

Lesson Plan – 9

Subject: Chemistry

Topic: Acids & Bases

Sub – Topic: Nature of the Compound

Grade: 7

Duration: 30 mins

Aim:-

To identify the nature of the compound formed in the reaction of magnesium with water.

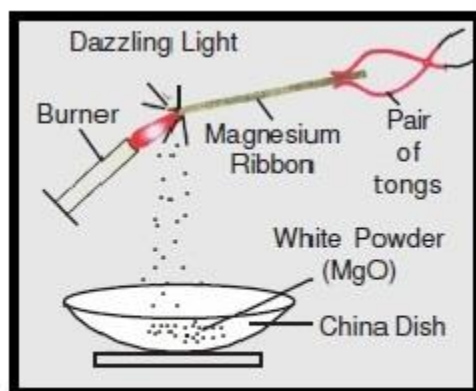
Material required:-

1. Magnesium ribbon
2. Test tube
3. Test tube holder
4. Beaker
5. Red and blue litmus paper
6. Kerosene burner/ spirit lamp.

Principle: - Acid turns blue litmus to Red and Red litmus to blue.

Procedure:-

- Take a small piece of magnesium ribbon.
- Clean the surface of magnesium ribbon with sand paper.
- Take this piece of magnesium ribbon in a test tube and add some water to it.
- Add a red litmus paper to it.
- Heat test tube for few minutes on low flame.
- Are litmus paper changes its color? You will see that litmus paper is turned blue in color.



**Chemical Reaction -
Burning of Mg ribbon in the air.**

Precaution:-

- Hydrogen gas is explosive, special care should be taken.
- The surface of magnesium ribbon should be properly cleaned with sand paper.
- The white ash of magnesium oxide should not be touched.

- Magnesium ribbon should be held by a pair of tongs while burning it.
- It is better to use sun glasses to protect eyes from dazzling light of burning magnesium ribbon.

Conclusion:-

- Magnesium reacts with water to form magnesium hydroxide and oxygen gas.

$$\text{Mg} + 2\text{H}_2\text{O} \longrightarrow \text{Mg}(\text{OH})_2 + \text{H}_2$$
- Magnesium hydroxide basic in nature.
- So, magnesium reacts with water to form a basic compound that turns red litmus to blue.

Assessment:

1. Complete the sentence by filling in the missing words.
pH is a measure of the ratio of
a. _____ ions to hydroxide b. _____ in a solution.
2. Explain the difference between a 'dilute' acid and a 'weak' acid.
3. From the following diagram, give the pH of solutions of:
a. hydrochloric acid b. distilled water c. baking soda d. urine e. soapy water
4. Is a solution with a pH of 2 a stronger or a weaker acid than a solution with a pH of 5?
5. Complete the following table.

S.No		Acid solution	Alkaline solution	Neutral solution
1	Color with red litmus paper			
2	Color with blue litmus paper			

6. Explain why Universal Indicator is more useful for measuring pH than litmus indicator is.
 - a. In terms of hydrogen ions and hydroxide ions, explain why a solution of vinegar is an acid.
 - b. In terms of hydrogen ions and hydroxide ions, explain why a solution of ammonia is a base.
 - c. In terms of hydrogen ions and hydroxide ions, explain why a solution of pure water is neutral.
7. Explain why it would not be a good idea to use a solution of sodium hydroxide to neutralize stomach acid.
8. Mark was suffering from indigestion. He decided to drink a glass of lemonade to help get rid of the indigestion. Explain why lemonade would not help indigestion.
9. Explain whether or not drinking a glass of water with a teaspoon of baking soda dissolved in it would:
 - a. help prevent dental cavities b. help relieve heartburn