Properties of Acids and Bases

Arrhenius theory	acids are substances that contains hydrogen and dissociates to produce H^+, and a base is any substance that cointains hydroxide and dissociates to produce OH^-	
disadv-antage of arrhenius theory	not all bases contain OH, but can produce it when dissolved in water	Ex: NH3 - NaCO3
Bronst-ed-Lowry Theory	Acids are H^+ donors, bases are H^+ acceptors	
Conjugate Pairs	acids that donate H^+ and become bases are called conjugate bases, while bases that accept H^+ and become acids are called conjugate acids	

acids and bases are both electrolytes

water can act as an acid and base, so it is amphoteric

PH and POH

$PH = -\log[H^+]$ $POH = -\log[OH^-]$

$PH + POH = 14$

Monoprotic and Polyprotic Acids

Monoprotic Acid	can only donate one H^+ ion	
Polyprotic Acid	can donate multiple H^+ ions	
Lewis Theory	acids are an electron pair acceptor, bases are an electron pair donor	
Lewis Acids	BF_3, BCl_3, H^+, Ag^+	
Lewis Bases	F^-, PCl_3, NH_3, Cl^-	
Acidic Anhydrides	nonmetal oxides that react with water to produce an acid	Ex: CO_2
Basic Anhydrides	metal oxides that react with water to form a base	Ex: CaO
water dissociation constant (kw)	$[H^+] \times [OH^-] = 10^{-14}$	

Neutralization and Titration

Neutraliz-ation Reaction	acid + base = water + salt
Titration	a method of finding an unknown acid or base's concentration by using a known one (standard solution)
Equiva-lence Point	Moles H^+ = Moles OH^-
acid-base indicators	substances that change color in acidic or basic solutions (bromothymol, phenolphthalein)
Hydrolysis of salt	a reaction in which one of the salt's ions reacts with water to produce an acidic or basic solution
Buffer Solution	a solution that resists a change in its PH
Buffer capacity	the amount of acid or base that can be added without a significant change in PH

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