

Name _____ Pd _____ Date _____

Percent Composition by Mass Worksheet

Show all work, including the correct units and sig figs with your answer.

Experimental Percent Composition by Mass

1. A chemist determines that 1.26 g of iron reacts with 0.54 g of oxygen to form rust. What is the percent composition of each element in the new compound?
2. In the lab, a chemist analyzed a sample of methanol and found that it was made of 6.2 g of carbon, 4.1 g of hydrogen, and 15.9 g of oxygen. What is the percent composition of each element?
3. In an experiment, a student took a 12.2 g sample of table salt and chemically separated the chlorine from the sodium. He determined that there were 5.2 g of chlorine in the sample. What is the percent composition of each element in the table salt?
4. A compound contains 1.2 moles of carbon and 3.2 moles of hydrogen. What is the percent composition by mass of each element in the compound?
5. In an experiment, 0.05 moles of iron and 0.05 moles of sulfur are heated in a test tube to create a new substance. What is the percent composition by mass of each element in the new compound?
6. A chemist breaks down a compound into 3.4 moles of carbon and 6.8 moles of oxygen. What is the percent composition by mass of each element in the compound?
7. In an experiment, 2.0 moles of oxygen atoms reacts with 80.1 g of calcium to form a new compound. What is the percent composition by mass of each element in the new compound?

Theoretical Percent Composition by Mass

8. What is the percent composition by mass for each element in sodium phosphate, Na_3PO_4 ?

9. What is the percent composition by mass for each element in hydrogen peroxide, H_2O_2 ?

10. What is the percent composition by mass for each element in carbon dioxide, CO_2 ?

11. What is the percent composition by mass for each element in carbon monoxide, CO ?

12. What is the percent composition by mass for each element in glucose, $\text{C}_6\text{H}_{12}\text{O}_6$?

13. What is the percent composition by mass for each element in aspirin, $\text{C}_9\text{H}_8\text{O}_4$?

14. What is the percent composition by mass for each element in ammonium sulfate, $(\text{NH}_4)_2\text{SO}_4$, which is used in fertilizers?

15. What is the percent composition by mass for each element in rubbing alcohol, $\text{C}_3\text{H}_7\text{OH}$?