

Chem11 Excess and Limiting Reagents : W.S. - 50

1) Given : $1 \text{ Si} + 2 \text{ Br}_2 \rightarrow 1 \text{ SiBr}_4$

a) If we have 2.0 moles of Si reacting with 3.0 moles of Br_2 , the limiting reagent is _____. The excess reagent is _____ .

b) How many moles of the excess reagent will be left unreacted ? _____ .

c) How many moles of silicon tetrabromide will be produced ? _____ .

2) Given : $1 \text{ C}_3\text{H}_8 + 5 \text{ O}_2 \rightarrow 3 \text{ CO}_2 + 4 \text{ H}_2\text{O}$

a) Write the moles equation.

___ mol C_3H_8 + ___ mol O_2 yields ___ mol CO_2 + ___ mol H_2O .

b) If we have 800. moles of O_2 and 150 moles of propane (C_3H_8) the limiting reagent is _____. The excess reagent is _____ .

c) How many moles of the excess reagent are left unreacted. ? _____ .

d) How many moles of carbon dioxide are formed ? _____

3) Given : $\text{Mg} + \text{S} \rightarrow \text{MgS}$

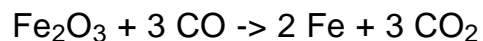
a) The mass equation is :

_____ grams Mg + _____ grams S yields _____ grams MgS

b) If 300. g of S reacts with 200. g of Mg, then the excess reagent is _____ , and the limiting reagent is _____ .

c) The amount of MgS formed is _____ .

4) Iron ore (Fe_2O_3) reacts with carbon monoxide to produce iron and carbon dioxide.



a) The mass equation is :

_____ g Fe_2O_3 + _____ CO g yields _____ g Fe + _____ g CO_2

b) If 100.0 t (1.000 tonne = 1000. kg) of ore reacts with 70.0 t of CO, which reagent is in excess ? _____. Which reagent is the limiting reagent ? _____ .

c) How much of the excess reagent will be left over ? _____ .

d) How much iron will be formed ? _____ .

Answers : 1)a) Br_2 , Si, b) 0.50, c)1.5, 2)a) 1, 5, 3, 4, b) C_3H_8 , O_2 , c) 50., d) 450, 3)a) 24.3, 32.1, 56.4, b) S, Mg, c) 464 g, 4)a) 159.7, 84.0, 111.7, 132.0, b) CO, Fe_2O_3 , c) 17.4 tonnes, d) 69.94 tonnes.