Stoichiometry

(Stoy-key-I'm-a-tree, well kind of)

Stoichiometry

- In Greek, stoikhein, means element and metron, means measure, so stoichiometry means the measure of elements.

The Mole Ratio

Mole Ratio

- The coefficients represent ratios between amounts of substances.

Example: $N_2 + 3H_2 \rightarrow 2NH_3$

BCA Table

- Only moles go into theBCA table.
- Reactants are consumed (-),and Products are formed (+)

Before				
Change				
After				

BCA Table for Stoichiometry

Step 1: Make sure the chemical equation is balanced.

Step 2: Fill in the ‘before’ row with moles by converting the grams to moles if needed. (Hint: Convert grams to mole by dividing by the molar mass)

Step 3: Divide the reactant (or given) moles in the ‘before’ row by the coefficients for that substance.

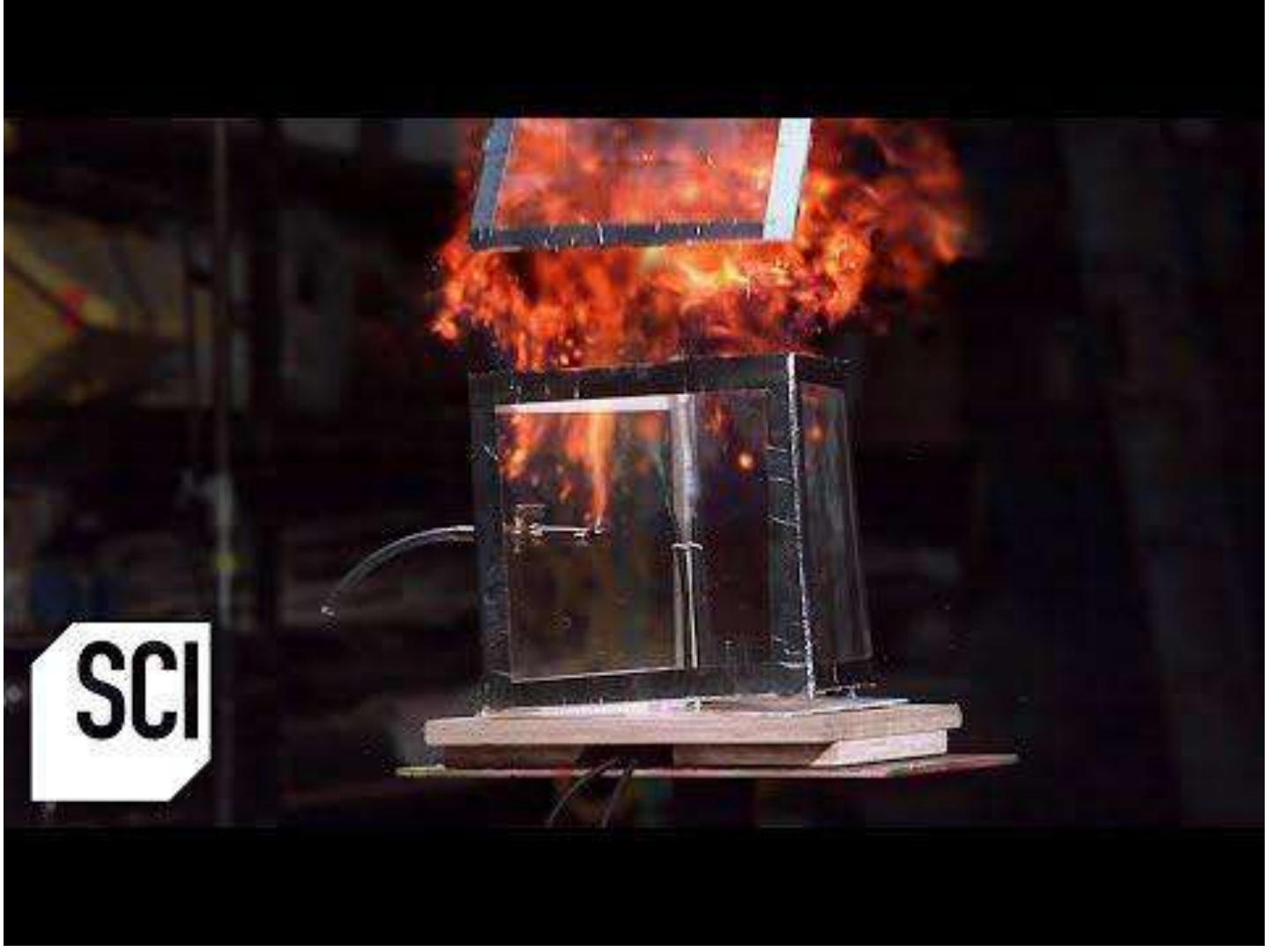
ICE Table for Stoichiometry

Step 4: For the product (or unknown), multiply the moles from the reactants by the coefficients.

Step 5: Answer will be in moles. If you need the answer in grams, convert, by multiplying the moles by the molar mass.

Limiting Reactant

- Controls how long the reaction will last
- Controls how much product will be formed
- The smallest mole of the reactants will be the limiting reactant
- Often one reactant will be limiting and the other one will be in excess.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