SI Worksheet

3/3/2022

Agenda:

Kahoot

Worksheet

1. What is the mass percent of barium in BaSO4?
2. What is the mass percent of Nitrogen in C(NH)2NO3?
3. A compound is analyzed and found to contain 35.66% carbon, 16.24% hydrogen and 45.10% nitrogen. What is the empirical formula of the compound?
4. A compound is found to contain 50.05% sulfur and the rest is oxygen. What is the empirical formula for this compound?
5. The molecular weight for this compound is 64.07 g/mol. What is its molecular formula?
6. A compound is found to contain 64.80 % carbon, 13.62 % hydrogen, and 21.58 % oxygen by weight. The molecular weight for this compound is 148.28 g/mol. What is its molecular formula?
7. Vanillin, the flavoring agent in vanilla, has a mass percent composition of 63.15%C, 5.30%H, and 31.55%O. Determine the empirical formula of vanillin.
8. What is the empirical formulate for isopropyl alcohol (which contains only C, H and O) if the **combustion** of a 0.255 grams isopropyl alcohol sample produces 0.561 grams of CO2 and 0.306 grams of H2O?
9. Naphthalene, the active ingredient in one variety of mothballs, is an organic compound that contains carbon and hydrogen only. Complete combustion of a 20.10 mg sample of naphthalene in oxygen yielded 69.00 mg of CO2 and 11.30 mg of H2O. Determine the empirical formula of naphthalene.
10. Balance the following chemical equations
    1. CO2 + H2O → C6H12O6 + O2
    2. SiCl4 + H2O → H4SiO4 + HCl
    3. Al2(SO4)3 + Ca(OH)2 → Al(OH)3 + CaSO4

#### **Ca3(PO4)2 + SiO2 → P4O10 + CaSiO3**