



**BAL BHARATI PUBLIC SCHOOL, PITAMPURA, DELHI – 110034**

**Class- 10**

**Chemistry**

**Laboratory Activity**

**Week- 9<sup>th</sup> Nov to 13<sup>th</sup> Nov'20**

**No. of blocks- 1**

**Guidelines**

Dear Students

- Refer to the given video links and observe.
- Record the given experiment in the Chemistry practical file.

**Topic:** Laboratory Activity

**Learning outcomes**

Each student will be able to:

- observe different chemical reactions
- discuss the properties of bases
- acquire skills to perform experiments by observing videos and simulation

**Lesson Development**

**Aim**

To study the properties of bases (NaOH) by their reaction with

1. Litmus solution(Blue/Red)
2. Zinc metal(Zn)
3. Solid sodium carbonate(Na<sub>2</sub>CO<sub>3</sub>)

**Materials Required**

Dil. NaOH, test tubes, test tube holder, test tube stand, red and blue litmus solutions, zinc metal, sodium carbonate and droppers.

**Links for the Experiment**

<http://amrita.olabs.edu.in/?sub=73&brch=3&sim=6&cnt=14>

<http://amrita.olabs.edu.in/?sub=73&brch=3&sim=6&cnt=72>

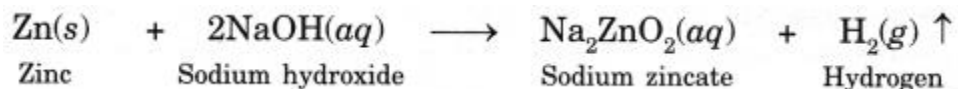
**Theory**

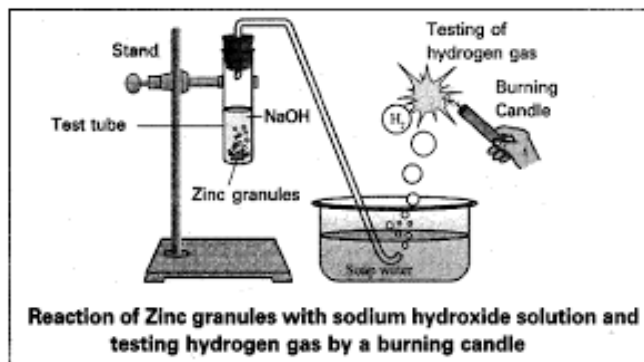
**1. Action of litmus on bases**

NaOH is a base. Bases turn red litmus blue and do not affect blue litmus.

**2. Reaction between Zinc metal and NaOH**

On reaction with zinc metal, NaOH forms sodium zincate and hydrogen gas is liberated. The hydrogen gas burns with a pop sound.





### 3. Reaction between sodium carbonate and a base

NaOH does not react with solid or aqueous  $\text{Na}_2\text{CO}_3$ .

#### Observation Table

S.No.	Experiment	Observation	Inference
1.	<p><b>Litmus test</b></p> <p>Take about 1 mL of NaOH in two test tubes and mark them as 'A' and 'B'. Put both the test tubes in a test tube stand. Now, add blue litmus in test tube 'A' and red litmus in test tube 'B'.</p>	<p>Red litmus turns blue.</p> <p>No change in the colour of blue litmus.</p>	NaOH has basic character.
2.	<p><b>Reaction with Zn metal</b></p> <p>Take a test tube and add zinc granules to it. Add NaOH solution to it and place a cork with a fine jet on the mouth of the test tube.</p> <p>Bring a lighted matchstick near the mouth of the fine jet and observe.</p>	<p>Bubbles of hydrogen gas are formed and gas evolves.</p> <p>A pop sound is obtained.</p>	Zn reacts with dil. NaOH and liberates hydrogen gas.
3.	<p><b><math>\text{Na}_2\text{CO}_3</math> test</b></p> <p>Take a small amount of sodium carbonate in a test tube and add sodium hydroxide solution.</p>	No change is observed.	NaOH does not react with $\text{Na}_2\text{CO}_3$ .

#### Result

1. NaOH turns red litmus blue.
2. On reaction with Zinc metal, it releases  $\text{H}_2$  gas.
3. It does not react with  $\text{Na}_2\text{CO}_3$ .

**Precautions**

1. Handle NaOH with care.
2. Use small quantities of chemicals.
3. Zinc granules should be clean.
4. Wash your hands properly after completing the experiment.

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