"TRY YOURSELF" PROBLEMS FROM STUDY SECTION 2.8

Try Yourself 2.18

What is the percent composition of Cl in $Pt(NH_3)_2Cl_2$?

Try Yourself 2.19

What mass of lead is present in 10.0 g of PbS?

Try Yourself 2.20

Eugenol is the major component in oil of cloves. It has a molar mass of 164.2 g/mol and is 73.14% C and 7.37% H; the remainder is oxygen. Calculate the empirical and molecular formulas of eugenol.

Try Yourself 2.21

Formula from mass (data from lab experiments)

Tin metal (Sn) and purple iodine (I_2) combine to form orange, solid tin iodide with an unknown formula.

$Sn(s) + I_2(s) \rightarrow Sn_xI_y(s)$

Mass of Sn reacted = 0.455 g

Mass of I_2 reacted = 1.947 g

Calculate die values of x and y (in other words calculate the formula of the compound.

Try Yourself 2.22

Elemental sulfur (1.256 g) is combined with fluorine, F_2, to give a compound with the formula SF_x, a very stable, colorless gas. If you have isolated 5.722 g of SF_x, what is the value of x?

Try Yourself 2.23

Given $RuCl_3.xH_2O$

If you heat 1.056 g of the hydrated salt and find that only 0.838 g of $RuCl_3$ remains when all of the water has been driven off. Calculate the value of x from this information.