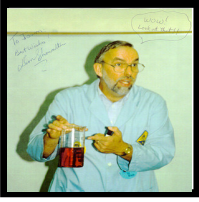


CHEMISTRY LAB

Acids and Bases

Common Household Chemicals

MATERIALS

beakers for water and indicator

red cabbage juice

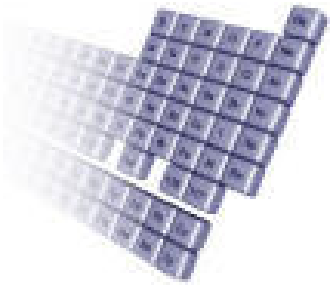
24-well plate

pipettes

toothpicks

various household products and foods, in solution

SAFETY GOGGLES



PROCEDURE

Chemists use indicators to test whether a substance is an acid or a base; indicators work by turning a distinctive color in the presence of an acid or base. Natural indicators can be made from elderberries, blackberries, cherries, or red cabbage—these contain anthocyanins, which have a red or purple pigment. Anthocyanins belong to a group of chemical compounds called flavonoids.

You will be using red cabbage indicator to test several household products to determine if there is a pattern to the colors created by adding the indicator. Once a pattern is discerned, you will write a statement hypothesizing the nature of classes of chemicals.

READ ALL INSTRUCTIONS BEFORE PROCEEDING

1. In one well of the 24-well plate, add ten drops of the red cabbage juice using one of the pipettes. Record the color of the juice on the data table.

2. In a separate well, place five to ten drops of the test material solution. Record the name and color of the material (“beginning color”) on the data table.

3. Add five to ten drops of the red cabbage indicator to the test material in the well. Stir gently with a toothpick.

4. Record the color of the cabbage juice and solution mixture (“ending color”) on the data table. Use the scale below; you may also use combinations of colors. Write down other observations.

Red

Rose

SAFETY NOTE

Make sure to clean all materials well before, between, and after use. Chemicals that remain have the possibility of affecting observational data. Please wash hands immediately if contact with any chemical occurs. Mixing of chemicals is strictly prohibited and will result in a zero for this lab.

Rose

Purple

Blue

Green

Yellow

5. Rinse the well-plate thoroughly.

6. Repeat steps 2 through 5 with different substances.

7. When finished, analyze your data. Determine what large groups of materials you used (food, medicine, cleaners/soaps, etc.)

QUESTIONS

8. Write a paragraph stating your hypothesis about the acidity or basicity of each large group. Which are more basic? Which are more acidic?