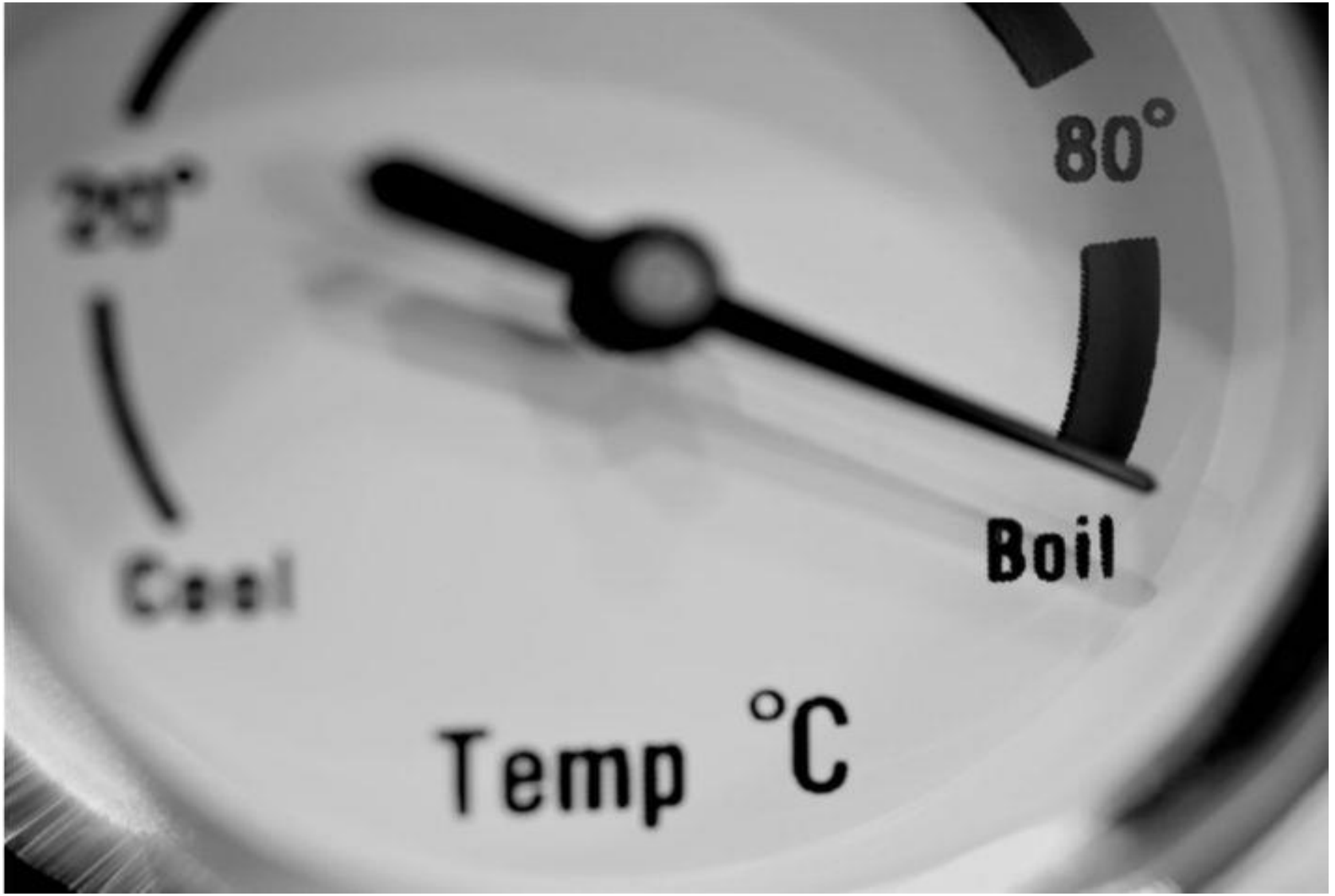
Boiling point



Determination of boiling point

- The boiling point of an organic liquid is the temperature at which its vapor pressure equals the atmospheric pressure over the liquid , or it is the temperature at which the vapor and liquid phases are in equilibrium at a given pressure. The boiling point is considered as a criterion of purity of a compound and is useful for identification of organic compounds. Similar to the melting point the boiling point may be sharp or may very over a temperature range. Pure liquids have sharp boiling points while mixtures show a boiling point range.

- The atmospheric pressure plays an important role in determination of the boiling point correctly. Reduction of the pressure leads to a decrease or a depression in the boiling point and vice versa.

Procedure •

1. A 5- cm capillary tube closed from one end is inverted upside down and is attached to a thermometer by a rubber ring.

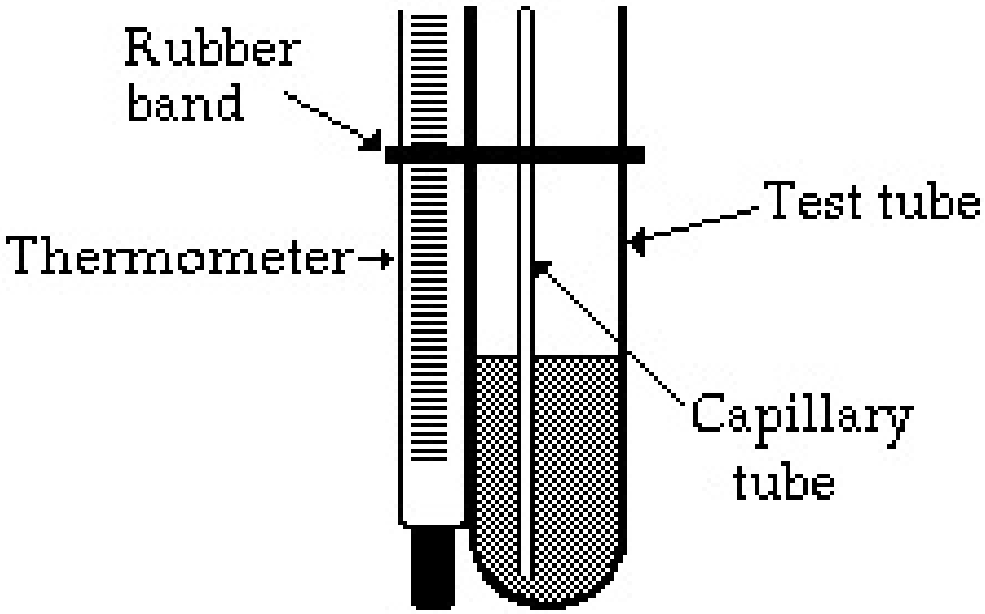
2. Place them in a clean and dry test tube containing a small quantity of a liquid whose boiling point is to be measured (the rubber ring should be above the surface of the liquid).

3. The whole assembly is to be placed in an oil bath.

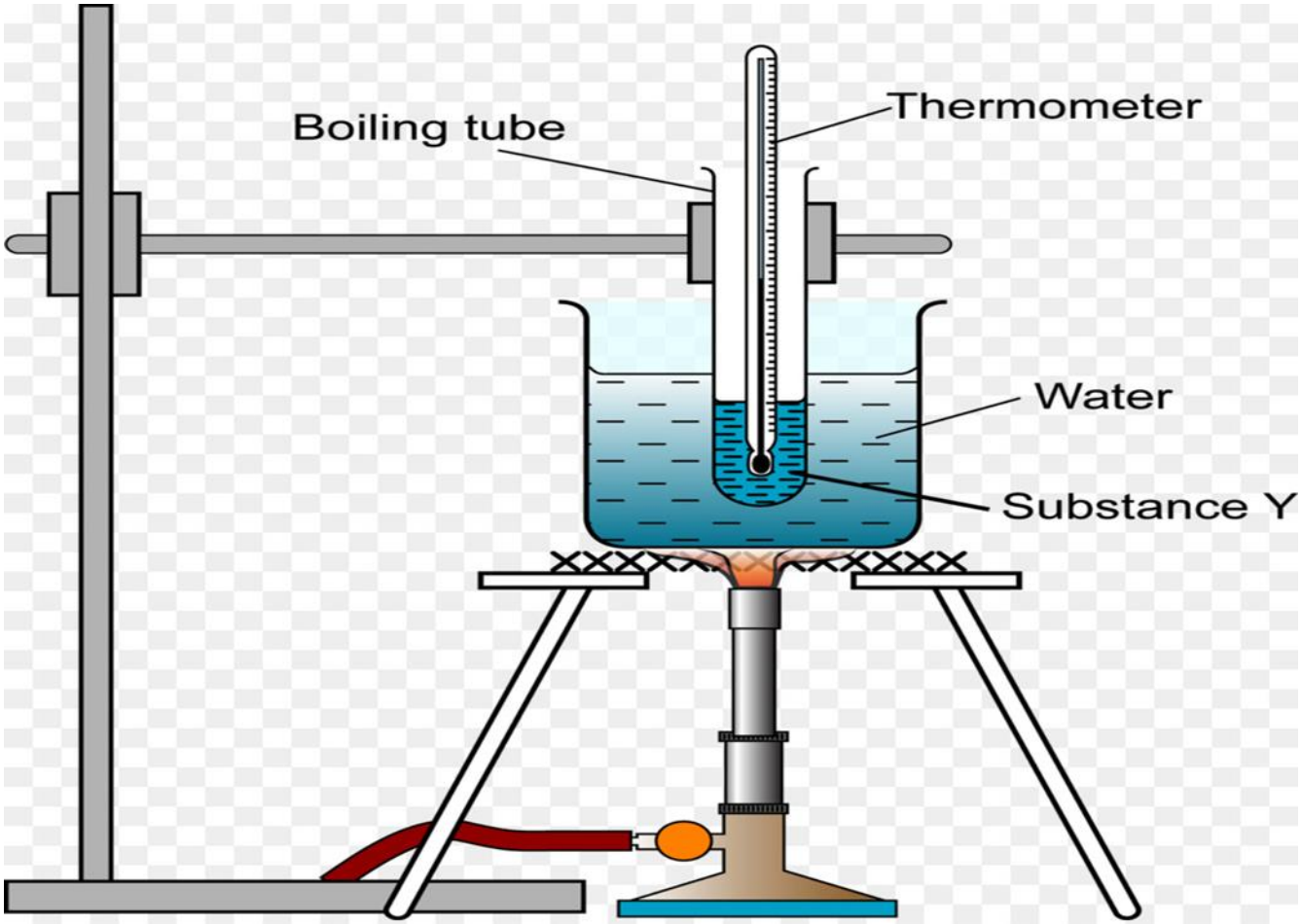
4. Start heating with continuous stirring until a rapid stream of bubbles comes out of the capillary tube (inside the liquid).

5. Remove the flame and allow the oil bath to cool so that the bubble stream will become slower and slower as the temperature drops until a point is reached at which bubbling ceases and the liquid starts to raise to raise inside the capillary tube.

6. Record this temperature as the boiling point.



Boiling Point Apparatus


Boiling tube
Thermometer
Water
Substance Y