**Study Guide- Unit 5**

Hint: List the type of compounds you are naming, *then* name the compounds!

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **formula** | **name** | **type** |  | **formula** | **name** | **type** |
| K2S |  |  |  | MgCO3 |  |  |
| HgI2 |  |  |  | N2H4 |  |  |
| Al2O3 |  |  |  | Ag3N |  |  |
|  | Calcium hydroxide |  |  |  | Copper (II) chloride |  |
|  | Cobalt (III) phosphate |  |  |  | Mercury(I) iodide |  |
|  | Tetracarbon trinitride |  |  |  | Strontium silicate |  |
|  | Ammonium chloride |  |  |  | Carbon tetrachloride |  |

1. How many **grams** are there in 20.25 moles of Aluminum oxide?

2. How many **molecules** are there 600 g of dinitrogen tetrahydride?

3. Determine the **volume,** of 10.60 g Oxygen gas at STP.

4. How many **grams** are in 1690 L of Neon gas at STP?

5. How many **formula units** are in 0.125 g of Iron (III) oxide?

6. Calculate the percent composition of each element in the the following compounds

a) NaHSO3

b. Ca(CO3)2

7. Calculate the mass of the element in the given mass of compound:

1. Mass of Hydrogen in 350 g **NaHSO3**
2. Mass of Oxygen in 200.2 g of Ca(CO3)2

8. Calculate the percent composition of the compounds that are formed from these reactions: 12.03 g of Magnesium combine completely with 7.48 g of Oxygen.

9. Determine the molar masses for each compound. **Show all work!**

* 1. MgCO3
  2. Co(NO3)3
  3. S2Cl2

10. How many molecules are present in 150.5mL of nitrogen dioxide gas at STP? [you need to write out the formula and change ml into L (1000ml=1L)]

11. How many formula units are in 250.0g of Calcium Sulfate? (you need to write out the formula)

12. If you have 52.5 x 1022 atoms of this hexachlorine trioxide, how many kg are present? ? [you need to write out the formula and change g into kg (1000g=1kg)]

13. 60.24 g of Ba combine completely with 28.77 g of F in BaF. What is the percent composition each element in this compound?

14. Calculate the percent composition of magnesium in Mg CO3

15. Calculate the percent composition of nitrogen in Co(NO3)3