Acids and Bases

Objectives

- **Describe** four properties of acids.
- **Identify** four uses of acids.
- **Describe** four properties of bases.
- **Identify** four uses of bases.

I. Acids and Their Properties

A. Acids Have a Sour Flavor
Acids taste sour, and most acids are poisonous.

B. **Acids Change Colors in Indicators** A substance that changes color in the presence of an acid or base is an indicator.

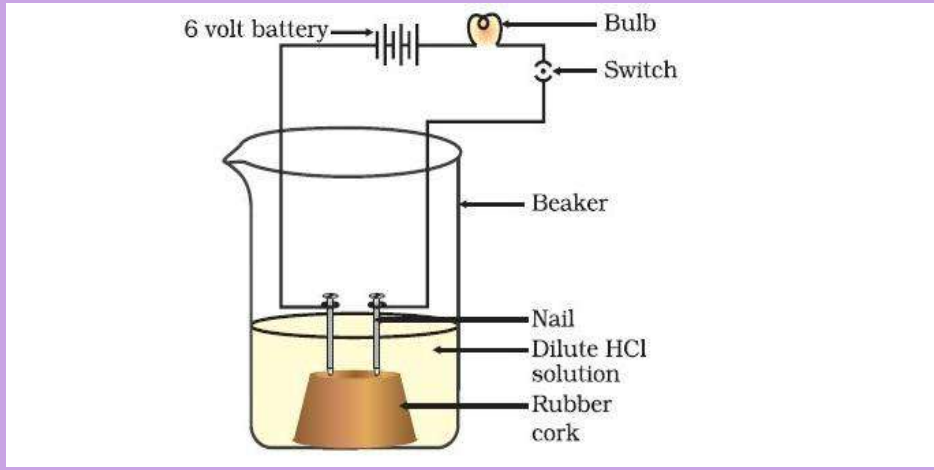
Bromthymol blue indicator

C. **Acids React with Metals**
Acids react with some metals to produce hydrogen gas.

Zinc reacting with HCl produces bubble of hydrogen gas

I. Acids and Their Properties

D. Acids Conduct Electric Current When acids are dissolved in water, they break apart and form ions in the solution. The ions make it possible for the solution to conduct an electric current.



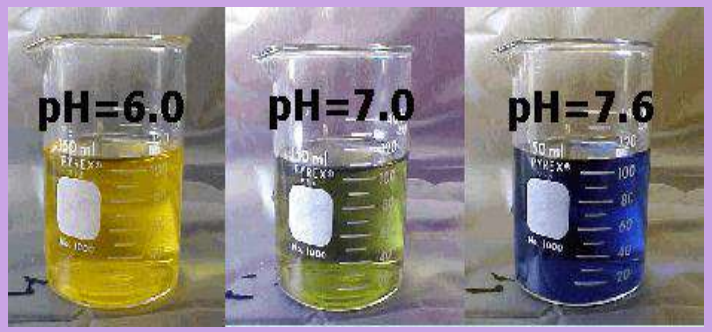
E. Uses of Acids Acids are used in many areas of industry and in homes. Sulfuric acid is the most widely made industrial chemical in the world. It is used to make many products, including paper, paint, detergents, and fertilizers.

Car batteries contain sulfuric acid.

II. Bases and Their Properties

A. Bases Have a Bitter Flavor and a Slippery Feel The properties of a base solution include a bitter taste and a slippery feel.

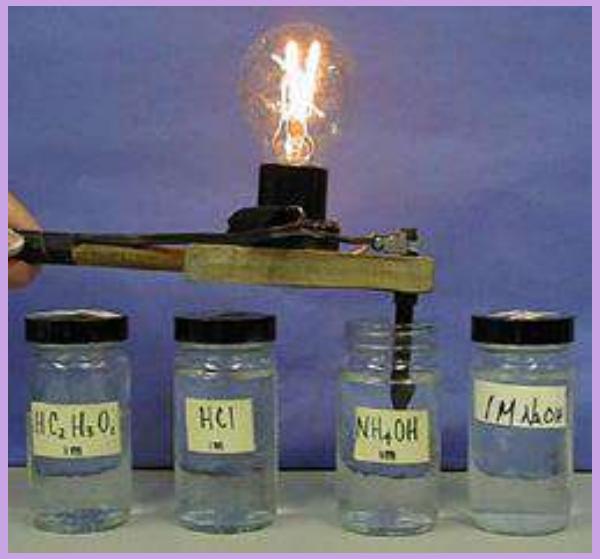
B. **Bases Change Color in Indicators** Like acids, bases change the color of an indicator.



Bases turn the bromthymol blue darker

II. Bases and Their Properties

C. Bases Conduct Electric Current Solutions of bases conduct an electric current because bases increase the number of hydroxide ions, (OH^-), in a solution.



NH_4OH is ammonium hydroxide.

D. **Uses of Bases** Like acids, bases have many uses. Sodium hydroxide is a base used to make soap and paper.

Acid and Base Properties

Acid Properties

When dissolved in water, acids

1. Conduct electricity
2. Have a sour taste
3. React with active metals to produce hydrogen gas
4. Change blue litmus paper to red
5. React with bases to neutralize their properties

Base Properties

When dissolved in water, bases

1. Conduct electricity
2. Have a bitter taste
3. Have a slippery feeling
4. Change red litmus paper to blue
5. React with acids to neutralize their properties