthesis reaction.

Example of combination reaction: $2\text{Na} + \text{Cl}_2 \rightarrow 2\text{NaCl}$

Q6. Define Decomposition Reaction.

Answer. A reaction in which a single compound breaks into two or more simpler compounds is known as a decomposition reaction.

It takes the form of $XY \rightarrow X + Y$

A decomposition reaction is just the opposite of a combination reaction.

Example of a decomposition reaction: $\text{CaCO}_3 \rightarrow \text{CaO} + \text{CO}_2$

Q7. Define Displacement Reaction.

Answer. A chemical reaction in which a more reactive element displaces a less reactive element from its aqueous salt solution. It takes the form $X + YZ \rightarrow XZ + Y$

It is also called a substitution reaction

Example of displacement reaction: $\text{Zn} + \text{CuSO}_4 \rightarrow \text{ZnSO}_4 + \text{Cu}$

Q8. Define Double Displacement Reaction.

Answer. A chemical reaction in which ions get exchanged between two reactants which form a new compound is called a double displacement reaction. It takes the form of $XY + ZA \rightarrow XZ + YA$

It is also called a metathesis reaction

Example of a double displacement reaction:

$\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$

Q9. What is the formula for barium chloride?

Answer. The formula of barium chloride is BaCl_2 .

Q10. What is the formula of sodium sulphate?

Answer. The formula of sodium sulphate is Na_2SO_4 .

Q11. What happens when barium chloride and sodium sulphate are made to react together?

Answer. When barium chloride is made to react with sodium sulphate, barium sulphate and sodium chloride are formed.

Q12. Give the reaction for the reaction.

Answer. The equation for the reaction is $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$.

Q13. What change is observed in the reaction?

Answer. A white precipitate is formed on keeping the test tube on the stand for some time.

Q14. What is the colour of the sodium chloride?

Answer. The sodium chloride formed is colourless.

Q15. What can you infer from reaction?

Answer. The reaction of Na_2SO_4 (aq) and BaCl_2 (aq) produces an insoluble white precipitate of BaSO_4 , indicating that it is a double displacement reaction.

Q16. What type of reaction is it?

Answer. It is a type of Double - displacement reaction.

Q17. State the reason for the type of reaction?

Answer. The reaction of SO_4^{2-} and Ba^{2+} produces a white precipitate of BaSO_4 in this reaction. The other product formed is sodium chloride, which is still present in the solution. Such reactions in which ions are exchanged between two reactants are referred to as double displacement reactions.

Q18. Is the reaction a chemical change or a physical change?

Answer. The reaction is a chemical change because new products that are formed are different from the reactants.

Q19. What does formation of white precipitate mean?

Answer. The formation of white precipitate indicates that it is a Double - displacement reaction.

Q20. List some precautions that needs to be taken while performing the experiment.

Answer. Some precautions that needs to be taken while performing the experiment are-

- Use only a small amount of the chemicals.
- After you've finished the experiment, wash your hands with soap.

