

## Dissolved Oxygen Test Procedure

Use test tube caps or stoppers, not your fingers, to cover tubes during shaking or mixing.



Hold dropper bottles vertically upside-down, and not at an angle, when dispensing a reagent. Squeeze the bottle gently to dispense the reagent one drop at a time.



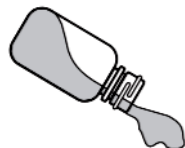
Thoroughly rinse test tubes before and after each test.



Avoid prolonged exposure of equipment and reagents to direct sunlight. Protect reagents from extremes of temperature.



Wipe up any reagent chemical spills immediately.



Tightly close all containers immediately after use.



Do not interchange caps from containers.

### Part 1 - Collecting the Water Sample (upstream from where you stand)

1.

Rinse the Water Sampling Bottle (0688-DO) with the sample water.



2.

Tightly cap the bottle, and submerge it to the desired depth.



3.

Remove the cap and allow the bottle to fill.



4.

Tap the sides of the bottle to dislodge any air bubbles.



5.

Replace the cap while the bottle is still submerged.



6.

Retrieve the bottle and make sure that no air bubbles are trapped inside.



### Part 2 - Adding the Reagents **REMINDER: Check expiration dates on chemicals.**

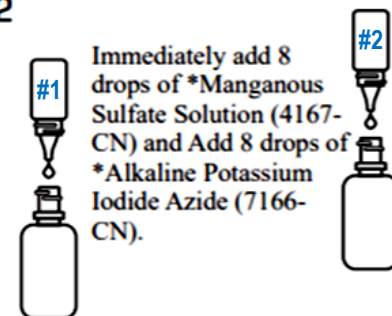
**NOTE: Be careful not to introduce air into the sample while adding the reagents.**

1



Remove the cap from the bottle.

2



Immediately add 8 drops of \*Manganous Sulfate Solution (4167-CN) and Add 8 drops of \*Alkaline Potassium Iodide Azide (7166-CN).

3

Cap the bottle and mix by inverting several times. A precipitate will form.



4

Allow the precipitate to settle below the shoulder of the bottle.



5

Add 8 drops of \*Sulfuric Acid, 1:1 (6141WT-CN).



6

Cap and gently invert the bottle to mix the contents until the precipitate and the reagent have totally dissolved. The solution will be clear yellow to orange if the sample contains dissolved oxygen.



**NOTE: At this point the sample has been "fixed" and contact between the sample and the atmosphere will not affect the test result. Samples may be held at this point and titrated later.**

**\*WARNING: Reagents marked with an \* are considered to be potential health hazards.**

## Part 3 - The Titration

1

Fill the titration tube (0608) to the 20 mL line with the fixed sample. Cap the tube.



2



Depress plunger of the Titrator (0377).

3

Insert the Titrator into the plug in the top of the Sodium Thiosulfate, 0.025N (4169-CN) titrating solution.



**\*\*Leave the plastic tip ON the Titrator**

4

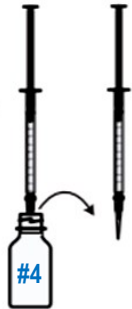
Invert the bottle and slowly withdraw the plunger until the large ring on the plunger is opposite the zero (0) line on the scale.



NOTE: If small air bubbles appear in the titrator barrel, expel them by partially filling the barrel and pumping the titration solution back into the reagent container. Repeat until bubble disappears.

5

Turn the bottle upright and remove the Titrator.



NOTE: If the sample is a very pale yellow, go to Step 9.



**\*\*Don't forget DUPLICATE PRECISION. Refer to chapter 5 in the SC Adopt-a-Stream Handbook for more information and FAQs.**

6

Insert the tip of the Titrator into the opening of the titration tube cap.



7

Add 1 drop at a time by **SLOWLY** pressing the plunger to dispense the titrating solution until the yellow-brown color changes to a very pale yellow. Gently swirl the tube during the titration to mix the contents.



8

Carefully remove the Titrator and cap. Do not disturb the Titrator plunger.



9

Add 8 drops of Starch Indicator Solution (4170WT-CN). The sample should turn blue.



**\*\*Or dark purple.**

10

Cap the titration tube. Insert the tip of the Titrator into the opening of the titration tube cap.



11

Continue titrating until the blue color disappears and the solution becomes colorless.

NOTE: If the plunger ring reaches the bottom line on the scale (10 ppm) before the endpoint color change occurs, refill the Titrator and continue the titration. Include the value of the original amount of reagent dispensed (10 ppm) when recording the test result.



12

Read the test result directly from the scale where the large ring on the Titrator meets the Titrator barrel. Record as ppm Dissolved Oxygen. Each minor division on the Titrator scale equals 0.2 ppm.

NOTE: When testing is complete, discard the titrating solution in the Titrator. Rinse Titrator and titration tube thoroughly. DO NOT remove plunger or adapter tip.

