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**Preparation of Oxygen Lab**

**Background**

About twenty percent of Earth’s atmosphere is oxygen. Oxygen gas is colorless, odorless, and tasteless. You, as well as most living organisms, require oxygen for respiration.

On Earth, most metallic elements are found as oxides. An oxide is a compound containing oxygen and another element. One oxide with which you are familiar is silicon dioxide – sand. Sand and water are the most common compounds of oxygen on this planet’s surface.

**Chemicals**

 Water Hydrogen Peroxide Manganese Dioxide



**Procedure**

1. Collect the materials you need for the lab: water bath container, 2 large test tubes, rubber stopper with tube, and 10mL graduated cylinder.
2. Fill a water bath full of water from the sink. Make sure the overflow tube is in the sink drain.
3. Fill a test tube full of water from the sink. Put your thumb over the top, turn the test tube upside down and submerge it in the water bath. Remove your thumb. If there is any air in the test tube, repeat this step again until there is no air in the test tube.
4. Using an electric balance measure out 0.5g of Manganese Dioxide using weighing paper. Be sure to put the weigh paper on the scale and zero the scale out first. Pour the Manganese Dioxide into the large test tube then put your weighing paper into the trash can.
5. Using a graduated cylinder, measure out 10mL of Hydrogen Peroxide.
6. Prepare to collect the gas by preparing the rubber stopper with the tube. To do this, place the tube under the test tube while it is still in the water bath. It is alright if the test tube leans back as long as the mouth of the test tube does not let any air in. (See picture)
7. Pour the Hydrogen Peroxide from the graduated cylinder into the large test tube. IMMEDIATELY put the rubber stopper on the flask and start collecting the gas.
8. Collect gas until the test tube is at least ¾ full.
9. Stop the collection of gas and record your observations. Be sure to include information regarding color and gas production.
10. Before you release the gas show your teacher and get a signature for a grade.
11. You can dispose of the test tube materials down the sink. Be sure to rinse the test tube and graduated cylinder before you put them back where you collected them. Make sure your station is picked up.

**Observations**

**Analysis**

1. You observed the decomposition of Hydrogen Peroxide using the catalyst Manganese Dioxide to produce water (H2O) and Oxygen gas (O2). The chemical formula for Hydrogen Peroxide is H2O2. The chemical formula for Manganese Dioxide is MnO2.

a. What elements are in each compound?

Hydrogen Peroxide -

Manganese Dioxide -

Water -

Oxygen gas -

b. How many oxygen atoms are in each compound?

Hydrogen Peroxide -

Manganese Dioxide -

Water -

Oxygen gas -

2. Did a chemical reaction occur? Explain why or why not.

3. Why did you have to remove all of the air from the test tube before you began collecting the gas?

4. Describe what you know about oxygen gas?

5. How are most metallic elements found on Earth?

6. What are the two most common compounds that contain oxygen on Earth?