

# Acids, Bases, and pH

6th Period

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## 1 Purpose

The purpose of this experiment was to determine the pH of several solutions using indicators and pH paper.

## 2 Methods/Materials

The procedure for this lab contained a minor change from the original, in which 0.01 M HCl and 0.01 M NaCl were added to the chemicals to test. Other than this, the materials and procedures in this lab remain unchanged from the printout.

## 3 Conclusion

From this lab, the pH of a number of different chemicals was determined. The data taken from observing the color change in the indicators for the most part matched what was given by the pH paper, excluding NaCl. It is likely that the pH paper was misread or the person observing the indicators for that chemical was unknowingly colorblind. Many of the guesses taken on whether a chemical was an acid or a base were correct, most by chance, some by prior knowledge or deduced by the chemical's name.

## 4 Lab Questions

1.
  - (a) 1 M HCl
  - (b) 0.1 M HCl
  - (c) 0.01 M HCl
  - (d) Vinegar
  - (e) 1 M Acetic Acid
  - (f) 0.1 M Acetic Acid
  - (g) 7-Up
  - (h) Salt Solution
  - (i) Seltzer Water
  - (j) Dish Soap
  - (k) Milk of Magnesia
  - (l) 0.1 M  $NH_4OH$
  - (m) Bleach
  - (n) 1 M  $NH_4OH$
  - (o) 0.01 M NaCl
  - (p) 1 M NaOH
  - (q) 0.1 M NaOH
  - (r) Ammonia Cleaner
2.
  - (a) Acid = HCl, Base =  $Cl^-$
  - (b) Acid =  $HNaOH^+$ , Base = NaOH
  - (c) Acid =  $HN_4OH^+$ , Base =  $NH_4OH$
  - (d) Acid =  $CH_3COOH$ , Base =  $CH_2COOH^-$
  - (e) Acid =  $HNaCl^+$ , Base = NaCl