AP CHEMISTRY 2019-20

Naming Compounds and Acids Information

Chemical nomenclature (a fancy word for naming!) is crucial to success in AP Chemistry and is considered a basic skill. Students should know how to both name any compound – either ionic or molecular (aka covalent) – and given the name, should be able to write the correct formula. Students should also know how to name acids which is a topic that should be researched and learned. ***Nomenclature rules should be reviewed, memorized, and practiced – either with a book or finding problems online.*** The below list of polyatomic ions must be memorized. Remember that you will always have a periodic table available!

List of Polyatomic ions – These should be memorized. Students will need to know them all year long

Table of Common Polyatomic Ions			
Ion Formula	**Name**	**Ion Formula**	**Name**
Hg_2^{2+}	Mercury(I)	SCN^{-1}	Thiocyanate
NH_4^{+1}	Ammonium	CO_3^{2-}	Carbonate
$C_2H_3O_2^{-1}$ or CH_3COO^{-1}	Acetate	CrO_4^{2-}	Chromate
CN^{-1}	Cyanide	$Cr_2O_7^{2-}$	Dichromate
$H_2PO_4^{-1}$	Dihydrogen Phosphate	HPO_4^{2-}	Hydrogen Phosphate
OH^{-1}	Hydroxide	$C_2O_4^{2-}$	Oxalate
HCO_3^{-1}	Hydrogen Carbonate	O_2^{2-}	Peroxide
NO_3^{-1}	Nitrate	SO_3^{2-}	Sulfite
NO_2^{-1}	Nitrite	SO_4^{2-}	Sulfate###
ClO^{-1} or OCl^{-1}	Hypochlorite	$S_2O_3^{2-}$	Thiosulfate
ClO_2^{-1}	Chlorite	PO_3^{3-}	Phosphite
ClO_3^{-1}	Chlorate***	PO_4^{3-}	Phosphate
ClO_4^{-1}	Perchlorate		
MnO_4^{-1}	Permanganate		

***NOTE** that bromine (Br) and other halogens will form similar oxyanions (for example, BrO_3^- is the bromate ion and BrO_2^- is the bromite ion)

###**NOTE** that selenium (Se) and other atoms in the same family as sulfur will form similar oxyanions (for example, SeO_4^{2-} is the selenate ion)

Helpful Info about Transition Metals – Most transition metals have the capability of forming more than one possible cation – thus the need for roman numerals when naming compounds. BUT there are FOUR transition metals that only form ONE cation given the opportunity, and these should be memorized. They are:

Silver (Ag) – Forms a +1 ion ***Cadmium (Cd), Nickel (Ni), and Zinc (Zn) – Form a +2 ion***