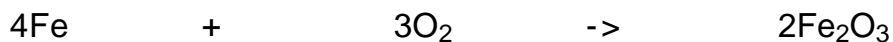


Chem11 Stoichiometry : W.S. - 20

1) Fill in the blanks for the reaction :



a) _____ atoms of Fe + _____ molecules of O_2 yields 2 formula units of Fe_2O_3 .

b) _____ moles Fe + 3.0 moles O_2 yields _____ moles Fe_2O_3 .
(This is the moles equation)

c) 1.0 moles Fe + _____ moles O_2 yields _____ moles Fe_2O_3 .

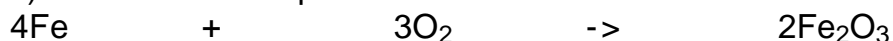
d) _____ moles Fe + 9.0 moles O_2 yields _____ moles Fe_2O_3 .

e) _____ moles Fe + _____ moles O_2 yields 7.3 moles Fe_2O_3 .

f) _____ moles Fe + 4.1×10^3 moles O_2 yields _____ moles Fe_2O_3 .

g) 8.2×10^{-7} moles Fe + _____ moles O_2 yields _____ moles Fe_2O_3 .

2) Fill in the blanks using the reaction in question 1). Calculate the masses in 2a) to one decimal place.



a) _____ grams Fe + 96.0 grams O_2 yields _____ grams Fe_2O_3 .
(This is the mass equation)

b) _____ grams Fe + 24.0 grams O_2 yields _____ grams Fe_2O_3 .

c) 446.8 grams Fe + _____ grams O_2 yields _____ grams Fe_2O_3 .

d) _____ grams Fe + _____ grams O_2 yields 67.0 grams Fe_2O_3 .

e) _____ grams Fe + 8.7×10^{-3} grams O_2 yields _____ grams Fe_2O_3 .

3)a) Balance the reaction : _____ P_4 + _____ Cl_2 \rightarrow _____ PCl_5

b) 85 moles of phosphorus (P_4) will produce _____ grams of PCl_5 if reacted with excess chlorine.

c) 0.00043 grams of chlorine gas requires at least _____ moles of phosphorus (P_4) to react.

Answers : 1)a) 4, 3, b) 4.0, 2.0, c) 0.75, 0.50, d) 12, 6.0, e) 15, 11, f) 5.5×10^3 , 2.7×10^3 , g) 6.2×10^{-7} , 4.1×10^{-7} , 2)a) 223.4, 319.4, b) 55.9, 79.9, c) 192.0, 638.8, d) 46.9, 20.1, e) 2.0×10^{-2} , 2.9×10^{-2} , 3)a) 1, 10, 4, b) 7.1×10^4 , c) 6.1×10^{-7} .