

Percent Composition, Empirical & Molecular Formulas Review Name: _____

Calculate the percent composition of the compounds that are formed from these reactions:

1. 29.0 g of Argon combine completely with 4.30 g of Sulfur.

2. 222.6 g of Sodium combine completely with 77.4 g of Oxygen.

Calculate the percent composition of **hydrogen** for each of the following compounds:

3. C_2H_6

4. $NaHSO_4$

5. $Ca(C_2H_3O_2)_2$

6. Identify the following as either molecular formulas or empirical formulas.
 - a. $C_5H_{10}O_5$
 - b. $C_6H_{12}O_2$
 - c. $C_{55}H_{72}MgN_4O_5$
 - d. $C_{12}H_{17}ON$
 - e. $H_2C_2O_4$

7. Calculate the empirical formula of each compound with the following percent compositions.
 - a. 94.1% O, 5.9% H

b. 79.9% C, 20.1% H

8. The compound methyl butanoate smells like apples. Its percent composition is 58.8% C, 9.8% H, and 31.4% O. If its gram molecular mass is 102 g/mole, what is its molecular formula?

9.

a. A compound of carbon and hydrogen has the composition of 92.25% carbon and 7.75% hydrogen by mass. What is the empirical formula of this compound?

b. If the compound has a mass of 52.03 g/mole, what is the molecular formula of the compound?

Answers:

1) 87.1% Ar, 12.9% S 2) 74.2% Na, 25.8% O 3) 20.1% H 4) 0.841% H 5) 3.83% H
6a) molecular b) molecular c) empirical d) empirical e) molecular 7a) OH b) CH₃
8) C₅H₁₀O₂ 9a) CH b) C₄H₄