

ACTIVITY NO-3

ARE SALTS ALSO ACIDIC OR BASIC IN NATURE?

Subject	SCIENCE
Class	X
Chapter/Unit	Acids, Bases and Salts
Topic	Salts
Time	45 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

To analyze the acidic, basic and neutral nature of salts.

Skills:

Analyzing and Applying

What I have to do?

To analyze the acidic, basic and neutral nature of the given salts by checking their pH using a pH paper.

What do I require?

Dry salt samples of sodium chloride, zinc sulphate, copper sulphate, sodium acetate and sodium carbonate, distilled water, 5 test-tubes, 5 droppers, universal pH paper strips and standard colour chart.

What do I need to know?

Acids react with bases to form salt and water. This reaction is also known as Neutralization Reaction.

➤ Teacher's Activity

Teacher will:

1. recapitulate the concept of Neutralization reaction.
2. brief the activity, divide the children in groups of 5 each and make necessary arrangements for the activity.

How will I proceed?

➤ Student's Activity

1. Take small amount of sodium chloride, zinc sulphate, copper sulphate, sodium acetate and sodium carbonate in 5 clean and dry test-tubes and label them as A, B, C, D and E respectively.
2. Add small amount of distilled water to the salts taken in the 5 test-tubes and mix the contents.
3. Take a strip of Universal pH indicator and cut it into 5 pieces.
4. Put 1-drop of each salt solution on each of the cut pieces and analyze the pH of the solution using the standard colour chart.
5. Record your observations and try to identify the acid or base used to form the salt.

What have I observed?

S. No.	Salt	pH	Acid used	Base used
1	sodium chloride			
2	zinc sulphate			
3	copper sulphate			
4	sodium acetate			
5	sodium carbonate			

What have I learnt?

Salts of a strong acid and a strong base are neutral with pH value of _____. On the other hand, salts of a strong acid and weak base are acidic with pH

value_____than 7 and those of a strong base and weak acid are basic in nature, with pH value_____ than 7.

What am I curious to learn?

- Let us take samples of salts like aluminium chloride, potassium carbonate, potassium acetate and check their pH value. What do you infer about the nature of the salts?
- Let us add equal amounts of sodium hydroxide to hydrochloric acid in a test-tube. Mix the contents well and check the pH of the resultant mixture. Which type of reaction is this? What will be the product formed? What can be inferred about the nature of the product formed?

Let me evaluate myself

Q1. What do you understand by the term pH?

Q2. Why is the Neutralization reaction called so?

Q3. Write down the chemical equations for the reactions taking place in the above activity.

Q4. How is pH related to hydrogen ion concentration?

Q5. Ritika added small amount of Magnesium hydroxide is added to dil. HCl taken in test-tube **A** and CH_3COOH in test-tube **B**. Predict the nature of the salt formed in the test-tubes **A** and **B** using a Universal Indicator.
