



Before I start and before I ask my teacher I have....

- Put on PPE (Goggles, Lab Coat, Gloves)
- Read the entire lab thoroughly, for understanding.
- Have all equipment necessary to complete the lab
- Read the lab again, before asking.

3-3A Calcium in Water

Find Out ACTIVITY

In this activity, you will observe a chemical reaction between calcium metal and water.

Safety



- Calcium reacts with moisture, including the moisture naturally found on hands.
- Be careful around open flames.
- Tie back long hair.

Materials

- two 400 mL beakers
- two medium-sized test tubes
- water
- calcium metal
- paper towel
- test tube clamp or tongs
- candle and lighter or matches
- wooden splints
- phenolphthalein indicator solution

What to Do

1. Place about 300 mL of water in a 400 mL beaker. Fill a test tube with water and place it upside down in the beaker. Keep out the air as much as possible.
2. Make sure your hands are dry. Obtain a few pieces of calcium metal directly from your teacher, who will place them on a piece of paper towel.



3. Observe the calcium and then drop it into the water. Cover the calcium with the test tube to catch the gas that is produced.
4. As soon as the test tube is filled with gas, lift it out of the water. Be careful to keep the mouth of the test tube pointed down.
5. Hold the test tube with a test tube clamp. Using the candle and a wooden splint, test to see whether the gas produced is hydrogen (flaming splint will cause a "pop") or oxygen (glowing splint will reignite).
6. Using a clean beaker and test tube repeat the experiment from the beginning. This time add 5 drops of phenolphthalein indicator solution to the water in the beaker before adding calcium.
7. Clean up and put away the equipment you have used.

What Did You Find Out?

1. What changes (state, colour, shape of solid, formation of gas) did you observe during the chemical reaction?
2. What is the likely identity of the gas that was produced?