Module 9 Exploring Creation With Chemistry by Dr. Jay L. Wile

Polyatomic Ions- Ions which are formed when a group of atoms gains or loses electrons.(289)

Covalent Bond- A molecular bond in which the electrons are shared equally between the atoms involved.(303)

Polar Bond- A chemical bond in which the electrons are shared unequally between the atoms involved.(304)

Topics:

- ☐ Introduction Polyatomic Ions
- ☐ Molecular Geometry – The VSEPR Theory
- ☐ Covalent and Polar Covalent Molecules, Experiment 9.1, Experiment 9.2 [long]

Notes:

Ion Name	Formula & Charge	Ion Name	Formula & Charge
ammonium	NH_4^{1+}	cyanide	CN^{1-}
hydroxide	OH^{1-}	carbonate	CO_3^{2-}
chlorate	ClO_3^{1-}	chromate	CrO_4^{2-}
chlorite	ClO_2^{1-}	dichromate	$Cr_2O_7^{2-}$
nitrate	NO_3^{1-}	sulfate	SO_4^{2-}
nitrite	NO_2^{1-}	sulfite	SO_3^{2-}
acetate	$C_2H_3O_2^{1-}$	phosphate	PO_4^{3-}

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Indicators- Substances which turn one color in the presence of acids and another color in the presence of bases.(326)

Acid- A molecule that donates H^{1+} ions.(328)

Base- A molecule that accepts H^{1+} ions.(328)

Amphiprotic Compounds- Compounds that can act as either an acid or a base, depending on the situation.(331)

Polyprotic Acids- Acids that can donate more than one H^{1+} ion.(336)

Molarity (M)- A concentration unit that tells you how many moles of a substance are in a liter of solution. It is determined by taking the number of moles of a substance and dividing by the number of liters of solution.(342)

Dilution- Adding water to a solution in order to decrease the concentration.(345)

Titration- The process of slowly reacting a base of unknown concentration with an acid of known concentration (or vise-versa) until just enough acid has been added to precisely react with all the base present. This process determines the concentration of the unknown base (or acid).(350)

Topics:

- ☐ Introduction, Acids and Bases, Experiment 10.1
- ☐ The Chemical Definition of Acids and Bases
- ☐ Predicting the Reactions that Occur between Acids and Bases
- ☐ Molarity
- ☐ Using Concentration in Stoichiometry
- ☐ Acid / Base Titration, Experiment 10.2

Notes:

$$M = \frac{\#\ moles}{\#\ liters}$$