

Dissolved Oxygen Titration

The Titration method for analyzing dissolved oxygen content utilizes a chemical reaction between Sodium Thiosulfate and the prepared, or "fixed", dissolved oxygen sample. The addition of Sodium Thiosulfate in small amounts chemically reacts with the fixed sample and results in a colorless mixture. The amount of dissolved oxygen in the water sample relates to the amount of Sodium Thiosulfate added. To determine the exact amount, a starch indicator is used to highlight the moment when all possible reactions are complete, and the mixture turns colorless. Each kit is outfitted with instructions that depict the "fixing" and titration procedures.



Titration Procedure

1. Fill the titration tube (0299) to the 20 mL line with the "fixed" sample and cap.
2. Fill the Direct Reading Titrator (0377) with Sodium Thiosulfate, 0.025N (4169). Make sure no air bubbles are present in the syringe.
3. Insert the Titrator into the center hole of the titration tube cap. While gently swirling the tube, slowly press the plunger to titrate until the yellow-brown color is reduced to a very faint yellow.
NOTE: If the color of the "fixed" sample is already a very faint yellow, skip to Step 4.
4. Carefully remove the Titrator and cap and add 8 drops of Starch Indicator Solution (4170WT). Sample should turn blue. (Be careful not to disturb the Titrator plunger, as the titration begun in Step 3 will be continued in Step 5).
5. Replace the cap and Titrator. Continue titrating until the blue color just disappears. Read the test result directly from the scale on the side of the barrel, where the large ring on the Titrator meets the Titrator barrel.
6. Record as ppm dissolved oxygen.
7. Each minor division on the Titrator scale equals 0.2 ppm.
8. If the plunger tip reaches the bottom line on the Titrator scale (10 ppm) before the endpoint color change occurs, refill the Titrator and continue the titration. Make sure to stop at exactly 10 before refilling. When recording the test result, be sure to include the value of the original amount of reagent dispensed (10 ppm).
9. The Sodium Thiosulfate titrate will be replaced every 6 months to reduce inaccuracy due to contamination.