Formula Mathematics

Other Web Worksheets with Answers

I. Convert each of the following to its equivalent in moles.

1.   302.7   g of $ScCl_3$

2.   17.2 g of H_3PO_4

3.   15.9   g of $Ca(NO_3)_2$

4.   5.0 g of ammonium sulfate

5.   8.8   g of potassium carbonate

6.   30.0   g of tin (II) nitrate

II Find the percentage composition of each of the following compounds:

1. $(NH_4)_2SO_4$

2. $(NH_4)_2Cr_2O_7$

3. $Zn_3(PO_4)_2$

4.   phosphoric acid

5.   potassium nitrite

6.   barium hydroxide

7.   What is the percentage of hydrogen in $Ca(C_2H_3O_2)_2$?

8.   What is the percentage of oxygen in $KMnO_4$?

9.   How much iron can be obtained from 100.0 g of Fe_3O_4?

10.   How much phosphorus is there in 500.0 g of calcium phosphate?

11.   How many grams of hydrogen can be obtained from 35 mL of water?

III. Find the empirical formula for each of the following substances. The percentage composition

1.   88.8% copper; 11.2% oxygen

2.   5.88% hydrogen; 94.12% oxygen

3.   56.4% potassium; 8.7% carbon; 34.9% oxygen

4.   10.04% carbon; 0.84% hydrogen; 89.12% chlorine

5.   29.40% calcium; 23.56% sulfur; 47.04% oxygen

6.   38.67% potassium; 13.85% nitrogen; 47.48% oxygen

7.   A sample of potassium sulfate has the following composition: 17.96 g of potassium, 7.35 g of sulfur, 14.70 g of oxygen. What is its simplest formula?

8.   A certain sample of a barium salt contains 8.57 g of barium and 4.43 g of chlorine. What is its simplest formula?

9.   0.238 g of carbon is burned in 1.00 L of oxygen. The oxide of carbon which is formed weighs 0.872 g. What is the formula of this oxide?

10.   Analysis of 100.0 g of a compound produces the following result: 26.6 g of potassium; 35.4 g of chromium; 38.0 g of oxygen. What is the formula of this compound?

11.   50.0 g of sulfur are mixed with 100.0 g of iron and the mixture is heated. When the reaction is completed, 12.7 g of iron remain. What is the formula of the compound formed?

IV. Given below are the percentage compositions for a number of compounds. From this information determine the simplest formula for each compound. Use the density information to determine the correct formulas for these compounds.

1.   92.3% carbon; 7.7% hydrogen; 500.0 ml weigh 1.72 g

2.   47.4% sulfur; 52.6% chlorine; 50.0 mL weigh 0.301 g

3.   40.00% carbon; 6.67% hydrogen; 53.33% oxygen; 10.0 mL weigh 0.027 g

4.   94.12% sulfur; 5.88% hydrogen

Other Web Worksheets with Answers – Same as Top of Page

Worksheet on Moles 1   Percent Composition

Worksheet on Moles 2   Empirical Formulas