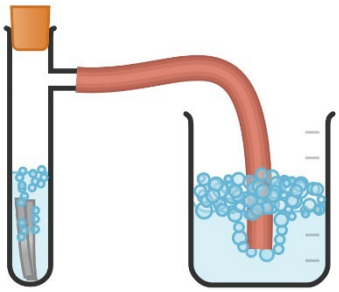
Making and Testing Hydrogen Gas (H_2)

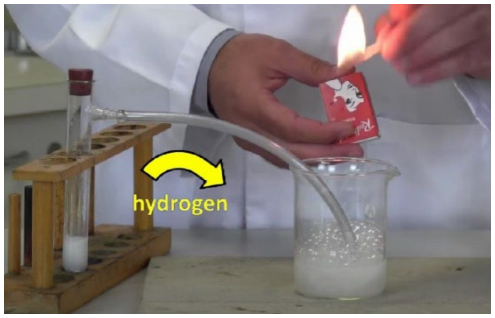
Name: _____

Aim: To produce hydrogen gas in a chemical reaction and to then test its flammability.

Equipment: test tube rack; test tube with side arm; rubber stopper; rubber tubing; 250 mL beaker; detergent; heat-proof mat; matches.

Chemicals: Magnesium ribbon (Mg), hydrochloric acid (HCl)





Method:

1. Pour about 50 mL of water into a 250 mL beaker.
2. Add about 20 mL of detergent, enough to allow the mixture to produce bubbles.
3. If you have it, add about 5 mL of glycerine (aka glycerol). (This helps produce slightly bigger bubbles.)
4. Attach the rubber tubing to the side arm of the test tube.
5. Put 2 5-cm-long strips of magnesium ribbon into the test tube.
6. Add enough hydrochloric acid to cover the magnesium. A chemical reaction will occur.
7. Place a stopper onto the test tube and then put the end of the rubber tubing into the soapy water.
8. Once the bubbles have built up, light a match and drop it into the bubbles.

Observations: (Describe the reaction between the Mg and the HCl, describe the build up of the bubbles, and describe what happened when you dropped the lit match into the bubbles.)

_____

_____

_____

_____

_____

_____

Questions:

1. Label the diagram above.
2. Write down the chemical equation for the reaction which produced the hydrogen gas.

(word equation) _____

(symbol equation) _____

3. Write down the chemical equation for the reaction between hydrogen gas and oxygen gas.

(word equation) _____

(symbol equation) _____

A chemical reaction in which a substance burns (which means that it combines rapidly with oxygen), is called a **combustion reaction**.