

Limiting Reactant Notes

MAIN IDEA: A chemical reaction stops when one of the reactants is used up.

LR Limiting Reactant (also called Limiting Reagent)

The reactant that is completely consumed (used up!)

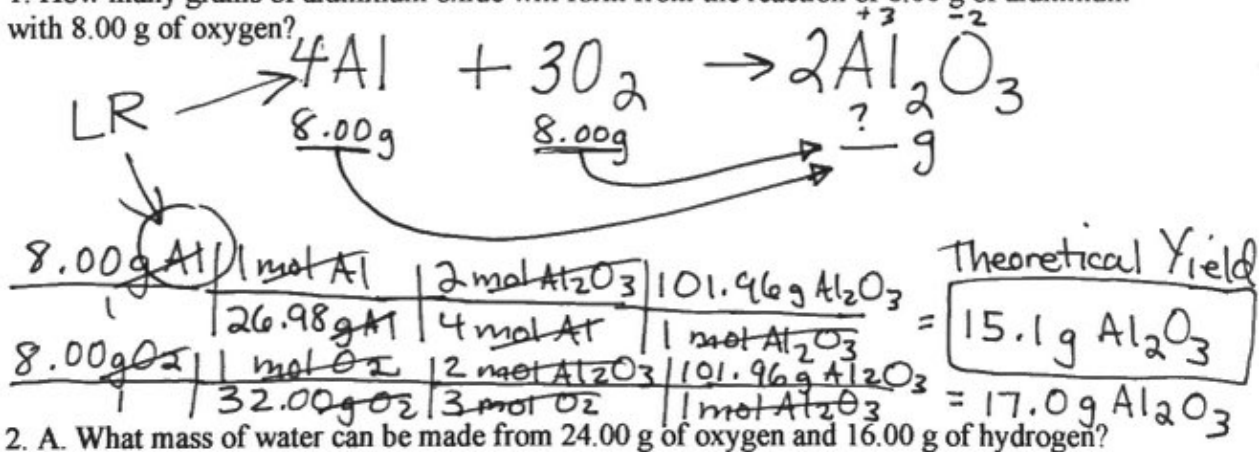
ER Excess Reactant

The reactant that is partially consumed (some is left over)

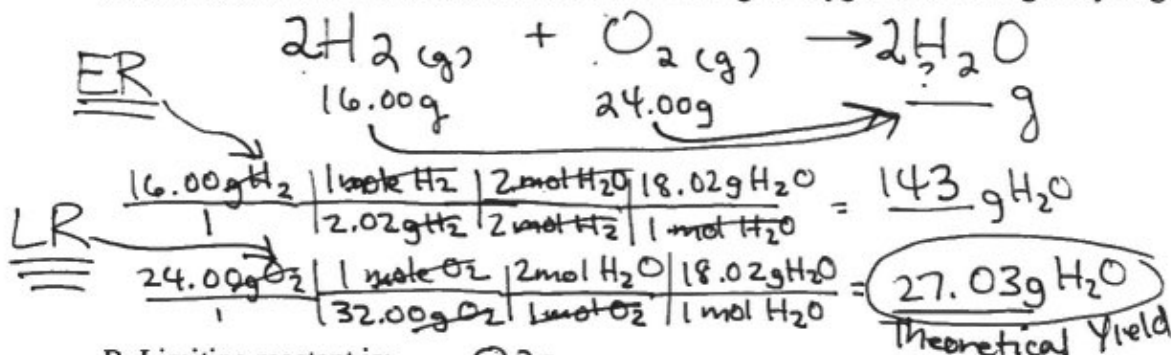
* * Why use an excess of a reactant? ① It makes the reaction faster and ② ensures that as much product as possible is produced (ensures that "all" of LR is used)

Sample Problems:

1. How many grams of aluminum oxide will form from the reaction of 8.00 g of aluminum with 8.00 g of oxygen?



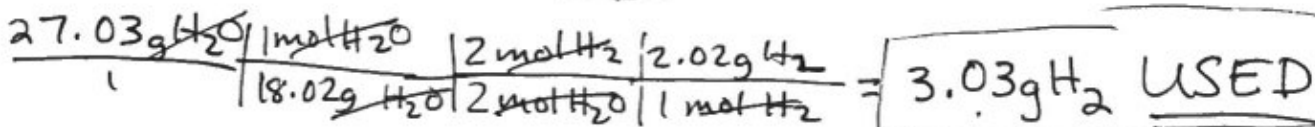
2. A. What mass of water can be made from 24.00 g of oxygen and 16.00 g of hydrogen?



B. Limiting reactant is: O₂

C. Excess reactant is: H₂

D. How many grams of the excess reactant is left over? 12.97g H₂



OR

$$16.00\text{g} - 3.03\text{g} = 12.97\text{g H}_2$$

available - used = excess (left over)

