Answers for Practice Problems E in page 314

Homework — GENERAL

Additional Practice Write a balanced chemical equation for each of the following problems, and then determine the excess reactant, the limiting reactant, and the theoretical yield (in grams) of the first product mentioned.

1. Zinc citrate, $Zn_3(C_6H_5O_7)_2$, an ingredient in toothpaste, is made by reacting zinc carbonate and citric acid, $C_6H_8O_7$. The other products are H_2O and CO_2. There are 6.00 mol $ZnCO_3$ and 10.0 mol $C_6H_8O_7$. Ans. $3ZnCO_3 + 2C_6H_8O_7 \rightarrow Zn_3(C_6H_5O_7)_2 + 3H_2O + 3CO_2$; $C_6H_8O_7$ is in excess, $ZnCO_3$ is limiting, and the theoretical yield is 1.15×10^3 g $Zn_3(C_6H_5O_7)_2$.