Arrhenius Acid-Base Concept

Svante Arrhenius, 1884

Strong and Weak Acids and Bases

1. The following common acids are strong: HCl, HBr, HI, HNO_3, $HClO_4$, H_2SO_4

   The following are some less common acids that are also strong: $HClO_3$, $HBrO_3$, HIO_3, H_2SeO_4

K Assume all other acids are weak unless told otherwise.

   Some weak acids: HF, HNO_2, $HClO_2$, [H_2SO_3] = SO_2 + H_2O, HC_2H_3

Metal Oxides as Bases

Neutralization

- Neutralization is the fundamental reaction

Three Ways of Writing a Neutralization

Molecular equation:

HCl(*aq*) + NaOH(

Writing Neutralization Equationsfor Weak Acids

Strong, Weak, or Non-Electrolyte?

2. Molecular compounds may be non-electrolytes, weak electrolytes, or strong electrolytes, depending on whether they dissolve without ion formation, a little ion formation, or mostly ion formation, respectively.

Examples:

Compound	Type	Soln Species
sucrose	nonelectrolyte	molecules
CH_3COOH	weak electrolyte	molecules + ions
HCl	strong electrolyte	ions

Strong, Weak, or Non-Electrolyte?

3. Strong acids and strong bases are strong