

Stoichiometry Calculations

Involving: Limiting and Excess Quantities

Reactions frequently are carried out where a reactant is present in excess.

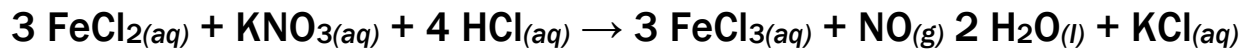
We may do this because:

- i. Deliberately adding an excess of one reactant makes sure the second one completely reacts.
- ii. Unavoidably having a reactant in excess because a limited amount of the other one is present.

Pancake analogy...

1. If 20.0 g of $\text{H}_{2(g)}$ is burnt with 100.0 g of $\text{O}_{2(g)}$, which reactant is present in excess and by how many grams?

2. If 56.8 g of $\text{FeCl}_{2(aq)}$, 14.0 g of $\text{KNO}_{3(aq)}$, and 40.0 g of $\text{HCl}_{(aq)}$ are mixed and allowed to react according to the equation:



a. Which chemical is the LIMITING reactant?

b. How many grams of each “excess reactant” are actually present in excess?

c. How many grams of NO will be made?