

## WOC Ch 6 Chemical Composition

1. How many particles are in a mole? Why is this called Avogadro's number?
2. How is Avogadro's number related to carbon?
3. Define these terms:

molar mass	atomic mass	formula mass	dimensional analysis
empirical formula	molecular formula	percentage composition	
mass percent			
4. Describe some differences and some similarities between empirical formulas and molecular formulas.

The test will include problems like these:

5. What is the formula mass of copper (III) nitrate?
6. What is the molar mass of lead (II) sulfate?
7. What is the mass of 0.89 moles of calcium chloride?
8. How many moles are in a 60 gram sample of ammonium nitrate?
9. How many atoms are 0.58 mol of Se?
10. How many formula units (particles, molecules) are in 2.0 g of calcium carbonate?
11. A gas-filled container with a volume of 893 L contains how many gas particles at STP?
12. Find the percentage composition of a compound that contains 1.94 g of carbon, 0.48 g of hydrogen, and 2.58 g of sulfur in a 5.00 g sample.
13. What is the empirical formula of a compound containing 0.928 g of gallium and 0.412 g of phosphorous?
14. Find the molecular formula of a compound that contains 42.56 g of palladium and 0.80 g of hydrogen. The molar mass of the compound is 216.8 g/mol.
15. Outline the steps in determining the empirical formula of a compound. What additional operation must be completed to know the molecular formula?