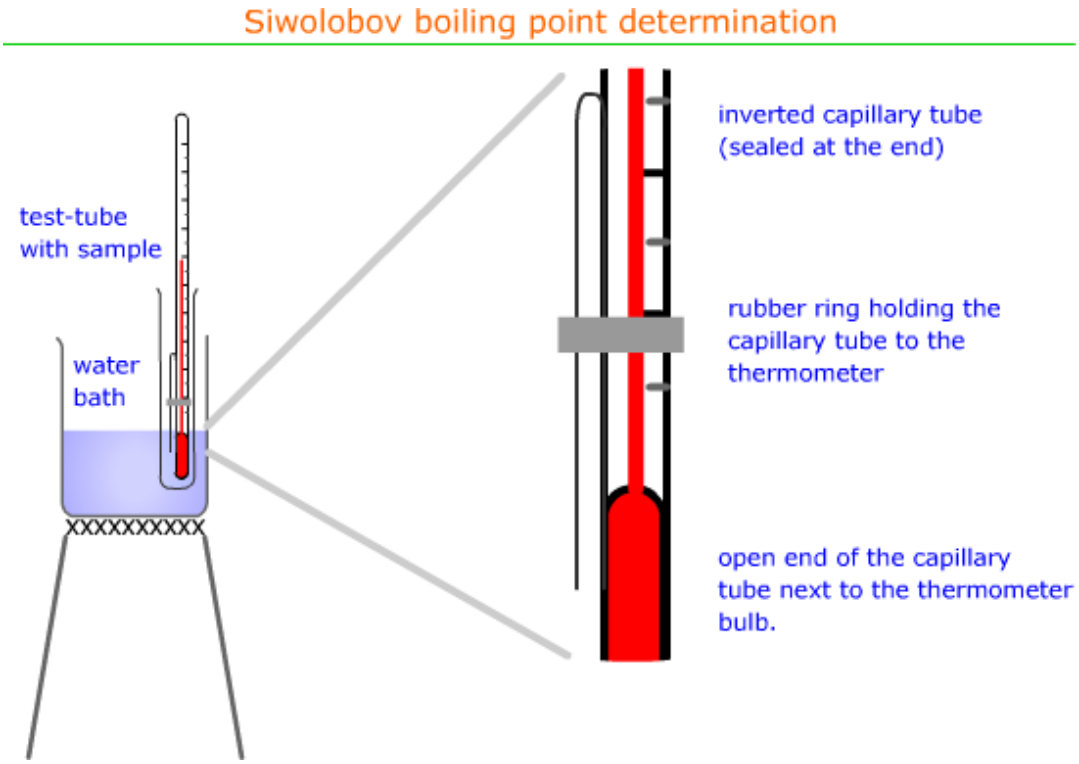
Boiling point

The boiling point of a liquid is the temperature at which the vapor pressure of the liquid is equal to atmospheric pressure.

The boiling point will be determined using Siwolobov's method below.



Experimental procedure

The boiling point may be determined using a glycerine bath for water (see diagram).

For liquids with boiling points higher than 90 °C, the water bath can be replaced by a glycerine bath (boiling point 290 °C).

A sample of about 10ml of water may be used – the volume is not critical as the vapour pressure (and hence, the boiling point at this atmospheric pressure) is independent of everything apart from temperature.

The capillary tube is sealed at one end by rotating carefully in a Bunsen burner flame. Allow it to cool before continuing. Make sure that the rubber fixing ring is not beneath the surface of the water.

The glycerine is pre-heated to about 140°C and the test-tube containing the water is lowered into the glycerine bath until a steady stream of bubbles is observed coming out of the capillary tube. The apparatus is then removed from the water bath until the steam of bubbles stops. The temperature is recorded at this point.

This step is repeated several times until the readings on the thermometer are constant.

Record the atmospheric pressure of the day.

Safety: Hot glycerine burns. Safety glasses and care.