**The pH of Common Acids and Bases**

Questions: What is the pH of carbonated beverage and other common household solutions?

Safety:

Ammonia and bleach and caustic substances. Use them with caution and always wear safety goggles.

If you spill any solution on yourself, rinse cold water over the area.

Apparatus

Test tube rack

Test Tubes (9)

Eye droppers

Beakers

Litmus Paper

Materials:

Bleach

Ammonia

Diet Pepsi

Sunlight Dish Soap

Rain Water

Distilled Water

Milk of Manganese

Lemon Juice

Vinegar

Design:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Household Solution | Estimated pH | Cabbage Indicator Color | Red Litmus | Blue Litmus | Approximate pH Range | Acid or Base |
| Bleach |  |  |  |  |  |  |
| Lemon Juice |  |  |  |  |  |  |
| …… |  |  |  |  |  |  |

Procedure:

1. On a lined sheet of paper, create a table (using a ruler) with 10 rows and 7 columns. Estimate the pH of each of the 9 solutions
2. Obtain a test tube rack with 9 test tubes, a beaker with an eye dropper and the cabbage juice solution, and four strips of red and blue litmus paper.
3. Fill each test tube 1/3 full with one of the nine household solutions.
4. Use a medicine eye dropper to add 5-7 drops of cabbage juice indicator to your first solution. Record the color and the approximate pH of the solution.
5. Use a glass stirring rod to transfer a few drops of the solution of a piece and red and blue litmus paper. Only use one side of the litmus paper and the other for a difference solution. Record your results.
6. Repeat steps 4 and 5 for all nine solutions.
7. Once complete, rinse all equipment used. Use a brush to properly rinse all test tubes. Place test tubes upside down in the rack to dry. Wash your hands. Fill in your chart and complete the following questions.

Questions:

1. List your solutions tested in order from most acidic to most basic. Which solution(s) were neutral?
2. What color would phenolphthalein turn in the bleach solution? What about the lemon juice solution?
3. What color should a neutral solution be in bromothymol blue?
4. Check your lab to ensure you have a title, lab question, material list, table, and all three questions answers.