



High School Science Virtual Learning

Chemistry

Limiting Reactants

April 24th, 2020



Chemistry

Lesson: April 24th 2020

Objective/Learning Target:

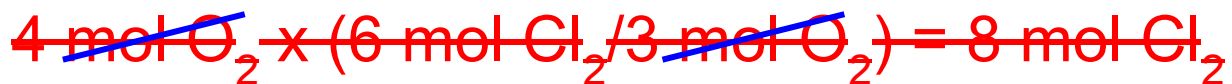
The learner will be able to determine the limiting reactant in a reaction and calculate the theoretical and percent yield for a problem with multiple reactants. They will also be able to calculate the amount of excess reactant leftover.

Bell Ringer



1. How many moles of Chlorine gas can be produced if 4 moles of FeCl_3 reacts with 4 moles of O_2 ?
2. How many moles of the excess is leftover?

Bell Ringer Answers:



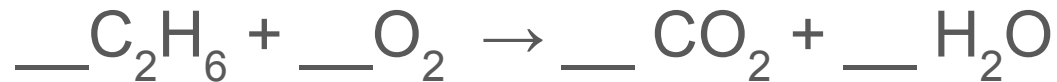


Lesson:

Limiting Reactant Problems Give you a chance to practice all areas of stoichiometry. Review with the following video and do the practice on the next slide.

[Limiting Reagent Made Easy-Ketzbook \(8:10\)](#)

Practice



Given 20.0 g of C_2H_6 and 50.0 g O_2 answer the following.

- 1) Balance the reaction.
- 2) Which reactant is the limiting reagent?
- 3) How many grams of CO_2 are formed?
- 4) How many grams of the excess reactant remains after the reaction?

Answers



2. ~~$20.0g C_2H_6 \times (1mol C_2H_6 / 30.0g C_2H_6) \times (4mol CO_2 / 2mol C_2H_6) = 1.33 mol CO_2$~~
 ~~$50.0g O_2 \times (1mol O_2 / 32.0g O_2) \times (4 mol CO_2 / 7mol O_2) = 0.893 mol CO_2$~~

O_2 is limiting

3. ~~$0.893mol CO_2 \times (44.0g CO_2 / 1mol CO_2) =$~~ **$39.3g CO_2$**

4. ~~$50.0g O_2 \times (1mol O_2 / 32.0g O_2) \times (2 mole C_2H_6 / 7mol O_2) \times (30.0g C_2H_6 / 1mol C_2H_6)$~~
 ~~$=$~~ **$13.4 g C_2H_6$ used**

$20.0g C_2H_6$ (starting) - $13.4g C_2H_6$ (used) = **$6.6 g C_2H_6$**

remaining



Try some more:

[Quizizz- Limiting Reactant](#)

[Another Quizizz- Limiting Reactant](#)



Xtra Video

[How to Find Limiting Reactants \(Strawberry smoothie\)-
Melissa Maribel\(8:51\)](#)