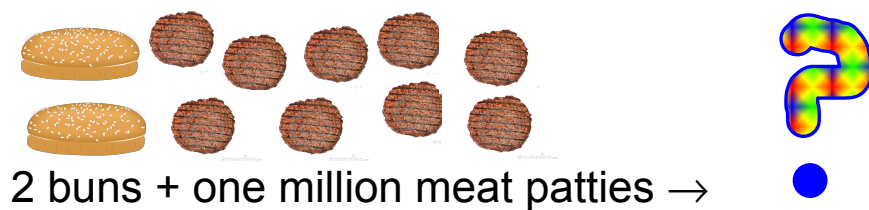
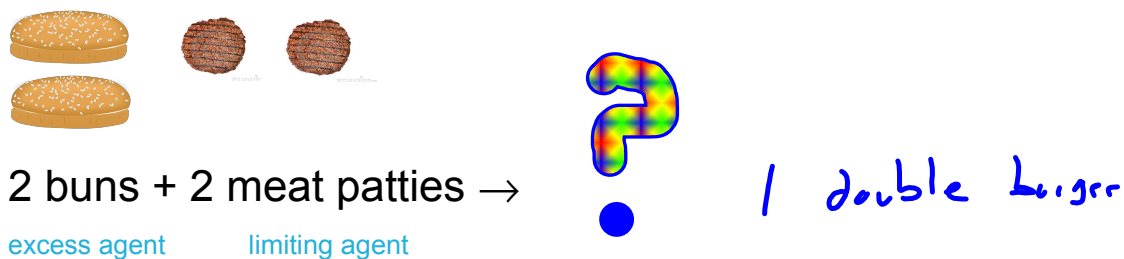
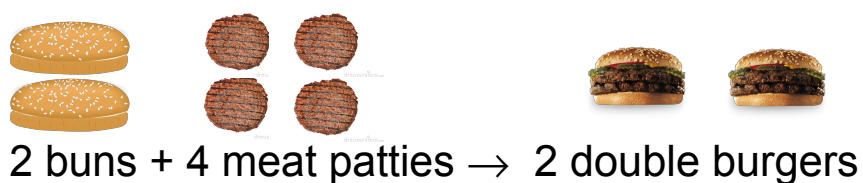


Lesson 5: Limiting and Excess Reagents

- let's make double burgers...

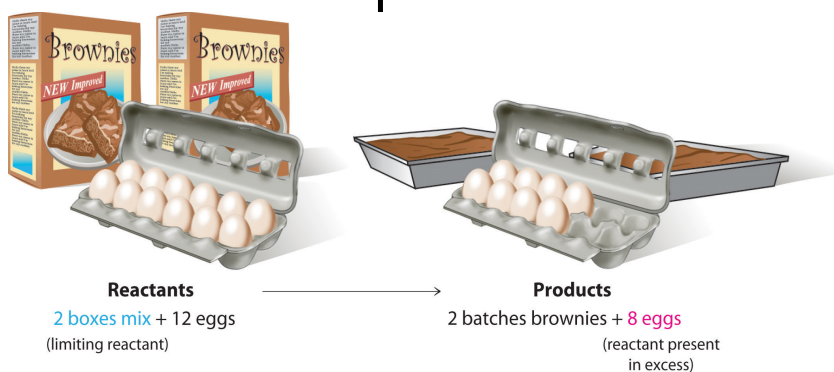


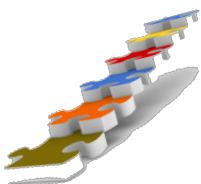
limiting reagent

excess reagent

the reactant that determines how much product can be formed in a reaction

the reactant that is present in larger quantities than necessary





Steps to Determine the Limiting Reagent:

Sometimes quantities of both reactants are given. In this case we must determine which is the limiting reagent in order to proceed with our stoichiometry.

1. Write the balanced chemical equation, including states.

2. Calculate the number of moles of each reactant using

$$n = m/M$$

$$n = c \cdot v$$

$$n = \frac{PV}{RT}$$

$$n = \frac{V}{V_m}$$

3. "Even out" the number of moles for each reactant by dividing by the coefficient in the balanced equation and compare...the one with the lowest number of moles is the limiting reagent

4. Use moles of the **limiting reagent** to calculate all other masses etc.

Example

When 80.0 g copper and 25.0 g of sulphur react, which reactant is limiting and what is the maximum amount of copper (I) sulphide that can be produced?

