# Chemistry SL IB Summer 2018 Assignment

Welcome to Chemistry SL IB!! This summer assignment is intended to better prepare you for this course and help you to be more successful. The assignment will be collected for credit the first week of school in August. Be prepared to take a Summer Assignment exam during the first week of the Fall semester as well. Students are encouraged to work on this throughout the summer break. Try not to procrastinate!! Good luck and we look forward to seeing you in August!

*Mrs. Gordon*

**Assignment:**

1. Memorize the attached sheet of polyatomic ions
2. Complete the Worksheet entitled Nomenclature.
3. Complete the Worksheet entitled Quantitative Chemistry.

**Polyatomic Ion List—*MUST MEMORIZE AND KNOW!!!!!!***

**NH4+** Ammonium

**NO2-** Nitrite **NO3-** Nitrate **SO32-** Sulfite **SO42-** Sulfate

**HSO4-** Hydrogen sulfate (or bisulfate)

**OH-** Hydroxide **CN-** Cyanide **PO43-** Phosphate

**HPO42-** Hydrogen phosphate **H2PO4-** Dihydrogen phosphate **CO32-** Carbonate

**HCO3-** Hydrogen carbonate (or bicarbonate)

**ClO-** Hypochlorite

**ClO2-** Chlorite

**ClO3-** Chlorate

**ClO4-** Perchlorate **C2H3O2-** Acetate **MnO4-** Permanganate **Cr2O72-** Dichromate **CrO42-** Chromate

**O22-** Peroxide

# Nomenclature Worksheet

*Directions: Label the following as Type 1, Type 2, or Type 3 compound AND give the name.*

1. Na2O
2. NaCl
3. P2S6
4. CO2
5. CuO
6. K3N
7. Cu2SO4
8. AgCl
9. FePO4
10. BaS

*Directions: Name the compound or give the chemical formula.*

1. Acetic acid
2. Cobalt (III) sulfide
3. Cu(NO3)2
4. CuCl
5. Aluminum sulfite
6. Magnesium hydroxide
7. ZnS
8. Sodium dihydrogen phosphate
9. Hg2Cl2
10. Sulfur hexafluoride

# Quantitative Chemistry Worksheet

***Directions: Convert the following to the appropriate quantity.***

1. 4.24g C6H6 to moles
2. .224 mol H2O to g
3. 2.71x1022 molecules of CO2 to atoms
4. Determine the percentage composition of magnesium carbonate.
5. What is the difference between relative atomic mass and relative molecular mass?
6. What is the difference between relative molecular mass and molar mass of a compound?
7. What mass of hydrogen peroxide must decompose to produce 1.77g of water?
8. What mass of sodium chloride is produced when chlorine reacts with 0.39g of sodium iodide?
9. Identify the limiting reactant when 5.68g of iron (II) reacts with 3.88g of S to produce FeS.
10. What mass of sulfur dioxide is produced from the reaction between 23.5g of S8 and 10.75g of O2?
11. Determine the percent yield for the reaction between 15.8g NH3 and excess oxygen to produce 21.8g NO gas and water.
12. How many liters are in one mole of any gas at STP?
13. Write the formulas of the following gas laws:
    1. Boyle’s Law
    2. Charles’ Law
    3. Gay-Lussac’s Law
    4. Combined Gas Law
    5. Avogadro’s Law
    6. Ideal Gas Law
14. A balloon filled with helium is held at 25 degrees Celsius. It has a volume of 20.0dm3. The pressure within the balloon reaches 2.07 atm. How many moles of helium can be found in the balloon? What is the mass of this helium?