

OZONE

INDIGO METHOD • CODE 365I-SC

QUANTITY	CONTENTS	CODE
15 mL	Chlorine Inhibitor	3990-E
250 mL	*Ozone Buffer	*3991-K
30 mL	Indigo Blue Stock Solution	3989-G
1	Sampling Apparatus	0681
1	Pipet, transfer, 1.0 mL	2-2170
1	Pipet, transfer, 5 mL	0329
1	Pump, 10 mL	30527
1	Bottle, HR Reagent, amber glass	0680-J
1	Graduated Cylinder, 50 mL, glass	0418

*WARNING: Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

Ozone is sometimes used in place of, or in conjunction with, chlorine or other halogens for disinfection of pool, spa, or drinking waters. Recently, large aquatic facilities have begun using ozone as a disinfectant in many artificial habitats.

APPLICATION: Drinking, pool and aquatic waters.

RANGE: 0.00–0.40 ppm Ozone, Low Range
0.00–2.50 ppm Ozone, High Range

METHOD: Ozone rapidly and stoichiometrically decolorizes Indigo Trisulfonate under acidic conditions.

SAMPLE HANDLING & PRESERVATION: Ozone is extremely unstable in aqueous solutions. Test must be performed immediately and the sample must not be agitated.

INTERFERENCES: Manganese at any level interferes.

PROCEDURE—LOW RANGE

A. PREPARATION OF HR REAGENT

- NOTE: The quantity of Indigo Blue Stock solution (3989) supplied will prepare one batch of HR Reagent for the High Range Ozone procedure or five batches of HR Reagent for the Low Range Ozone procedure.
1. Use the 50 mL graduated cylinder to carefully add 45 mL of *Ozone Buffer (3991) to amber glass bottle marked HR Reagent (0680).
 2. Use the 5 mL transfer pipet (0329) and pump (30527) to add 5 mL of Indigo Blue Stock Solution (3989) to the amber glass bottle. Cap and mix.

B. DETERMINATION OF OZONE

3. Use the 1.0 mL transfer pipet (2-2170) and pump (30527) to add 1.0 mL of HR Reagent to each of 2 clean tubes (0290).
 4. If chlorine is present add 3 drops Chlorine Inhibitor (3990) to each tube. Cap tubes.
 5. Take one of the prepared tubes (0290) and sampling apparatus (0681) to sampling site.
 6. Lower end of tubing of sampling apparatus to desired depth. Slowly withdraw and depress plunger several times to purge syringe and tubing. Slowly withdraw plunger to fill purged syringe.
 7. Remove plastic tubing from syringe. Remove cap from the prepared tube. Place tip of syringe against inside of the prepared tube. Slowly depress plunger and fill to the 10 mL line and cap. This is the Sample Tube.
 NOTE: DO NOT SHAKE OR INVERT THE SAMPLE.
 8. Fill the second prepared tube (0290) to the 10 mL line with ozone free water. This is the Reagent Blank.
 9. Press and hold **ON** button until colorimeter turns on.
 10. Press **ENTER** to start.
 11. Press **ENTER** to select TESTING MENU.
 12. Select ALL TESTS (or another sequence containing 71 Ozone-LR) from TESTING MENU.
 13. Scroll to and select 71 Ozone-LR from menu.
 14. Insert the **Reagent Blank** tube into chamber, close lid and select SCAN BLANK.
 15. Insert reacted **Sample Tube** into chamber, close lid and select SCAN SAMPLE. Record result.
 16. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.
- NOTE: HR Reagent must be made fresh **each week**. If reagent is refrigerated, it may be kept up to 3 weeks.

PROCEDURE-HIGH RANGE

A. PREPARATION OF HR REAGENT

- ☑ NOTE: The quantity of Indigo Blue Stock solution (3989) supplied will prepare one batch of HR Reagent for the High Range Ozone procedure or five batches of HR Reagent for the Low Range Ozone procedure.
- 1. Use the 50 mL graduated cylinder to carefully add 25 mL of *Ozone Buffer (3991) to amber glass bottle marked HR Reagent (0680).
- 2. Use the 50 mL graduated cylinder to carefully add 25 mL of Indigo Blue Stock Solution (3989) to the amber glass bottle. Cap and mix.

B. DETERMINATION OF OZONE

- 3. Use the 1.0 mL transfer pipet (2-2170) and pump (30527) to add 1.0 mL of HR Reagent to each of 2 clean tubes (0290).
 - 4. If chlorine is present add 3 drops Chlorine Inhibitor (3990) to each tube. Cap tubes.
 - 5. Take one of the prepared tubes (0290) and sampling apparatus (0681) to sampling site.
 - 6. Lower end of tubing of sampling apparatus to desired depth. Slowly withdraw and depress plunger several times to purge syringe and tubing. Slowly withdraw plunger to fill purged syringe.
 - 7. Remove plastic tubing from syringe. Remove cap from the prepared tube. Place tip of syringe against inside of the prepared tube. Slowly depress plunger and fill to the 10 mL line and cap. This is the Sample Tube.
 - ☑ NOTE: DO NOT SHAKE OR INVERT THE SAMPLE.
 - 8. Fill the second prepared tube (0290) to the 10 mL line with ozone free water. This is the Reagent Blank.
 - 9. Press and hold **ON** button until colorimeter turns on.
 - 10. Press **ENTER** to start.
 - 11. Press **ENTER** to select TESTING MENU.
 - 12. Select ALL TESTS (or another sequence containing 72 Ozone-HR) from TESTING MENU.
 - 13. Scroll to and select 72 Ozone-HR from menu.
 - 14. Insert the **Reagent Blank** tube into chamber, close lid and select SCAN BLANK.
 - 15. Insert reacted **Sample Tube** into chamber, close lid and select SCAN SAMPLE. Record result.
 - 16. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.
- ☑ NOTE: HR Reagent must be made fresh **each week**. If reagent is refrigerated, it may be kept up to 3 weeks.

