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Forming a Precipitate – Activity Sheet Part 2

Objectives:

- To able to explain that for a chemical reaction to take place, the reactants interact, bonds between certain atoms in the reactants are broken, the atoms rearrange, and new bonds between the atoms are formed to make the products.
- To be able to explain that this definition also applies to the production of a solid called a **precipitate**.

Question to Investigate:

Is the solubility of the precipitate different than the solubility of baking soda and calcium chloride?

Materials for Each Group

- Dry precipitate on paper towel
- Balance
- 3 small plastic cups
- Graduated cylinder
- ¼ teaspoon
- Popsicle stick (optional)
- Calcium chloride
- Baking soda
- Water

Procedure

1. Label 3 cups sodium bicarbonate, calcium chloride, and precipitate.
2. Use a spoon or popsicle stick to scrape the precipitate into a pile.
3. Scoop up the precipitate into a ¼ teaspoon until it is as full as possible. Place the ¼ teaspoon of precipitate into its labeled cup.
4. Place ¼ teaspoon of sodium bicarbonate and calcium chloride into their labeled cups.
5. Add 25 mL of water to each cup and gently swirl until the solids dissolve as much as possible. Look to see the amount of solid that remains undissolved in each cup.

1. Should we use the same amount of water and substance for each test? Why?

Data:

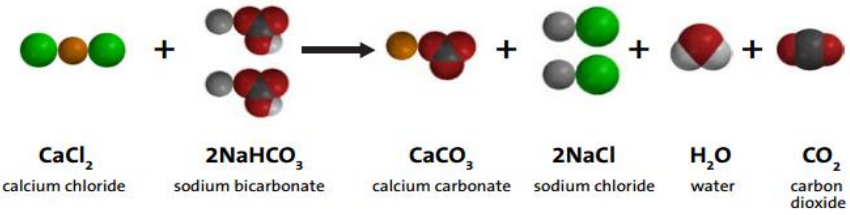
Solids in the Reaction	*Reactant or Product*	*Does the solid dissolve in water?*
Baking Soda		
Calcium Chloride		
Salt		
Precipitate		

Conclusion:

2. In your own words, define what solubility is?

3. How is a solubility test useful for identifying a solid?

4. Look at the following chemical equation for this chemical reaction below.



Which of the solids do you think the precipitate is? Why did you make this conclusion?

Demonstration:

Your teacher will add drops of ammonia to copper II sulfate solution.

5. How can you tell that something new was made when the copper II sulfate and ammonia reacted?

6. How can you tell that something new was made when the substances reacted with hydrogen peroxide?

Your teacher added drops of ammonia to copper II sulfate solution.

7. How can you tell that something new was made when the copper II sulfate and ammonia reacted?

8. How can you tell that something new was made when these substances reacted with hydrogen peroxide?