

turnitin report

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Limiting Reactants Lab



Materials

Baking soda

Vinegar

Cup or glass

Teaspoon and tablespoon to measure

Procedure

Part I

1. Place one level teaspoon (see below) of baking soda in a glass or cup. Place in sink.



2. Add one tablespoon of vinegar ¹ to the cup with the baking soda. Swirl the cup gently until all fizzing stops.

3. Why do you think the reaction stopped? Which reactant do you think was used up?

I think one of the reactants was used up

Vinegar

4. Test your hypothesis by adding a little more of the reactant the you thought was used up in the reaction. If you were right, the reaction should fizz again. Were you right?

Yes I was right

5. Based on your experimentation above, when one teaspoon of baking soda is mixed with one tablespoon of vinegar, which reactant is the limiting reactant?

Vinegar

6. The reactant that is not all used up, that has some left over after the reaction has stopped is called the excess reactant. Which reactant was the excess reactant in the procedure in step 2 above?

Baking soda

Part 2

1. Place one level teaspoon of baking soda in a glass or cup. Place in the sink.
2. Add five tablespoons of vinegar ¹ to the cup with the baking soda. Swirl the cup gently until all fizzing stops. How did the length of this reaction compare to the first one?

The reaction takes long compared to first one

3. Why do you think the reaction stopped this time? Which reactant do you think was used up?

One of the reactants was used up

Baking soda

4. Test your hypothesis by adding a little more of the reactant the you thought was used up in the reaction. If you were right, the reaction should fizz again. Were you right?

Yes

5. Based on your experimentation above, when one teaspoon of baking soda is mixed with five tablespoons of vinegar, which reactant is the limiting reactant?

Baking soda

6. Which reactant was the excess reactant in the procedure in Part 2 step 2 above?

Vinegar

Questions

Q1. In part 1 and part 2 above, you mixed the same two reactants. Explain how vinegar could be the limiting reactant in one reaction and baking soda could be the limiting reactant in the other.

There are two ways to define this determining reagent or reactant. One method is to make and analyze the mole proportion of the reactants used in this response (proposition 1).

Another way is to estimate the grams of products produced from those given amounts of reactants; the reactant that creates the smallest quantity of result is that determining reagent (way 2).

In the chemical reaction, this determining reagent, or limiting reactant, is the meaning that has been entirely ingested when the chemical reaction is full. The reactant decides the amount of merchandise delivered by the reaction in light of the fact that the reaction won't go far without it; as often as possible, various reagents are available in an overabundance of the amounts required to respond with the restricting reagent.

This deciding reagent (or constraining reactant or limiting specialist) in the synthetic response is the implying that is totally expended when the substance response is full. The measure of products shaped is dictated by the reagent since the reaction won't abandon it. On the off chance that at least one extra reagents are here in the overabundance of the

sums expected to react with these constraining reagents, they are distinguished as additional reagents or abundance reactants.

Q2. You are making ham and cheese sandwiches for a party. Each sandwich is made with three slices of ham, one piece of cheese, and two slices of bread. You have 30 slices of ham, 20 slices of cheese, and 3 loaves of bread. Each loaf of bread has 12 slices. How many ham sandwiches can you make? To receive credit for this, you must show your work using dimensional analysis to justify your answer. What is the limiting reactant (ingredient)? What are the excess reactants (ingredients)?

I can only make 10 ham sandwiches

Since one ham sandwich has to comprise 3 slices of ham

Therefore with 30 slices of ham I can only get 10 ham sandwiches

Slices of cheese and loaves of bread are excess reactants

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