

1. Identify the representative particle for the following substances
 - a. molecular compound _____
 - b. ionic compound _____
 - c. elemental substance _____
 - d. water _____
 - e. table salt _____
 - f. a piece of coal (carbon) _____
2. Define the following:
 - a. gram formula mass
 - b. gram molecular mass
 - c. gram atomic mass
 - d. molar mass
 - e. molar volume
 - f. STP
3. Find the molar mass of the following of the following compounds
 - a. PbSO_4
 - b. $\text{Al}_2(\text{C}_2\text{O}_3)_3$
 - c. $\text{C}_{18}\text{H}_{28}\text{O}_3\text{N}_5$
4. How many atoms are there in 2.55 moles of calcium?
5. How many molecules of oxygen gas are there in 3.90 L at STP?
6. How many grams of sodium phosphate are there in 0.417 moles of sodium phosphate?
7. How many atoms are there in 125 g of ethanol ($\text{C}_2\text{H}_6\text{O}$)?

8. An unknown gas has a density of 0.760 g/L at STP. Which of the following gases could this be (NO, SO₂, O₂, Cl₂, NH₃)?

9. Find the percent composition of HCl

10. A compound with a gram molecular mass of 231.27 g/mol has the following percent composition:

Carbon = 77.90 % C
Hydrogen = 3.93 % H
Nitrogen = 18.17 % N

Find the empirical and molecular formulas of the compound