

Follow along as you view the video, “Stoichiometry: Limiting Reactants” on edpuzzle.com and fill in the blanks as you go. (Also available at https://youtu.be/_B556kf4g1g)

- What is a limiting reactant?
 - Reactant that _____
 - Limits _____ because _____
 - recall combustion of ethyl alcohol from reactions lab— _____

 - *Excess Reactant* is reactant that is _____
- How to identify the **limiting reactant**
 - For the reaction $\text{N}_2 (\text{g}) + 3 \text{H}_2 (\text{g}) \rightarrow 2 \text{NH}_3 (\text{g})$,
 - If you have 1 mol N_2 and 3 mol H_2 , then _____
 - But if mole amounts are different from coefficients, need to _____

 - e.g. if there are 1 mol N_2 and 2 mol H_2 , _____
_____:
 - Equiv. $\text{N}_2 =$ _____ ; Equiv. $\text{H}_2 =$ _____
 - Since _____
 - Slightly harder example:
 - If there are 2.3 mol N_2 and 7.6 mol H_2 , which reactant is limiting?
 - Equiv. $\text{N}_2 =$ _____ ; Equiv. $\text{H}_2 =$ _____
 - _____

○ Mass-Mass problems

- For the same reaction, determine the limiting reactant if there are 20.0 g N₂ and 10.0 g H₂:

- First we must determine _____

20.0 g N₂ × _____ ; 10.0 g H₂ × _____

- Next compare equivalents, as before:

Equiv. N₂ = _____ ; Equiv. H₂ = _____

- _____

▪ You try it:

- For the reaction, $4 \text{FeS(s)} + 7 \text{O}_2\text{(g)} \rightarrow 2 \text{Fe}_2\text{O}_3\text{(s)} + 4 \text{SO}_2\text{(g)}$, what is the limiting reactant if

84.9 g FeS reacts with 64.9 g O₂?

- First determine the moles of each reactant:

- Next determine equivalents:

- Since _____

- Go on to the next video, Stoichiometry: Excess Reactant & Amount of Product Formed