

Physical Science 9 Lab

BASES

PURPOSE: to study some of the major properties of bases.

BACKGROUND: a base is a compound that releases OH^- ions into water. It is the OH^- ion that is responsible for the properties of bases.

MATERIALS: NaOH (sodium hydroxide solution), cotton and wool cloth, magnesium, distilled water, NH_4OH (ammonium hydroxide solution), eight indicators

PROCEDURES:

1. Place 2 ml of NaOH into each of two testtubes. Add a small piece of cotton cloth to one testtube and wool to the other. Push down with the stirstick until the cloth is in the liquid. Allow to sit for 15-20 minutes. **Record your observations below.**
2. Place a small piece of red cabbage into a small beaker. Add just enough NaOH to cover the piece. Let stand for 5-10 minutes. **Record your observations below.**
3. Place a small piece of each of the four indicator papers on separate circles and place a small amount of NaOH on each piece. **Record your observations below.**
4. Place 1 ml of blueberry juice, cherry juice, and turmeric solution into separate testtubes. Add 1 ml of NaOH to each. **Record your observations below.**
5. Put a few drops of NaOH on your fingers. Rub your fingers together and describe the feel. **Record your observations below.**

6. Place about two ml of NaOH solution into a test tube and add a piece of magnesium metal. Record your observations below.

7. Place 1 ml of HCl into a 100 ml beaker. Dilute it with 20 ml of distilled water. Add 1/2 ml of methyl orange. Record your observations below.

Start adding NH_4OH to the beaker about 1/2 ml at a time, stirring the contents each time. Continue adding (and keep a count of) the NH_4OH until there is a permanent color change. When this happens you will have neutralized the acid with a base. Record the number of ml of NH_4OH needed to neutralize 1 ml of HCl.

Lab Report Format: Add a subsection called BASES LAB to your acids-bases labs report and answer the following questions:

Refer to Procedure #1 to answer the following questions:

1. Would a laundry detergent containing a base be safe for washing cotton clothes? wool clothes? Explain using your observations.

Refer to Procedure #2-4 to answer the following question:

2. Which of the following are indicators of bases?

<input type="checkbox"/> Phenolphthalein	<input type="checkbox"/> Methyl Orange
<input type="checkbox"/> Blue Litmus	<input type="checkbox"/> Red Litmus
<input type="checkbox"/> Red Cabbage	<input type="checkbox"/> Blueberry Juice
<input type="checkbox"/> Cherry juice	<input type="checkbox"/> Turmeric solution

Refer to Procedure #6 to answer the following question:

3. Do bases corrode metals?

Refer to Procedure #7 to answer the following questions:

4. How many ml of NH_4OH did it take to neutralize the HCl?