

T4 Collection Gases over Water

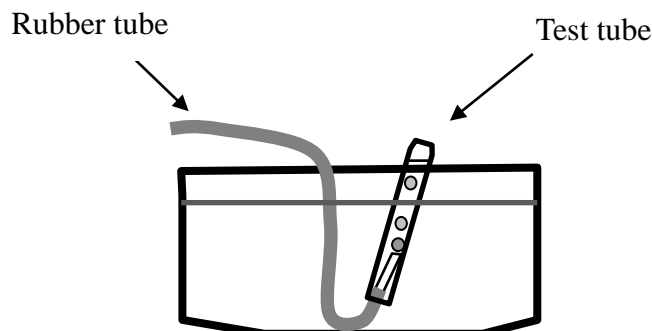


Figure T4-1 Collection gases over water

Collection gases over water is used to collect water-insoluble or slightly water-soluble gases generated from a chemical reaction. Gas generated from reaction is directed into a test tube or bottle which is filled with water. As gases accumulate in the test tube, water is displaced out. Oxygen (O_2), nitrogen (N_2) and hydrogen (H_2) gases can be collected by this method. For gases which are soluble or may react with water, i.e. ammonia (NH_3) and hydrogen chloride (HCl), are not suitable to be collected by this method.

Operation

1. Invert the test tube that is filled with water into the tub of water.
2. Place the gas generating rubber tube into the opening of test tube and the gases displace the water out.
3. When the gas bubbles emerge from the opening of test tube, it means the tube is filled with gases; take rubber tube out of the test tube.
4. You may cover the opening of test tube with your thumb and stand the test tube upside down on the benchtop (opening pointed downward); or cover it with a rubber stopper.

References

1. Hill, J. W.; Petrucci, R. H.; McCreary, T. W.; Perry, S. S. *General Chemistry*; 4th ed.; Pearson Prentice Hall: New Jersey, 2005.