

Boiling Point Determination Procedure

1. Make a test-tube assembly by using the following directions and illustration.

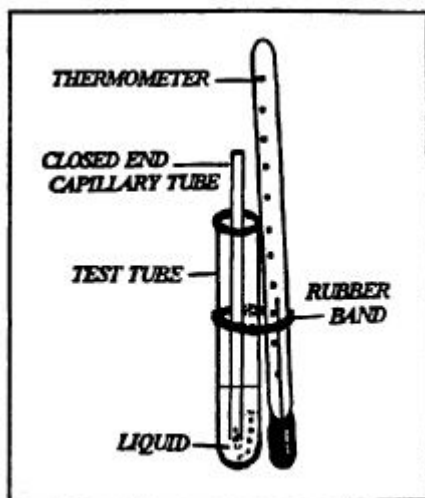
a. Place about 1 mL of your liquid in a small test-tube. (If you have 1mL)

b. Using a small rubberband, attach a thermometer to the outside of the test tube. If no rubberbands are available, put your thermometer into a Split Stopper and Clamp it. The thermometer bulb should be even with the test-tube's bottom.

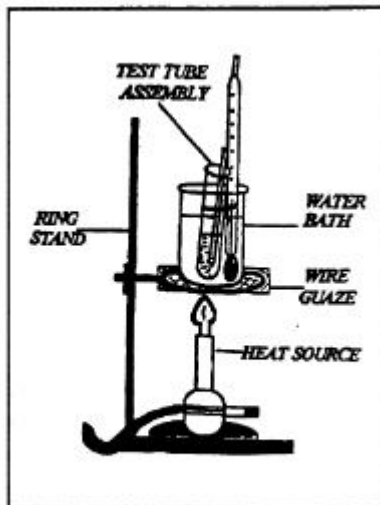
c. Insert an inverted closed end capillary tube into the test tube.

2. Make a *water bath assembly by using the following directions and illustration.

a. Half-fill a 100 mL beaker with warm tap water. [Note: a water bath is used if the boiling point of the material is expected to be less than the boiling point of water; otherwise, **an oil bath is needed.**



Test Tube Assembly ↑



Heating Assembly ↑

b. Place the above test-tube assembly in the water bath so that the surface level of the liquid in the test-tube is beneath the surface level of the water bath.

c. Place the beaker on the wire stand and, stirring frequently to insure even heating, carefully heat the water bath with your heat source until the water bath boils and a rapid stream of bubbles continuously emerges from the capillary tube. [Note: if an oil bath is used, the oil does not boil; the stream of bubbles from the capillary tube is the sole indicator that the liquid in the test-tube is boiling.]

d. **Remove the heat source** and begin observing the stream of bubbles.

e. When the last bubble emerges from the capillary tube, record the temperature.