

a) If 10.0 g of  $\text{Al}_2(\text{SO}_3)_3$  is reacted with 10.0 g of NaOH, determine the limiting reagent

**3 step conversion problems Grams to Grams!**

b) Determine the number of moles of  $\text{Al}(\text{OH})_3$  produced

To solve this problem you need to use the limiting reagent.

Start with 10 g  $\text{Al}_2(\text{SO}_3)_3$ !

Plan

starting mass of original compound found in story problem

molar mass of original compound

molar ratio using coefficients from balanced equation

c) Determine the number of grams of  $\text{Na}_2\text{SO}_3$  produced

This is a three-step conversion problem because you are going from grams of the limiting reagent to grams of a new compound  $\text{Na}_2\text{SO}_3$ .

Start with 10 grams of  $\text{Al}_2(\text{SO}_3)_3$ .

Plan

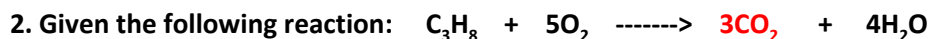
starting mass of original compound found in story problem

molar mass of original compound

molar ratio using coefficients from balanced equation

molar mass of new compound which is  $\text{Na}_2\text{SO}_3$  in this practice problem

d) Determine the number of grams of excess reagent left over in the reaction



a) If you start with 14.8 g of  $\text{C}_3\text{H}_8$  and 3.44 g of  $\text{O}_2$ , determine the limiting reagent.

**3 step conversion problems Grams to Grams!**

b) determine the number of moles of carbon dioxide produced

To solve this problem, you will need to use the limiting reagent and the mass given for the limiting reagent.

Plan

starting mass of original compound found in story problem

molar mass of original compound

molar ratio using coefficients from balanced equation

c) determine the number of grams of  $\text{H}_2\text{O}$  produced

This is a three-step conversion problem because you are going from grams of the limiting reagent to grams of a new compound.

Plan

starting mass of original compound found in story problem

molar mass of original compound

molar ratio using coefficients from balanced equation

molar mass of new compound which is water for this part of the practice problem

d) determine the number of grams of excess reagent left

3. Given the following equation:  $4\text{Al}_2\text{O}_3 + 9\text{Fe} \rightarrow 3\text{Fe}_3\text{O}_4 + 8\text{Al}$

a) If 25.4 g of  $\text{Al}_2\text{O}_3$  is reacted with 10.2 g of Fe, determine the limiting reagent

b) Determine the number of moles of Al produced

c) Determine the number of grams of  $\text{Fe}_3\text{O}_4$  produced

d) Determine the number of grams of excess reagent left over in the reaction