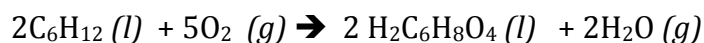


Defintiions:**Theoretical Yield:****Actual Yield:****Percent Yield:****Sample Problem:**

Adipic acid, $\text{H}_2\text{C}_6\text{H}_8\text{O}_4$, used to produce nylon, is made commercially by a reaction between cyclohexane (C_6H_{12}) and O_2 :



- (a) Assume that you carry out this reaction with 25.0 g of cyclohexane and that cyclohexane is the limiting reactant. What is the theoretical yield of adipic acid? (b) If you obtain 33.5 g of adipic acid, what is the percent yield of the reaction?

Sample Problem:

An iron ore sample contains Fe_2O_3 plus other impurities. A 752 g sample of this impure iron ore is heated with excess carbon, producing 453 g of pure iron by the following reaction:



What is the mass percent of Fe_2O_3 in the original impure iron sample ? Assume that Fe_2O_3 is the only source of iron and that the reaction is 100% efficient.