

Name: \_\_\_\_\_ Per: \_\_\_\_\_

## Percent Composition and Empirical Formula Worksheet

- I. Determine the percent composition of the following compounds and molecules:
1. Calcium Oxide, CaO
  2. Lithium sulfite,  $\text{Li}_2\text{SO}_3$
  3. Ammonium hydrogen phosphate  $(\text{NH}_4)_2\text{HPO}_4$
  4. Phosphorus trichloride,  $\text{PCl}_3$
  5. Cobalt (II) nitrate,  $\text{Co}(\text{NO}_3)_2$
- II. Determine the empirical formula of the compounds or molecules in the following problems:
1. A sample contains 16.00 grams of O and 6.00 grams of C.
  2. A sample contains 7.10 grams of Cl, 2.40 grams of C and .603 grams of H.
  3. A sample of cisplatin is 65.02% platinum, 9.34% nitrogen, 2.02% hydrogen and 23.63% carbon.
- III. Determine the molecular formula of the following:
1. A sample contains a material with the empirical formula of CHO and a molar mass between 135 and 155 g/mol.
  2. A sample is 40.00% C, 6.713% H and 53.28% O on a mass basis and a molar mass of approximately 180 g/mol.
- IV. For each hydrate complete the chart:

Formula of Hydrate	Molar Mass of Hydrate	Formula of Anhydrate	Molar Mass of Anhydrate	% Water
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$				
$\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$				
$\text{KNaC}_4\text{H}_4\text{O}_6 \cdot 4\text{H}_2\text{O}$				

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Red Book p39-44:10-22; p 45-46: 11-17  
Beige Book p55-60: 22-34; p61-62: 11-17

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Big Book  
P 217-219: 90-94,101-117