SI Chemistry –Spring 2008 Household Chemicals Exploration

Is shampoo acidic or basic? How about orange juice, household ammonia, drain cleaner, toilet bowl cleaner, and pop? Do you know how to check the chlorine level in your swimming pool or fish tank? These questions can be easily answered by determining the substance's acidity or alkalinity with indicators.

Procedure:

1. Obtain the three samples that you brought from home from your teacher. Using a spot plate and disposable pipets, place 3-5 drops of each sample in its own cell. **Make sure you" keep track of" which solution is in each cell.**

2. Test each sample with both red and blue litmus paper. Based on the result, determine if the sample is acidic or basic.

3. Now add 1 or 2 drops of universal indicator to each cell. Observe. Record the color on in your lab notebook or on your tablet. Does the pH value match up with the results in step two? What are the possible pH values for acids? What are the possible pH values for bases?

3. Discard the waste in the sink and rinse the plate thoroughly with water.

Follow up:

a. Record your results on the white board in our classroom. Discuss with your colleagues the pH of their home chemical samples. Can you draw any conclusions about the pH of certain families of substances?

b. Why would it be beneficial for certain household chemicals to have acidic, neutral, or basic characteristics? Hint: What are the uses of these substances?

c. How does knowing the pH of substances allow you to make decisions on their safety of eating/drinking, contacting them on your skin, and/or using them for their marketed purpose?