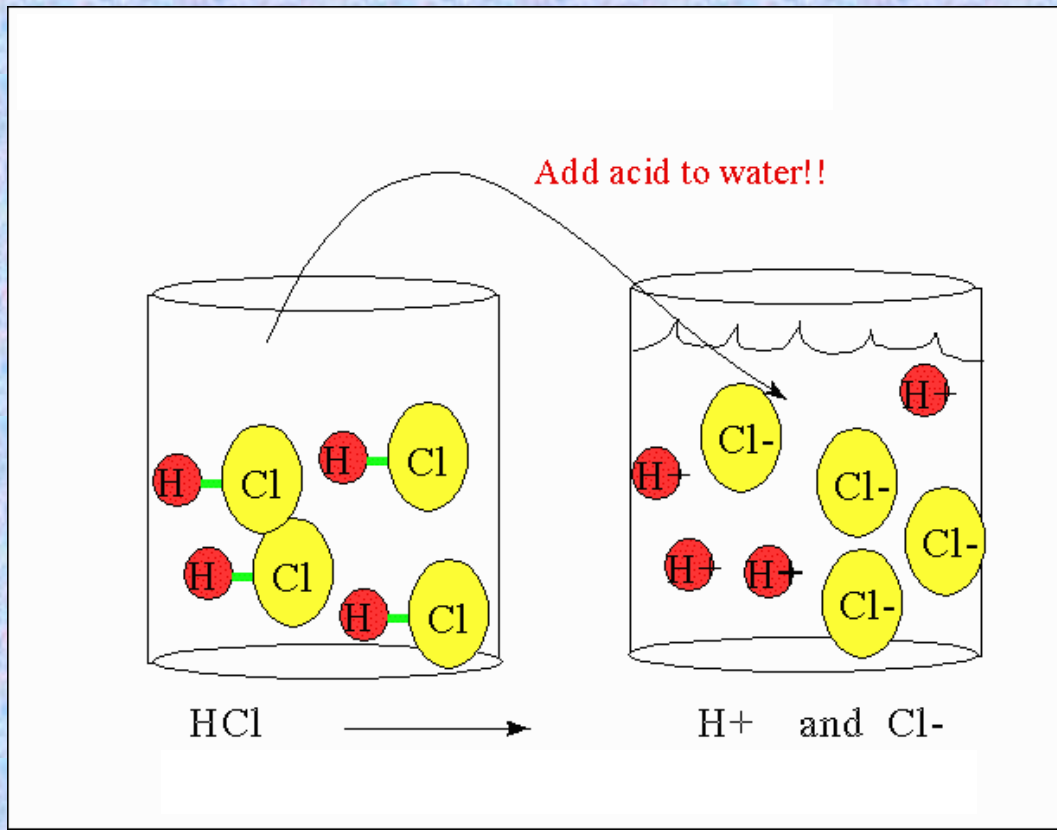


Acids and Bases

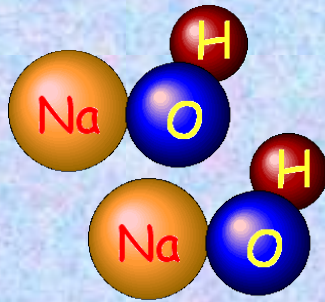
What are Acids

- Are compounds that add **hydrogen ions** to water

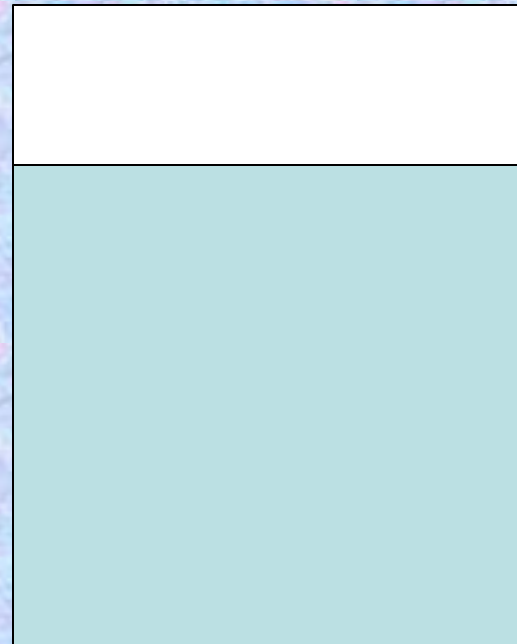


What are Bases

- Are compounds that add hydroxide ions to water

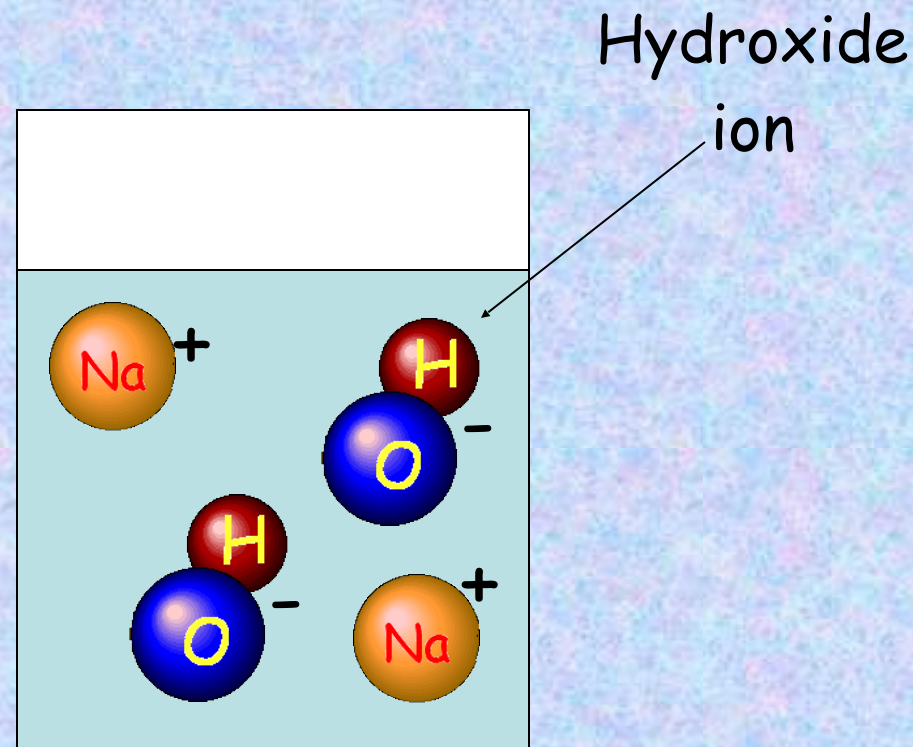


Sodium hydroxide




What are Bases

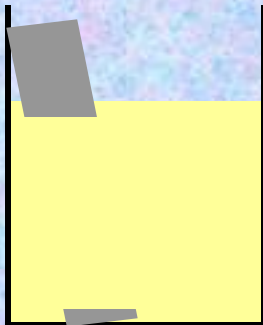
- Are compounds that add hydroxide ions to water



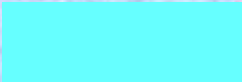
General Properties

ACIDS

- ~~Taste sour~~ blue to red
- Turn litmus 
- React with some metals
- React with bases
- Conduct electricity



BASES

- ~~Taste bitter~~ red to blue
- Turn litmus 
- Feel soapy or slippery (react with fats to make soap)
- React with acids
- Conduct electricity

Products that are Acids or Bases

Acid

- Foods (sour/tangy)
 - pop
 - juice
 - fruits
 - vinegar

Bases

- Cleaning products
 - baking soda
 - bleach
 - oven cleaner

Common Household Acids & Bases



Naming Acids

- ▶ There are 2 common groups of acids
- ▶ **BINARY ACIDS** contain only 2 elements

Some binary acids

HCl - hydro**chloric** acid

HBr - hydro**bromic** acid

H₂S - hydro**sulfuric** acid

OXYACIDS (most common)

- They contain polyatomic ions bound with hydrogen

OXYACIDS	Polyatomic ion
HNO_2 Nitrous acid	NO_2^- Nitrite ion
HNO_3 Nitric acid	NO_3^- Nitrate ion
H_3PO_4 Phosphoric acid	PO_4^{3-} Phosphate ion
H_2SO_3 Sulfurous acid	SO_3^{2-} Sulfite ion
H_2SO_4 Sulfuric acid	SO_4^{2-} Sulfate ion
HClO Hypochlorous acid	ClO^- Hypochlorite ion
HClO_2 Chlorous acid	ClO_2^- Chlorite ion
HClO_3 Chloric acid	ClO_3^- Chlorate ion
HClO_4 Perchloric acid	ClO_4^- Perchlorate ion

Names & Chemical Formulas of BASES

- ▶ Many bases contain **hydroxide** ions and some like baking soda contain **carbonate**

Sodium hydroxide

NaOH

lye or caustic soda

Potassium hydroxide

KOH

lye or caustic potash

Magnesium hydroxide

Mg(OH)₂

milk of magnesia

Calcium hydroxide

Ca(OH)₂

slaked lime