Name_____

Limiting Reactant Demo

Here is the chemical reaction when acetic acid (Vinegar) reacts with sodium carbonate:

$2C_2H_4O_2 + Na_2CO_3 \rightarrow 2NaC_2H_3O_2 + H_2O + CO_2$

1. What is the mole ratio of Acetic Acid ($C_2H_4O_2$) to Sodium Carbonate (Na_2CO_3)?

2. Complete the table as I do the demo.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Amount of $C_2H_4O_2$	10 mL (.016 moles)	10 mL (.016 moles)	10 mL (.016 moles)	10 mL (.016 moles)	10 mL (.016 moles)
Amount of Na_2CO_3	.105g	.21g	.42g	.84g	1.7g

Calculations

3. Find the number of moles of Na_2CO_3 contained in each of the balloons for the first row in the table. For the second row in the table calculate the amount of moles of Acetic Acid ($C_2H_4O_2$) needed to react with the amount of moles Na_2CO_3 you calculated in the column above. Show your work in the table below.

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5
Number of moles Na_2CO_3					
Number of Moles CO_2 that can be produced from amount of Na_2CO_3					

4. The amount of $C_2H_4O_2$ in each trial was .016 moles. How many moles of CO_2 can be produced from .016 moles of $C_2H_4O_2$?

5. Identify the limiting reactant for each trial done in the demo.