

Endo. & Exo. Reactions Lab

Background: Chemical reactions occur all of the time and as they occur they produce or require heat. These reactions are typically categorized as either Exothermic or Endothermic reactions. Remember that an exothermic reaction means that the reaction is producing heat as a byproduct of the reaction. While an endothermic reaction means that the reaction requires heat to go through the reaction. This lab is set for you to look at these reactions and determine what Endo. and Exo. Reactions look like.

Purpose:

Materials:

- 5 beakers
- Water
- Epsom salt
- Baking soda
- Vinegar
- Steel wool pad
- Thermometer
- Stirring rod
- Goggles
- Ice
- Dry yeast
- Hydrogen peroxide

Procedures:

1. Set-up beakers and label them appropriately.
2. Obtain needed equipment if not already done.
3. Obtain needed substances 20mL for liquid (hold off on ice).
4. PLACE all of **SUBSTANCE #1** in your beakers.
5. **First**, check the temperature of substance #1 in the first set.
6. **Second**, place substance #2 in the same beaker as substance #1.
7. **Third**, keeping the thermometer in the beaker, measure the temperature, maintain for about 30 seconds.
8. **Fourth**, stir if necessary, but make sure to clean stirring rod in between each session.
9. **Fifth**, record final temperature and observations.
10. Repeat for the remaining sets.
11. Clean up.

Data:

Set	Substance #1	Substance #2	Temp. Before	Temp. After	Exo or Endo	Observation
1	Water	Epsom salt				
2	Vinegar	Baking soda				
3	Vinegar	Steel wool pad				
4	Hydrogen Peroxide	Dry yeast				
5	Water	Ice				
6	Water					

Discussion: (Answer the questions and turn in with your pre-lab)

1. Why should you wait the same amount of time for each trial?
2. Which reactions were endothermic?
3. Which reactions were exothermic?
4. Which reactions produced the most energy?
5. Graph the results with the set # on the X axis and T on the Y.