

Families of Chemical Compounds

I. Acids

A. Properties of Acids

- Sour to Taste
- Indicators - Litmus paper turns from blue to red, Phenolphthalein remains colorless.
- Corrodes metals
- Contains Hydrogen
- Produces positive hydrogen ions (H^+) when dissolved in water
- Proton donor

B. Common Acids

Name	Formula	Uses	Strength
Hydrochloric Acid	HCl	Cleaning metals, digesting food	Strong
Sulfuric Acid	H ₂ SO ₄	Manufacturing paints, plastics fertilizers.	Strong
Nitric Acid	HNO ₃	Removing tarnish, making explosives, making fertilizers	Strong
Carbonic Acid	H ₂ CO ₃	Carbonating beverages	Weak
Boric Acid	H ₃ BO ₃	Washing eyes	Weak
Phosphoric Acid	H ₃ PO ₄	Making fertilizers, and detergents	Weak
Acetic Acid	HC ₂ H ₃ O ₂	Making cellulose acetate used in fibers and films	Weak
Citric Acid	H ₃ C ₆ H ₅ O ₇	Making soft drinks	Weak

II. Bases

A. Properties of Bases

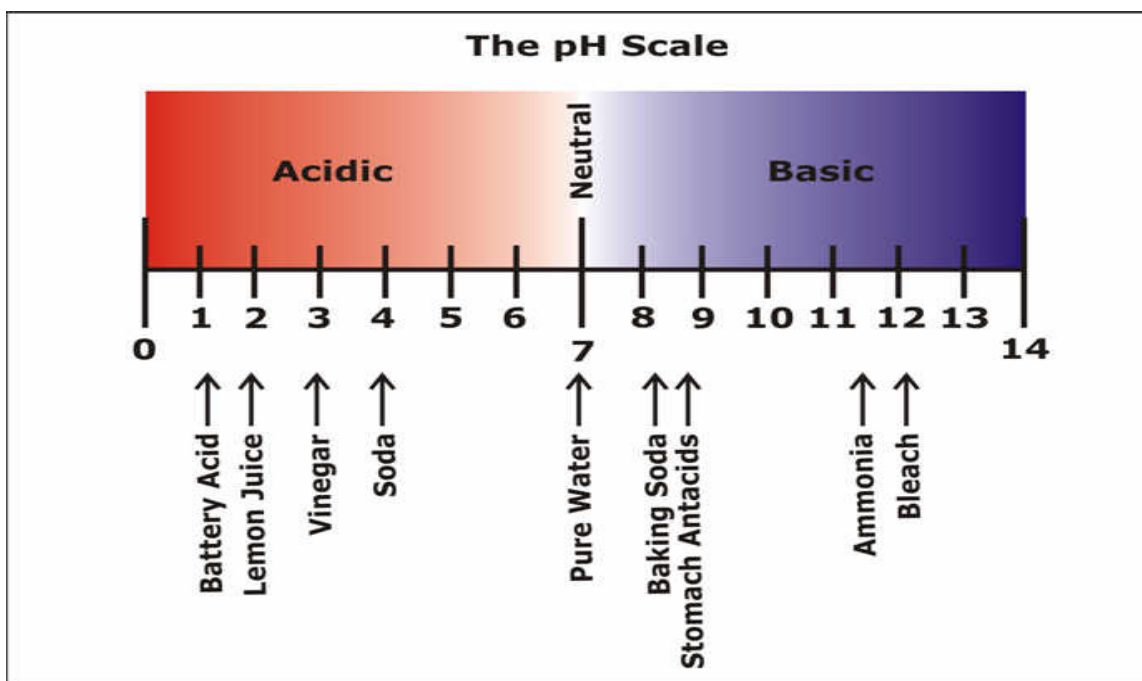
- Tastes bitter to taste
- Slippery to the touch

- Indicators - Litmus paper turns from red to blue, Phenolphthalein turns pink.
- Dissolves fats and oils
- Contains the hydroxide ion (OH^-)
- Proton acceptor

B. Common Bases

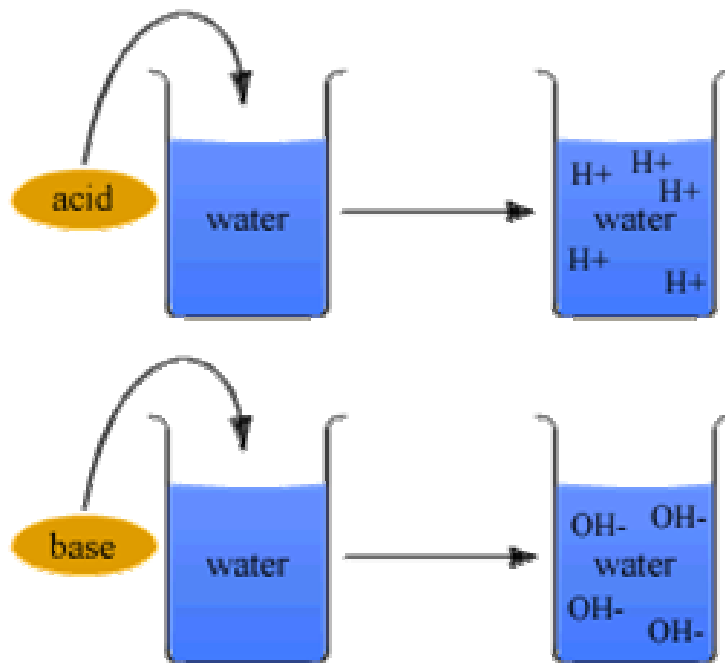
Name	Formula	Uses	Strength
Sodium Hydroxide	NaOH	Making soap, drain cleaner	Strong
Potassium Hydroxide	KOH	Making soft soap	Strong
Calcium Hydroxide	Ca(OH)_2	Leather production, making plaster	Strong
Magnesium Hydroxide	Mg(OH)_2	Antacid	Strong
Ammonium Hydroxide	NH_4OH	Household cleaner	Weak
Aluminum Hydroxide	Al(OH)_3	Antacid; deodorant	Weak

III. pH Scale



Define:

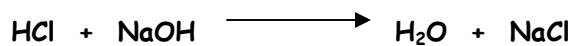
pH Scale -



Acid -

Base -

IV. Neutralization



Make an observation about the chemical equation above.

Define:

Neutralization -

V. Comparison - Acids vs. Bases

	Taste	Litmus Paper	Phenolphthalein	Ion	Proton acceptor/donor	pH	Sim./Diff.
Acids							
Bases							

Conclusion:

VI. Organic vs. Inorganic Compounds

Criteria	NaCl	C ₆ H ₁₂ O ₆
Elements Present		
# of Each Element		
Source		
Inorganic or Organic		
Compound or Molecule		

1. Define the following terms:

a. Inorganic Substance -

b. Organic Substance -