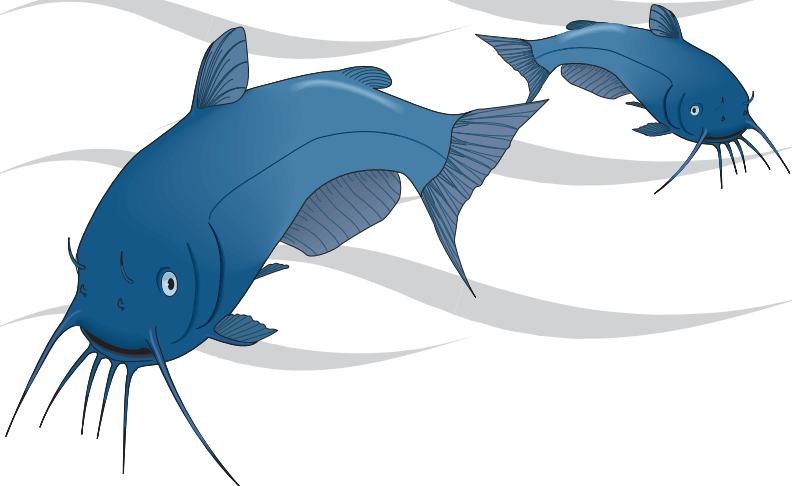


freshwater
aquaculture
Test kit Instruction manual

MODEL AQ-2/AQ-3
CODE 3633-03/3634-03



This manual provides step-by-step detailed instructions for the Model AQ-2 (Code 3633-03) and AQ-3 (Code 3634-03) test kits. It is important to review these instructions thoroughly before attempting to perform the tests by the short-form instructions contained in the case lid.

To order individual reagents or test kit components, use the specified code number.

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TESTING HINTS

1. Tightly close all reagent containers

immediately after use. Be sure not to interchange caps and pipets from different containers.

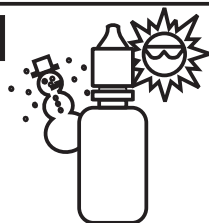


- 2.



Avoid prolonged exposure of equipment and reagents to direct sunlight.

- 3.



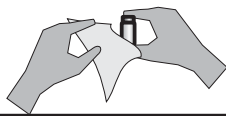
Protect reagents and components from extreme heat and cold.

4. Wipe up any reagent chemical spills, liquid or powder, as soon as they occur. Refer to label and accompanying

MSDS for proper reagent disposal.

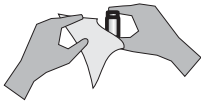


5. Use care when dispensing or handling all reagents. Some reagents also may cause permanent stains if spilled.



ANALYTICAL TECHNIQUES

1.



Clean glassware is a must for accurate results. Thoroughly rinse test tubes, caps, and stoppers before and after each use.

2.



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

3.

When adding sample to calibrated test tubes, be sure tube is filled to the appropriate mark. The bottom of the liquid (meniscus) should be level with the desired mark.



4.

When dispensing reagents from bottles fitted with dropper plug and cap, be sure to hold bottle vertically and gently squeeze to dispense the appropriate number of uniform drops.

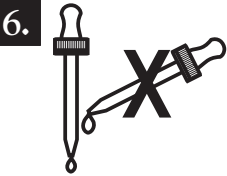


5.

For those reagents to be added with the enclosed screwcap pipet assemblies, remove polyseal cap on bottle and replace with screwcap pipet. **NOTE:** Make sure caps are clean. Replace polyseal cap for prolonged storage.



6.



When dispensing reagents, hold pipet vertically to assure uniform drop size.

7.

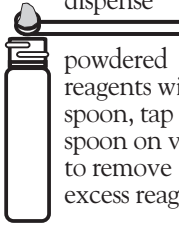
To fill pipets, squeeze rubber bulb and immerse into reagent. Release bulb to fill.



8.

To accurately dispense

powdered reagents with spoon, tap spoon on vial to remove excess reagent.



SAFETY INFORMATION

1.



Store the test kit in a cool, dry area.

2.

Read all instructions and note precautions before performing the test procedure.



Instruction Manual

3.



Material Safety Data Sheet

Read all Material Safety Data Sheets. Reagents marked with a * are considered possible health hazards.

4.



Read the labels on all reagent bottles. Note warnings and first aid information.

5.

Keep all equipment and reagent chemicals out of the reach of young children.



6.



CAUTION
AVOID SKIN CONTACT

Avoid contact between reagent chemicals and skin, eyes, nose, and mouth.

7.

Wear safety glasses when performing test procedures.



8.



In the event of an accident or suspected poisoning, immediately call the Poison Center phone number in the front of your local telephone directory or call a physician. Be prepared to give the name of the reagent in question and the LaMotte code number located in the upper left hand corner of the label, LaMotte reagents are registered with a computerized poison control information system available to all local poison control centers.

TEST METHODS

This test kit uses two basic analytical procedures common to field test kits. A brief explanation of each follows:

THE COLORIMETRIC PROCEDURE

In a visual colorimetric test, a sample is treated with reagent(s) to produce a color reaction, generally in proportion to the amount of the test factor present. The sample color is then compared against color standards representing known concentrations of the factor being tested over a specific range. The all-plastic Octa-Slide Viewer allows for a unique one-on-one color matching system.

- 1.** Hold the Octa-Slide Viewer so that non-direct light enters through the back of the viewer.



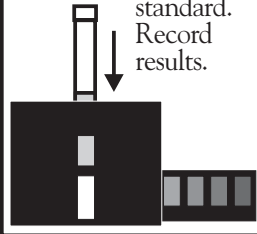
- 2.** Insert Octa-Slide Bar into the Octa-Slide Viewer (1100).



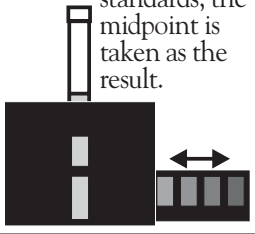
- 3.** Insert test tube containing reacted sample into Octa-Slide Viewer.



- 4.** Match sample color to a color standard. Record results.



- 5.** If sample color is between two standards, the midpoint is taken as the result.



NOTE: If the sample is darker than the highest standard, a dilution may be performed on a fresh sample, and the test repeated to bring the concentration within range.

DILUTIONS

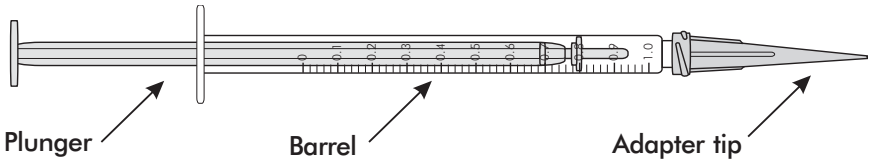
The calibrated test tubes (0106) included in this kit may be used to perform dilutions for the Ammonia Nitrogen and Nitrite Nitrogen tests. Distilled or deionized water is needed to perform dilutions.

The following table provides a quick reference guide for dilutions of various proportions. Once the dilution is prepared, use this diluted sample to perform the test, and multiply the result by the dilution factor to obtain the actual concentration.

Sample Size	Distilled Water to Bring to 10 mL	Dilution Factor
5 mL	5 mL	2
2.5 mL	7.5 mL	4

TITRIMETRIC PROCEDURE

In a titrimetric method, titrating solution (or titrant) is added to a treated sample until a color change occurs. The volume of titrant required to reach this endpoint is proportional to the concentration of the factor being tested. Direct Reading Titrators provide results directly in the appropriate concentration for the test.



The Direct Reading Titrator consists of a plastic barrel, a plastic plunger, and a plastic adapter tip. The adapter tip reduces the size of the drops that are dispensed, increasing the precision of the test results. DO NOT remove the adapter tip or plunger.

1.

Depress the Titrator plunger to expel air. Insert Titrator into the plastic fitting of the titrating solution bottle and invert.



2.

To fill Titrator, slowly withdraw the plunger until the large ring on the plunger is opposite the zero (0) mark on the scale.

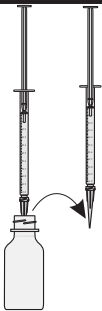


NOTE:

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.

3.

Turn the bottle right-side-up and remove the Titrator.



4.

Insert the Titrator into the center hole of the test tube cap. Follow individual test instructions to determine titration amounts.



5.

When testing is complete, discard titrating solution in Titrator. Rinse Titrator and titration tube thoroughly. Do not remove the plunger or the adapter tip from the Titrator.

TEST PROCEDURES

Proper control of water quality is an essential part of a successful aquaculture operation. Immediate test results provided by on-site water analysis equipment can confirm a healthy environment, or give early warning signals for required treatment.

- Develop a routine testing schedule.
- Keep records! Historical data is extremely important if treatments are required. Note environmental conditions, fish activity, feeding habits, etc.
- Observe fish to note any peculiar behavior or feeding rates, as this may be a sign of stress.
- Stable characteristics, such as alkalinity and hardness, do not have to be tested as frequently as ones that fluctuate, such as ammonia nitrogen, nitrite nitrogen, pH, dissolved oxygen, and temperature. Keep in mind that these factors fluctuate throughout the day and are in some cases interdependent.
- Be alert to sudden changes in one factor, as it may be a clue to perform further analysis.

ALKALINITY

REAGENTS AND APPARATUS

DESCRIPTION	CODE
*BCG-MR Indicator	*2311-EG-E
*Alkalinity Titration Reagent B	*4493DR-H
Test Tube, 5-10-12.9-15-20-25 mL, glass, w/cap	0608
Direct Reading Titrator, 0-200 Range	0382

***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.

The Titrator is calibrated in terms of Total Alkalinity expressed as parts per million (ppm) Calcium Carbonate (CaCO_3). Each minor division on the Titrator scale equals 4 ppm CaCO_3 .

ALKALINITY TEST PROCEDURE

1.



Fill the test tube (0608) to the 5 mL line with the sample water.

2.



Add 4 drops of Total Alkalinity Indicator (2311-EG).

3.



Cap and mix. Solution will turn blue-green.

4.

Fill Direct Reading Titrator (0382) with *Alkalinity Titration Reagent B (4493DR).



5.

Insert the Titrator into the center hole of the test tube cap.



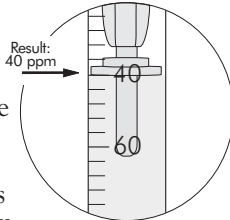
6.



While gently swirling the tube, slowly press the plunger to titrate until blue-green color changes to pink.

7.

Read the test result where the plunger meets the Titrator scale. Record as Total Alkalinity as Calcium Carbonate (CaCO_3).



NOTE:

If the plunger tip reaches the bottom line on the scale (200 ppm) before the endpoint color change occurs, refill the Titrator and continue the titration.

When recording the test result, be sure to include the value of the original amount of reagent dispensed (200 ppm).


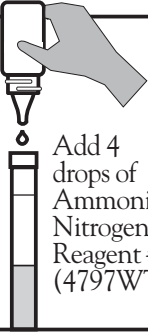
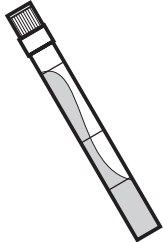


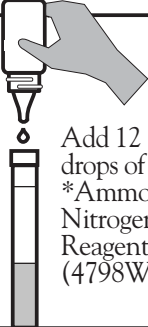
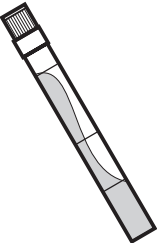



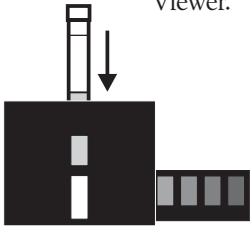
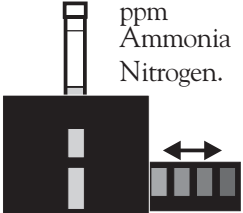
AMMONIA NITROGEN

REAGENTS AND APPARATUS

DESCRIPTION	CODE
Ammonia Nitrogen Reagent #1	4797WT-G
*Ammonia Nitrogen Reagent #2	*4798WT-G
Test Tube, plastic, w/cap	0106
Octa-Slide Viewer	1100
Ammonia-Nitrogen Octa-Slide Bar, 0.2-3.0 ppm	3438

***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.

AMMONIA NITROGEN TEST PROCEDURE

<p>1. Fill a test tube (0106) to the 5 mL line with the water sample.</p> 	<p>2. Add 4 drops of Ammonia Nitrogen Reagent #1 (4797WT).</p> 	<p>3. Cap and mix.</p> 
<p>4. Wait 1 minute.</p>  	<p>5. Add 12 drops of *Ammonia Nitrogen Reagent #2 (4798WT).</p> 	<p>6. Cap and mix.</p> 
<p>7. Wait 5 minutes.</p>  	<p>8. Insert Ammonia Nitrogen Octa-Slide Bar (3438) into the Octa-Slide Viewer (1100).</p> 	<p>9. Insert test tube into Octa-Slide Viewer.</p> 
<p>10. Match sample color to a color standard. Record as ppm Ammonia Nitrogen.</p> 	<p>11. To express results as Unionized Ammonia (NH_3), multiply the test result by 1.2: Unionized Ammonia (NH_3) = ppm Ammonia Nitrogen ($\text{NH}_3\text{-N}$) x 1.2 To express results as Ionized Ammonia (NH_4^+), multiply the test result by 1.3: Ionized Ammonia (NH_4^+) = ppm Ammonia Nitrogen ($\text{NH}_3\text{-N}$) x 1.3</p>	

CARBON DIOXIDE

REAGENTS AND APPARATUS

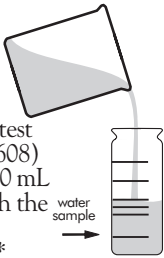
DESCRIPTION	CODE
*Phenolphthalein Indicator, 1%	*2246-E
*Carbon Dioxide Reagent B	*4253DR-H
Direct Reading Titrator, 0-50 Range	0380
Test Tube, 5-10-12.9-15-20-25 mL, glass, w/cap	0608

***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.

CARBON DIOXIDE TEST PROCEDURE

1.

Fill the test tube (0608) to the 20 mL line with the sample water.**



****NOTE:**

For best results, test a freshly obtained sample, and avoid splashing or prolonged contact with air.

2.

Add 2 drops of Phenolphthalein Indicator, 1% (2246). If sample turns red, no free carbon dioxide is present. If sample is colorless, proceed to Step 3.



3.

Fill Direct Reading Titrator (0380) with Carbon Dioxide Reagent B (4253DR).



4.

Insert the Titrator into the center hole of the test tube cap.



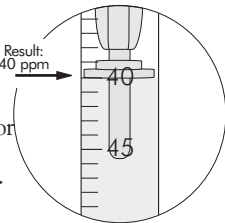
5.

While gently swirling the tube, slowly press the plunger to titrate until a faint pink color develops and persists for 30 seconds.



6.

Read the test result where the plunger top meets the Titrator scale. Record as Carbon Dioxide.



NOTE:

The Titrator is calibrated in terms of carbon dioxide expressed as ppm Free CO₂. Each minor division on the Titrator scale equals 1.0 ppm CO₂.

1100
OCTA-SLIDE VIEWER

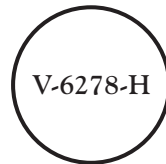
3483
pH

3438
AMM. NIT.

3437
NITRITE-N



CARB









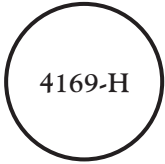

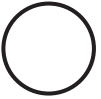
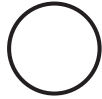

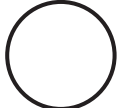
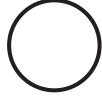








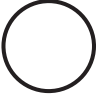


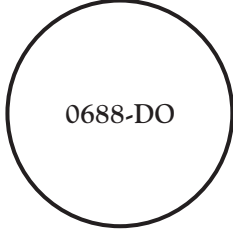
pH

AMMONIA
NITROGEN

NITRITE
NITROGEN

AL

AM FOR
CODE 3633-03

 0380	 0382	 0377	 0392
 253DR-H	 4505DR-H	 4169-H	 4170PS-G
 2246-E	 6090-E	 0382	 6141WT-G
MON DIOXIDE	 4504-E	 4487DR-H	 7166-G
 0382	CHLORIDE	 0353	 4167-G
 4493-H	 0608	 4485-E	
 311-EG-E	 0608	 4483-E	 0688-DO
KALINITY		HARDNESS	DISSOLVED OXYGEN

CHLORIDE

REAGENTS AND APPARATUS

DESCRIPTION	CODE
*Chloride Reagent #1	*4504-E
*Chloride Reagent #2	*4505DR-H
*Phenolphthalein Indicator, 1%	*2246-E
*Sulfuric Acid, 0.5N	*6090-E
Direct Reading Titrator, 0-200 Range	0382
Test Tube, 5-10-12.9-15-20-25 mL, glass, w/cap	0608

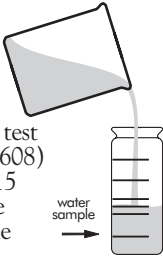
***WARNING:** Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

The Titrator is calibrated in terms of chloride expressed as ppm Cl⁻. Each minor division on the Titrator scale equals 4.0 ppm Cl⁻.

CHLORIDE TEST PROCEDURE

1.

Fill the test tube (0608) to the 15 mL line with the sample water.



2.

Add one drop of Phenolphthalein Indicator, 1% (2246). If sample turns pink, add *Sulfuric Acid, 0.5N (6090) one drop at a time, mixing after each drop, until pink color disappears.



3.

Add 3 drops of *Chloride Reagent #1 (4504).



4.

Cap and swirl to mix. Solution will turn yellow.



5.

Fill Direct Reading Titrator (0382) with *Chloride Reagent #2 (4505DR).



6.

Insert the Titrator into the center hole of the test tube cap.



7.

While gently swirling the tube, slowly press the plunger to titrate until yellow color changes from yellow to orange or orange-red.

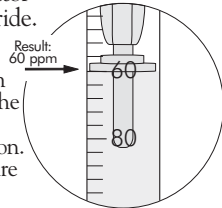


8.

Read the test result where the plunger top meets the Titrator scale. Record as ppm Chloride.

NOTE:

If the plunger tip reaches the bottom line on the scale (200 ppm) before the endpoint color change occurs, refill the Titrator and continue the titration. When recording the test result be sure to include the value of the original amount of reagent dispensed (200 ppm).



HIGH CHLORIDE AND SALINITY READINGS

For high chloride and salinity readings the sample must be carefully diluted to bring it within a practical range for titration. Dilutions of 1 to 20 or 1 to 100 are recommended. (For example: 1 mL of sample water is diluted to a total of 20 mL with distilled water. This is a 1 to 20 dilution.) Titration tube is then filled to 15 mL line with diluted sample, and the titration is performed as described. The Titrator reading is multiplied by the appropriate conversion factor given below for parts per million (ppm), parts per thousand (ppt), or percent (%) Chloride.

1 to 20 DILUTION

$$\text{ppm chloride} = \text{Titrator Reading} \times 20$$

$$\text{ppt chloride} = \text{Titrator Reading} \times 0.02$$

$$\% \text{ chloride} = \text{Titrator Reading} \times 0.002$$

1 to 100 DILUTION

$$\text{ppm chloride} = \text{Titrator Reading} \times 100$$

$$\text{ppt chloride} = \text{Titrator Reading} \times 0.1$$

$$\% \text{ chloride} = \text{Titrator Reading} \times 0.01$$

To convert parts per thousand (ppt) Chloride to parts per thousand (ppt) Salinity use the following formula:

$$\text{ppt salinity} = (1.805 \times \text{ppt chloride}) + 0.03$$

DISSOLVED OXYGEN†

REAGENTS AND APPARATUS

DESCRIPTION	CODE
*Manganous Sulfate Solution	*4167-G
*Alkaline Potassium Iodide Azide Reagent	*7166-G
*Sulfuric Acid, 1:1	*6141WT-G
Sodium Thiosulfate, 0.025N	4169-H
Starch Indicator Solution	4170PS-G
Direct Reading Titrator, 0-10 Range	0377
Test Tube, 5-10-12.9-15-20-25 mL, glass, w/cap	0608
Pipet, plain, plastic, w/cap	0392
Water Sampling Bottle, 60 mL, glass	0688-DO

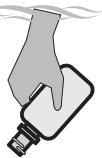
***WARNING:** Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

The Titrator is calibrated in terms of Dissolved Oxygen expressed as ppm Dissolved Oxygen. Each minor division on the Titrator scale equals 0.2 ppm Dissolved Oxygen.

†Included in Model AQ-2 only, Code 3633-03.

SAMPLE & PRESERVATION

1. To avoid contamination, thoroughly rinse the Water Sampling Bottle (0688-DO) with sample water.



2. Tightly cap the bottle, submerge bottle to the desired depth. Remove cap to allow the bottle to fill.



3. Tap the sides of the submerged bottle to dislodge any air bubbles clinging to the inside of the bottle. Replace the cap while the bottle is still submerged.



4. Retrieve the bottle. Examine it carefully to make sure that no air bubbles are trapped inside. Proceed immediately with Step 5 & 6 to "fix" the sample.



NOTE:

Be careful not to introduce air into the sample while adding the reagents in Steps 5 and 6. Drop the reagents into the test sample. Cap and mix gently.

5. Remove cap. Add 8 drops of *Manganous Sulfate Solution (4167). Add 8 drops of *Alkaline Potassium Iodide Azide Reagent (7166).



7. Cap and mix by inverting several times. A precipitate will form. Allow the precipitate to settle to below the shoulder of the bottle before proceeding.



8. Remove cap. Add 8 drops of *Sulfuric Acid, 1:1 (6141WT). Cap and gently shake until the precipitate has dissolved. A clear-yellow to brown-orange will develop.

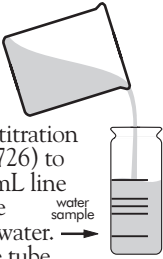


- NOTE:** The color of the "fixed" sample depends on the oxygen content of the sample. After sample has been "fixed", water and atmosphere contact will not affect sample. "Fixed" sample can be stored for later testing.

DISSOLVED OXYGEN TEST PROCEDURE

1.

Fill the titration tube (0726) to the 20 mL line with the sample water. → Cap the tube.



NOTE:

If the color of the "fixed" sample is already a very faint yellow, skip Steps 2 & 3, perform Step 4, and begin the titration at Step 5.

2.

Fill the Direct Reading Titrator (0377) with Sodium Thiosulfate, 0.025N (4169).



3.

Insert the Titrator into the center hole of the test tube cap.



4.

While gently swirling the tube, slowly press the plunger to titrate until yellow-brown color is reduced to a very faint yellow.



5.

Remove the Titrator and cap. Be careful not to disturb the Titrator plunger, as the titration begun in Step 3 will be continued in Step 5.



6.

Use the pipet (0392) to add 8 drops of Starch Indicator Solution (4170PS). Solution will turn blue.



7.

Replace the cap and Titrator.



8.

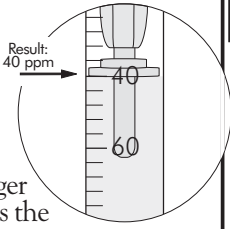
Continue gently swirling the tube, while slowly pressing the plunger to titrate until the blue color disappears.



DISSOLVED OXYGEN TEST PROCEDURE

9.

Read the test result where the plunger top meets the Titrator.

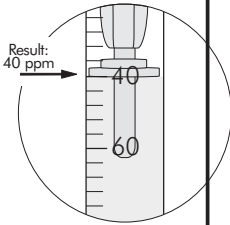


NOTE:

If the plunger tip reaches the bottom line on the scale (10 ppm) before the endpoint color change occurs, refill the Titrator and continue the titration. When recording the test result be sure to include the value of the original amount of reagent dispensed (10 ppm).

10.

Record as ppm Dissolved Oxygen.



HARDNESS

REAGENTS AND APPARATUS

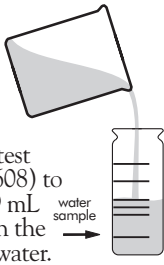
DESCRIPTION	CODE
*Hardness Reagent #5	*4483-E
Hardness Reagent #6 Solution	4485-E
Hardness Reagent #7	4487DR-H
Test Tube, 5-10-12.9-15-20-25, glass, w/cap	0608
Direct Reading Titrator, 0-200 Range	0382
Pipet, 0.5 mL, plastic	0353

***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.

The Titrator is calibrated in terms of Total Hardness expressed as parts per million (ppm) Calcium Carbonate (CaCO_3). Each minor division on the Titrator scale equals 4 ppm CaCO_3 .

HARDNESS TEST PROCEDURE

1.



Fill the test tube (0608) to the 12.9 mL line with the sample water.

2.



Add 5 drops of *Hardness Reagent #5 (4483).

3.



Cap and swirl to mix.

4.



Add 5 drops of *Hardness Reagent #6 Solution (4483).

5.



Cap and swirl to mix. Solution will turn red.

6.



Fill Direct Reading Titrator (0382) with Hardness Reagent 7 (4487DR).

7.



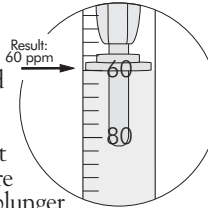
Insert the Titrator into the center hole of the test tube cap.

8.



While gently swirling the tube, slowly press the plunger to titrate until the red color changes to clear blue.

9.



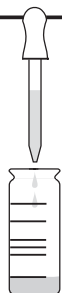
Read the test result where the plunger meets the Titrator scale. Record as ppm Total Hardness as CaCO_3 .

ANALYSIS OF HARDNESS IN SALT WATER

When sea and estuarine waters containing very high levels of mineral salts are to be tested, the sample must be diluted before titration. This test set is supplied with a calibrated pipet for performing the simple, convenient dilution described below:

1.

Use the 0.5 mL pipet (0353) to add 0.5 mL of the salt water to the test tube (0608).



2.

Fill the test tube to the 12.9 mL line with distilled water (a 1 to 25.8 dilution.)



3.

Follow Steps 2 through 9 under Total Hardness procedure. Multiply reading by 25.8. Record as ppm Total Hardness as CaCO_3 .

NITRITE NITROGEN

REAGENTS AND APPARATUS

DESCRIPTION	CODE
*Mixed Acid Reagent	*V-6278-H
*Color Developing Reagent	*V-6281-D
Spoon, 0.1 g, plastic	0699
Test Tube, plastic, w/cap	0106
Dispenser Cap	0692
Octa-Slide Viewer	1100
Nitrite Nitrogen Octa-Slide Bar, 0.05-0.8 ppm	3437

***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.

NOTE: Place Dispenser Cap (0692) on *Mixed Acid Reagent (V-6278-H). Save this cap for refill reagents.

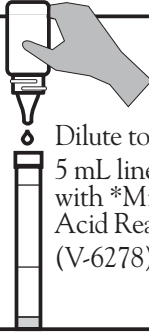
NITRITE NITROGEN TEST PROCEDURE

1.



Fill a test tube (0106) to the 2.5 mL line with the water sample.

2.



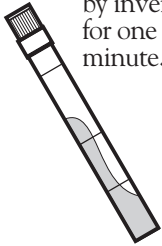
Dilute to the 5 mL line with *Mixed Acid Reagent (V-6278).

3.



Use the 0.1 g spoon (0699) to add 0.1 g of *Color Developing Reagent (V-6281).

4.



Cap and mix by inverting for one minute.

5.



Wait 5 minutes.



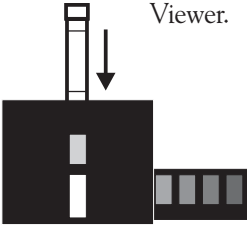
6.

Insert Nitrite-Nitrogen Octa-Slide Bar (3437) into the Octa-Slide Viewer (1100).



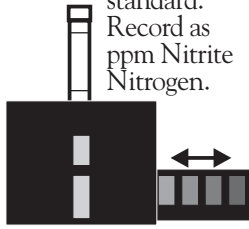
7.

Insert test tube into Octa-Slide Viewer.



8.

Match sample color to a color standard. Record as ppm Nitrite Nitrogen.



9.

To convert to Nitrite, multiply results by 3.3. Record as ppm Nitrite.

CONVERSIONS:

$$\text{Nitrite-N (NO}_3\text{-N)} \times 3.3 = \text{ppm Nitrite (NO}_2\text{-)}$$

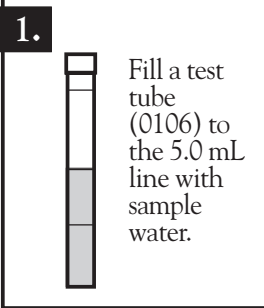
REAGENTS AND APPARATUS

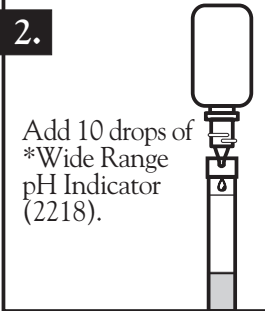
DESCRIPTION	CODE
*Wide Range Indicator	*2218-G
Test Tube, plastic, w/cap	0106
Octa-Slide Viewer	1100
Wide Range pH Octa-Slide Bar, 5.0-10.0	3483

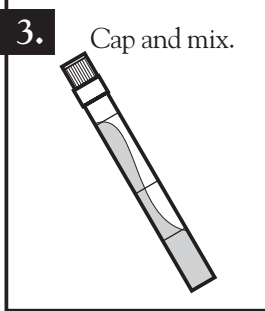
***WARNING:** Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.


†Included in Model AQ-2 only, Code 3633-03.

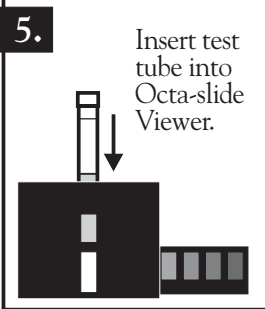
pH TEST PROCEDURE

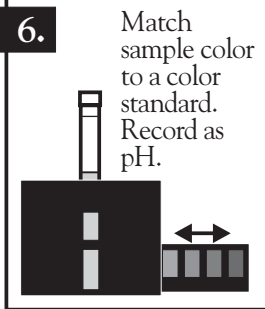
- 

1. Fill a test tube (0106) to the 5.0 mL line with sample water.
- 

2. Add 10 drops of *Wide Range pH Indicator (2218).
- 

3. Cap and mix.
- 

4. Insert Wide Range pH Octa-Slide Bar (3483) into the Octa-Slide Viewer (1100).
- 

5. Insert test tube into Octa-slide Viewer.
- 

6. Match sample color to a color standard. Record as pH.



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