

Experiment No.(5) Fehling's Test:

- This is an important test to detect the presence of reducing sugars and aldehydes through the use of Fehling's solution.
- carbohydrate reduces deep blue solution of copper (II) ions to red precipitate of insoluble copper oxide

Material:

1. Carbohydrate solution (glucose 1-2 %).
2. Fehling's solution which is a mixture of two solutions :
Fehling's "A" uses (35 g) $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ dissolved in (500 ml) distilled water containing 2 drops of dilute sulfuric acid.
Fehling's "B" uses (147 g) of potassium tartrate and NaOH in (250 ml) of distilled water. Potassium tartrate is dissolved first then (50 g) of NaOH is that is previously dissolved in (100 ml) of distilled cold water. Then the volume is completed to (500 ml).
3. The two solutions are stored in cold place and when needed they are mixed in equal percentage and the mixed solution is called Fehling's solution.

Method:

1. Two ml of a sample solution is placed in a test tube.
2. Added two ml of Fehling's solution to the test tube and mix well with the sample solution.
3. Place the tube in a water-bath at boiling point for a period of time.
4. On heating red precipitate of insoluble copper oxide is formed.

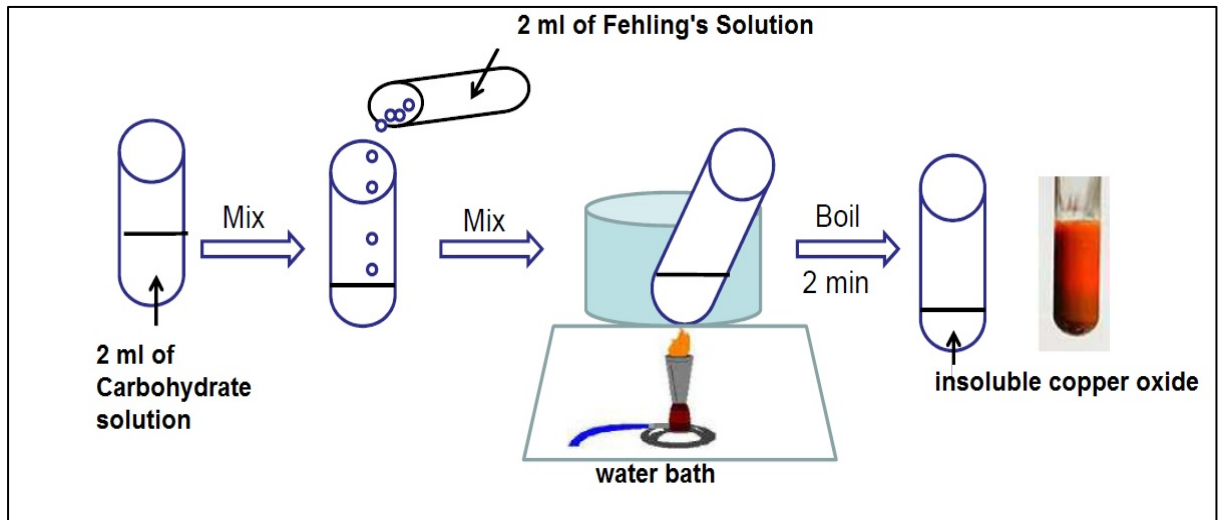


Figure 5. Procedure to Fehling's Test.