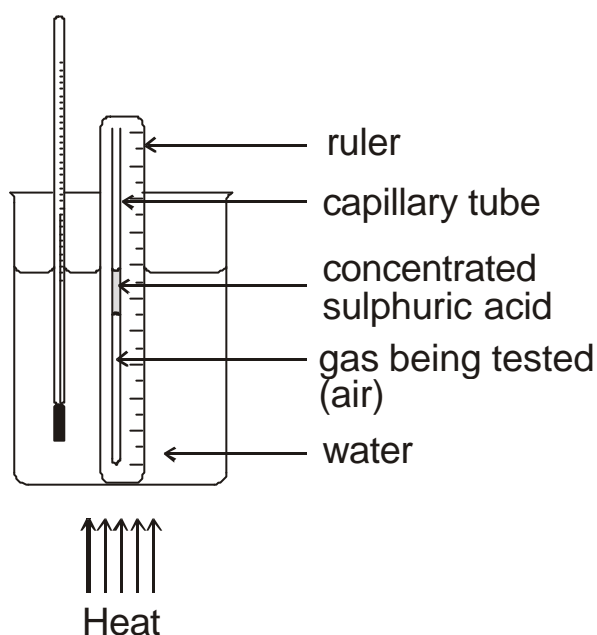


Experiment to verify Charles' Law and find the Absolute Zero of Temperature

Warning!

This method usually gives fairly bad results but if you are asked to describe an experiment to verify Charles' law in an examination, it will do! Try to think of the most probable source of error in the experiment as described below.

Set up apparatus as shown in the diagram below. The law will be verified by plotting suitable graphs.



Using this apparatus, the temperature of the gas can not be measured directly. We will assume that the temperature of the gas is the same as the temperature of the water. The volume of the gas will not be measured but we will assume that the tube is of uniform cross-sectional area. This means that changes in volume are directly proportional to changes in the length of the air column.

You should be able to explain

- how the results are analysed to verify the law
- why the gas is kept in the tube using concentrated H_2SO_4
- how this apparatus ensures that the pressure of the gas remains constant during the experiment.