

Investigation 38 : What is the pH of Household Items

Experimental Background

The purpose of this Laboratory investigation was to determine the pH values of an assortment of different household items, using three common tests for pH: Litmus Paper, a pH meter, and a Universal Indicator. A secondary goal for this investigation was to determine the strengths and weaknesses for each of these tests for determining pH.

pH, in the most literal sense, is a measure of the concentration of hydrogen ions (H^+) in a given solution. Solutions with a low pH, and a high H^+ concentration, are considered acidic, while solutions with a high pH, and thus a low H^+ concentration, are considered basic. Many household cleaning agents, such as bleach and detergent, are basic, and are good for breaking down dirt, oil, or stains. Other items, especially those related to food or cooking, such as lemon juice or vinegar, are acidic.

Apparatus

Figure 1. This image shows a spectrum of solutions of known pH, from 1 to 11, and the colors they exhibit when exposed to the universal indicator.