

Chemical Reactions and Equations

Research/Experiment

Chemical Reactions and Equations

You have learned about the different types of chemical reactions, and how to balance an equation resulting from a chemical reaction. But, practice makes perfect! So, let's perform an experiment and put your knowledge into action.

Aim: In this experiment, you will observe the chemical reaction and determine the result, identify the type of chemical reaction, and write a balanced equation (Yes, you will need to balance the equation, if it is not already balanced!).

Here is what you need to do:



- Arrange for the materials and perform the experiment
- Observe and examine the chemical reaction
- Determine the type of chemical reaction
- Write a balanced equation for the chemical reaction
- Provide your analysis of the chemical reaction

Things you will need:



- 0.6 grams of potassium chlorate (KClO_3)
- 0.02 grams of magnesium dioxide (MnO_2)
- Test tube with stand
- Burner
- Delivery tube
- Collecting flask/bottle
- Graduated cylinder

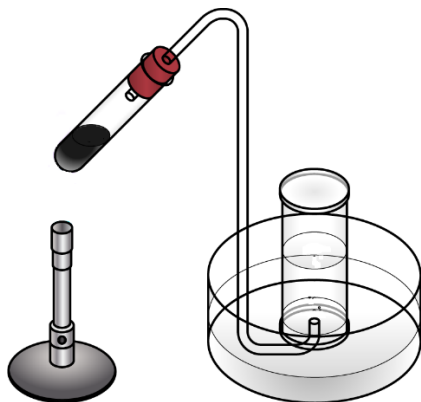
Some precautions you need to take:



- This experiment involves heat, so be careful while handling hot objects. Use a pair of gloves.
- Wear splash goggles
- Protective clothing
- Most importantly, adult supervision!

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Example of lab setup



The Experiment:

Now that you have set up your equipment, perform the following steps:



1. Setup the equipment as shown in the example above.
2. Fill water in a collecting bottle to its full capacity, and invert it into the graduated cylinder.
3. Add 0.6 grams of potassium chloride in a test tube.
4. Add 0.02 grams of magnesium dioxide in the same test tube and mix well.
5. Fit the test tube on a stand.
6. Start the burner and heat the bottom of the test tube.
7. Observe what happens! What reaction do you see? What is the product of this reaction? Can you write down the chemical equation and balance it?

Some questions to help you along the way:



- When heated, potassium chlorate can produce a chemical change by itself. So, why did we add magnesium dioxide?
- What do you call a chemical reaction which is carried out by heating?

Finally, take some time to write your own analysis of this chemical reaction. What else do you observe?

Happy experimenting!