Name KEY Date _____ Class _____

8. What is the volume at STP of 2.66 mol of methane (CH_4) gas? 59.6 L CH_4
9. How many moles is 135 L of ammonia (NH_3) gas at STP? 6.03 mol NH_3

10.3 PERCENT COMPOSITION AND CHEMICAL FORMULAS

1. A sample of a compound analyzed in a chemistry laboratory consists of 5.34 g of carbon, 0.42 g of hydrogen, and 47.08 g of chlorine. What is the percent composition of this compound?
   C 10.1%
   H 0.79%
   Cl 89.1%
2. Find the percent composition of a compound containing tin and chlorine if 18.35 g of the compound contains 5.74 g of tin.
   mass 12.61 g Cl
   Sn 31.3%
   Cl 68.7%
3. If 3.907 g of carbon combines completely with 0.874 g of hydrogen to form a compound, what is the percent composition of this compound?
   C 81.7%
   H 18.3%
4. From the formula for calcium acetate, $Ca(C_2H_3O_2)_2$, calculate the mass of carbon that can be obtained from 65.3 g of the compound.
   19.89 C
5. How many grams of aluminum are in 25.0 g of aluminum oxide (Al_2O_3)?
   13.2 g Al
6. How many grams of iron are in 21.6 g of iron(III) oxide (Fe_2O_3)?
   15.11 g Fe
7. Determine the empirical formula of each of the following compounds from the percent composition:
   a. 7.8% carbon and 92.2% chlorine CCl_4
   b. 10.0% C, 0.80% H, 89.1% Cl $CHCl_3$