

Chemical Oxygen Demand

Range : 40 – 400mg/l as O₂

The Chemical Oxygen Demand (COD) is the measure of organic compounds in water. Therefore it is useful in determining the quality of water. It is expressed in terms of mg/l, indicating the mass of oxygen consumed per litre of solution.

Procedure :

1. To start with, preheat a hot plate by switching it on 15 minutes before starting the procedure.
2. Transfer 2ml sample, using syringe S to the screw capped bottle (SCB) marked S.
3. Transfer 2ml distilled water (Blank), using syringe B to the SCB marked B.
4. Add 1ml of **CODR1** in each SCB using 1ml syringe.
5. Fill **CODR2*** in the small glass tube (provided) up to the mark and transfer content in the SCB-S. Similarly repeat and transfer **CODR2** in to SCB-B. Close the cap tightly and swirl it.
6. Water bath: Fill the glass beaker with water up to its half level. Now place this glass beaker on the hot plate and allow water to boil.
7. Immerse both the above SCB in the boiling water, Keep under boiling conditions for 2 hours. Maintain the hot water level in the beaker, such that reagents in the SCB are completely immersed.

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8. After 2 hours of heating, remove the SCB from water bath and place aside for cooling to room temperature. This is attained in about 10 minutes, not exceeding 20 minutes, proceed with next step.
9. Remove the cap and add 2-3 drops of **CODR3** mix well then start addition of **CODR4** counting the number of drops, while mixing until the color changes from bluish green to reddish brown. Note number of drops added in sample (**S**) and number of drops added in blank (**B**)

Calculations :

COD mg/l as O₂ = 20 x (No. of drops of **CODR4** blank – No. of drops of **CODR4** Sample)

*Note :

1. Reagent CODR2 is to be handled with care as it is an acid. In case of contact with skin or (spillage on body) Please wash with plenty of cold running water. Seek medical help.
2. Rinse SCB and syringe 2 to 3 times with de mineralised water for further usage.

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