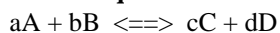


Useful Information

Equilibrium reactions



$$K = \frac{[C]^c [D]^d}{[A]^a [B]^b}$$

pH equations

$$[H_3O^+][OH^-] = 1 \times 10^{-14} \quad pH + pOH = 14$$

$$pH = -\log[H_3O^+] \quad [H_3O^+] = 10^{-pH}$$

$$pOH = -\log[OH^-] \quad [OH^-] = 10^{-pOH}$$

Electronegativity Values of Selected Elements

Metallic Elements			Nonmetallic Elements			
Li (1.0)	Be (1.5)	H (2.1)	C (2.5)	N (3.0)	O (3.5)	F (4.0)
Na (1.0)	Mg (1.2)	Al (1.5)	P (2.1)	S (2.5)	Cl (3.0)	
K (0.9)	Ca (1.0)	Sc (1.3)		Se (2.4)	Br (2.8)	

Solutions and Molarity

$$M = \frac{\text{moles}}{L} \quad M \times V = \text{moles}$$

$$\text{Dilutions} \quad M_1 V_1 = M_2 V_2$$

Electronegativity

Difference	Bond type
0-0.4	Non polar covalent
0.5-1.9	Polar Covalent
2.0 -	Ionic

TABLE 8.2 Some Acids and Their Conjugate Bases, in Decreasing Order of Acid Strength

Acid	Conjugate Base
HI	I ⁻ Iodide ion
H ₂ SO ₄	HSO ₄ ⁻ Hydrogen sulfate ion
HCl	Cl ⁻ Chloride ion
HNO ₃	NO ₃ ⁻ Nitrate ion
H ₃ O ⁺	H ₂ O Water
HSO ₄ ⁻	SO ₄ ²⁻ Sulfate ion
H ₃ PO ₄	H ₂ PO ₄ ⁻ Dihydrogen phosphate ion
HF	F ⁻ Fluoride Ion
CH ₃ CO ₂ H	CH ₃ CO ₂ ⁻ Acetate ion
H ₂ CO ₃	HCO ₃ ⁻ Bicarbonate ion
H ₂ S	HS ⁻ Hydrogen sulfide ion
H ₂ PO ₄ ⁻	HPO ₄ ²⁻ Hydrogen phosphate ion
NH ₄ ⁺	NH ₃ Ammonia
C ₆ H ₅ OH	C ₆ H ₅ O ⁻ Phenoxide ion
HCO ₃ ⁻	CO ₃ ²⁻ Carbonate ion
HPO ₄ ²⁻	PO ₄ ³⁻ Phosphate ion
H ₂ O	OH ⁻ Hydroxide ion
C ₂ H ₅ OH	C ₂ H ₅ O ⁻ Ethoxide ion
NH ₃	NH ₂ ⁻ Amide ion

Strong Acids

Weak Acids

Weak Bases

Strong Bases