

Process for Solving Limited
Reactant Solution Stoichiometry
Problems

1. Write the complete balanced equation for the reaction.
2. Determine the molar amount of each reactant, n_{reactant} , using the equation
 $n = V \times c$, where c is concentration (mol/L) and V is volume (L).
3. Determine the molar amount of the product formed using the mole ratio
$$\frac{n_{\text{product}}}{n_{\text{reactant}}}$$
based on the balanced equation and n_{reactant} for EACH reactant. The equation for this calculation is $n_{\text{product}} = n_{\text{reactant}} \times \text{mole ratio}$.
4. The masses of reactants and product can also be calculated using the equation $m = n \times M$, with the appropriate n and M values for each reactant and product.
5. The reactant that results in the production of the LEAST amount of product is the limiting reactant. It will limit the amount of product that is formed.