



Aquaculture Testing Products

FACTORS & TEST METHODS

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Shipping Codes & Weights

Shipping codes and weights for shipping are included in this catalog for your convenience. The shipping code will refer to one of the following in this chart. Weight will be in pounds and enclosed in [].

| Shipping Code | Description |
|----------------|---|
| NH | Non Hazardous, No Fees |
| HF | Hazardous Materials, Air & Ground Fees |
| R1 | Small Quantity Hazardous Materials, No Fees |
| R2, R3, and LQ | Hazardous Materials, Air Fees Only |

Test Methods

TITRIMETRIC

DIRECT READING TITRATORS are 1.0mL microburets calibrated for direct readout in concentration; no counting of drops or calculations.



VISUAL COLORIMETRIC

Octa-Slide 2 and LRC Comparators feature eight color standards with built-in filters that eliminate optical distortion.



ELECTRONIC METER/PROBE

Electronic methods generally use a special electrode for measuring a specific test factor.

An electrode is immersed into a sample and an amplified current or voltage is produced and translated into a digital readout. In a colorimeter, light is passed through a sample and measured by a photodetector.



FACTORS

Proper control of water quality is an essential part of any 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.

ALKALINITY

Composed primarily of carbonate [CO₃²⁻] and bicarbonate [HCO₃⁻], alkalinity acts as a stabilizer for pH. Alkalinity, pH, and hardness affect the toxicity of many substances in the water. Alkalinity is often referred to as carbonate hardness in the aquarium industry.

AMMONIA

Ammonia, present in both ionized [NH₄⁺] and un-ionized [NH₃] forms, is extremely toxic to fish in the un-ionized form. Even low levels of un-ionized ammonia may affect the fish's central nervous system, reducing its ability to obtain oxygen and lowering its resistance to disease. A product of organic waste, ammonia enters the water directly from the fish, other organic material, and uneaten food. Ammonia levels are pH dependent and can fluctuate throughout the day.

CARBON DIOXIDE

Different species of fish have different susceptibilities to carbon dioxide toxicity. In some species, excess carbon dioxide hinders the ability of the blood to hold oxygen. Produced during respiration and consumed during photosynthesis, carbon dioxide levels fluctuate throughout the day opposite to dissolved oxygen levels. High carbon dioxide levels lower the pH, which in turn affects the ratio of un-ionized to ionized ammonia.

CHLORIDE

Chloride levels can affect fish health in two ways: as the major constituent of salinity or as a treatment to prevent nitrite toxicity. In systems with existing or chronic high nitrite levels, chloride will often be added to prevent the fish from succumbing to nitrite toxicity.

COPPER

Copper, in the form of copper sulfate, is often used in aquaculture systems as an algicide and bactericide; however, high levels can be toxic to fish. High pH and alkalinity levels will complex copper, helping to reduce its toxicity.

DISSOLVED OXYGEN

The Dissolved Oxygen test is one of the most important in aquaculture. Dissolved oxygen levels can affect fish respiration, as well as ammonia and nitrite toxicity. Salinity and temperature are both factors that affect dissolved oxygen levels.

HARDNESS

Total hardness is defined as the concentration of calcium [Ca₂⁺] and magnesium [Mg₂⁺] in the water. Closely related to alkalinity and pH, sufficient hardness levels can decrease ammonia and pH toxicity. Calcium is also necessary for proper egg and fry development.

NITRATE

Nitrate is a product of the nitrogen cycle. Ammonia is converted by bacteria to nitrite, which in turn is converted to nitrate, also by bacteria. Nitrates can build up in closed systems and are often diluted by water changes. Nitrates from fertilizer runoff in ponds and lakes can cause algae blooms that are harmful to aquatic life.

NITRITE

An intermediate product between ammonia and nitrate in the nitrification process, nitrite [NO₂⁻] is extremely toxic to fish. High levels, combined with low chloride and dissolved oxygen concentrations, may result in methemoglobinemia, better known as brown blood disease.

pH

pH is a measure of acidity/basicity. The pH scale is logarithmic and runs from 0 to 14; 7.0 is considered neutral, with values greater being basic and those lower being acidic. The greatest concern with pH is how it affects the toxicity of other substances, including nitrite and ammonia.

PHOSPHATE [PHOSPHORUS]

Phosphates enter the water supply from many sources, including agricultural runoff and sewage. Phosphorus is an essential nutrient for bone formation and is a primary ingredient in fertilizers, yet excessive levels can promote an overabundance of algae.

TEMPERATURE

Water temperature controls the rate of all chemical reactions and affects fish growth, reproduction, and immunity. Drastic temperature changes can be fatal to fish.



INDIVIDUAL TEST KITS

| Test Factor | Code | Water | Method | Range/Sensitivity | # of Tests | # of Rgts. | Ship Code (wt./lbs) | Refill Code |
|-------------------|-----------------------------|---------------|--|---|------------|------------|---------------------|-------------------|
| Alkalinity* | 4491-DR-01 [†] | Fresh or Salt | Direct Reading Titrator for Total [T] Alkalinity | 0-200 ppm as CaCO ₃ in 4.0 ppm increments | 50 | 2 | NH [1] | R-4491-DR |
| Ammonia Nitrogen | 3304-02 | Fresh or Salt | Octa-Slide 2, Salicylate Method | 0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH ₃ -N | 50 | 3 | R2 [1] | R-3304 |
| Carbon Dioxide* | 7297-DR-01 ^{†B} | Fresh or Salt | Direct Reading Titrator | 0-50 ppm CO ₂ in 1.0 ppm increments | 50 | 2 | R1 [1] | R-7297-DR |
| Chloride* | 4503-DR-02 ^{†B} | Fresh | Direct Reading Titrator | 0-200 ppm Cl in 4.0 ppm increments | 50 | 4 | R1 [1] | R-4503-DR-01 |
| Chlorine | 3312-01 | Fresh | Octa-Slide 2 for Free & Total Chlorine | 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8, 1.0, ppm Cl ₂ | 50 | 2 | NH [1] | 6999A-H & 6905A-H |
| Copper | 6616-01 ^B | Fresh or Salt | LRC Comparator for Total Copper | 0.0, 0.05, 0.1, 0.15, 0.2, 0.3, 0.4, 0.5 ppm Cu | 50 | 1 | NH [1] | 6446-E |
| Dissolved Oxygen* | 5860-01 [†] | Fresh or Salt | Direct Reading Titrator All liquid system! | 0-10 ppm O ₂ in 0.2 ppm increments | 50 | 5 | R1 [2] | R-5860 |
| Hardness* | 4824-DR-LT-01 | Fresh or Salt | Direct Reading Titrator for Total, Calcium, & Magnesium Hardness | 0-200 ppm as CaCO ₃ in 4.0 ppm increments | 50 | 5 | R1 [1] | R-4824-DR-LT |
| | 4482-DR-LI-01 ^{†R} | Fresh or Salt | Direct Reading Titrator for Total Hardness | 0-200 ppm as CaCO ₃ in 4.0 ppm increments | 50 | 3 | R1 [1] | R-4482-DR-LI |
| | 3609-01 | Fresh or Salt | Direct Reading Titrator for Calcium Hardness | 0-200 ppm or 0-2,500 ppm | 50 | 3 | R1 [1] | R-3609 |
| Iron | 4447-01 | Fresh or Salt | Octa-Slide 2 for Total Iron | 0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe | 90 | 2 | R1 [1] | R-4447 |
| | 7787-01 ^C | Fresh or Salt | LRC Comparator for Total Iron | 0.05, 0.1, 0.2, 0.3, 0.4, 0.6, 0.8, 1.0 ppm Fe | 30 | 2 | R1 [1] | R-7787 |
| Nitrate Nitrogen | 3354-01 | Fresh or Salt | Octa-Slide 2 All tablet system! | 0, 1, 2, 4, 6, 8, 10, 15 ppm NO ₃ -N | 40 | 2 | NH [2] | R-3354 |
| | 3110-01 ^B | Fresh or Salt | Octa-Slide 2 | 0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO ₃ -N | 50 | 2 | R1 [2] | R-3110 |
| Nitrite Nitrogen | 3352-01 [†] | Fresh or Salt | Octa-Slide 2 | 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO ₂ -N | 50 | 3 | NH [2] | R-3352 |
| Ozone | 3249 | Fresh or Salt | Digital colorimeter, Indigo Blue method | 0-0.4 ppm O ₃ /0.04 detection limit | 100 | 3 | NH [7] | — |
| pH | 3353-01 ^{†R} | Fresh or Salt | Octa-Slide 2 | 5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH | 50 | 1 | R1 [1] | 2218-G |
| | 2159-02 | Salt | LRC Comparator | 7.7, 7.8, 7.9, 8.0, 8.1, 8.2, 8.3, 8.4 pH | 100 | 1 | R1 [1] | 2212-G |
| Phosphate | 3121-02 | Fresh or Salt | LRC Comparator | 0.0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0 ppm PO ₄ | 50 | 2 | R1 [1] | R-3121-01 |
| Salinity* | 7459-02 ^B | Salt | Direct Reading Titrator | 0-20 ppt Salinity in 0.4 ppt increments | 50 | 2 | R1 [1] | R-7459-01 |
| Sulfide | 4456-01 | Fresh or Salt | LRC Comparator for Total Sulfide | 0.2, 0.5, 1.0, 2.0, 5.0, 10.0, 15.0, 20.0 ppm S ⁼ | 50 | 3 | R1 [1] | R-4456 |

* Often referred to as Carbonate Hardness in the aquarium industry. † Featured test in AQ Series of combination outfits.

× Note: Direct Reading Titrators have a specific range, but may be refilled to test higher concentrations.

Prop 65: C: ⚠️ WARNING Cancer - www.P65Warnings.ca.gov/product; R: ⚠️ WARNING Reproductive Harm - www.P65Warnings.ca.gov/product;

B: ⚠️ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

New Insta-Test[®] Analytic Test Strips for Natural Waters

Ideal for routine monitoring of lakes, streams, ponds, aquaria, and ornamental fish ponds. Strips may be immersed directly into body of water or tank. No test tubes or sampling containers required. Suitable for fresh or salt water analysis. 25 strips per vial.

| Strip | Range | Code |
|-----------|---|------------|
| 5-Way | Nitrate 0, 20, 40, 80, 160, 200 ppm | 3038-G |
| | Nitrite 0, 0.5, 1.0, 3.0, 5.0, 10.0 ppm | |
| | pH 6.0, 6.5, 7.0, 7.5, 8.0, 8.5, 9.0 | |
| | Alkalinity 0, 40, 80, 120, 180 ppm | |
| | Hardness 0, 30, 60, 120, 180 ppm | |
| Ammonia | 0, 0.5, 1.0, 3.0, 6.0 ppm | 3023-G |
| Phosphate | 0, 100, 200, 300, 500, 1000, 2500 ppb | 3021-G-ENV |



AQUAPONICS & HYDROPONICS

Aquaponics Test Kit · Fresh · Brackish · Salt Water

Order Code 3637* · Ship Code LQ [9] | Reagent Refill Package Order Code R-3637* · Ship Code LQ [4]

Aquaponics is growing rapidly as a hobby and as an industry as the farm-to-table trend continues to spread. Designed for small to mid-size systems, this test kit monitors basic water quality for both the aquaculture and hydroponics segments of your system. A detailed, diagrammed instruction manual is provided along with a quick reference lid instruction. Reagents, labware, and accessories are mounted in a foam-lined carrying case. Kit is complete with labware, accessories, and reagents to perform approximately 50 repetitions per test factor. Test chemistries and comparators are compatible with fresh, brackish or salt water systems.



| Octa-Slide 2 Comparator | Method | Range/Sensitivity |
|-------------------------|-------------------------|---|
| Ammonia | Salicylate Method | 0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH ₃ -N |
| Nitrite | Diazotization/ Coupling | 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO ₂ -N |
| Nitrate | Zinc Reduction | 0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO ₃ -N |
| pH | Wide Range Indicator | 5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH |
| Iron, Ferrous & Ferric | Bipyridyl Indicator | 0.5, 1.0, 2.0, 3.0, 4.0, 6.0, 8.0, 10.0 ppm Fe |

| Direct Reading Titrator | Method | Range/Sensitivity |
|-------------------------|----------------------------|--|
| Alkalinity | Acid/Base Titration | 0-200 ppm as CaCO ₃ , in 4.0 ppm increments |
| Dissolved Oxygen | Modified Winkler Titration | 0-10 ppm, in 0.2 ppm |

* Prop 65: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Hydroponics Test Kit

Order Code Code 3561-01* · Shipping Code HF [7] | Reagent Refill Package Order Code R-3561* · Shipping Code HF [3]

Maintain proper nutrient balances and achieve optimum growing conditions in soil-less cultures. Kit comes with enough reagents for 50 repetitions per test factor, complete labware and helpful *Plant Nutrition Studies* handbook.



| Octa-Slide 2 Comparator | Method | Range/Sensitivity |
|-------------------------|------------------------|--|
| pH | Wide Range Indicator | 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, pH |
| Nitrate Nitrogen | Cadmium Reduction | 0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm |
| Phosphorus | Ascorbic Acid | 5, 6, 9, 12, 15, 18, 24, 30 ppm |
| Potassium | Turbidity Reading Tube | 5, 8, 10, 20, 30, 40, 60 ppm |

* Prop 65: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product



Code 3561-01

FRESH & SALT WATER COMBINATION OUTFITS

Model AQ-2 · Fresh Water

Order Code 3633-05* · Shipping Code R3 [16] | Reagent Refill Order Code R-3633-05*

A complete outfit for pond fish culture—ideal for fresh water analysis. Nine critical test factors can be efficiently and accurately determined on-site. Designed with field analysis as a priority; all reagents, components, and accessories are arranged for convenience. Lid label instructions are convenient for quick reference, while a booklet provides detailed instructions. Unit is supplied complete with labware, accessories, sampling bottle, and reagents for 50 tests of each factor.



Code 3633-05

| Direct Reading Titrator | Method | Range | Sensitivity |
|-------------------------|----------------------------|--------------------------------|-------------|
| Alkalinity [Total] | Acid/Base Titration | 0–200 ppm as CaCO ₃ | 4.0 ppm |
| Carbon Dioxide | Titration | 0–50 ppm CO ₂ | 1.0 ppm |
| Chloride | Titration | 0–200 ppm Cl | 4.0 ppm |
| Dissolved Oxygen | Modified Winkler Titration | 0–10 ppm O ₂ | 0.2 ppm |
| Hardness [Total] | Titration | 0–200 ppm as CaCO ₃ | 4.0 ppm |

| Octa-Slide 2 Comparator | Method | Range/Sensitivity |
|-------------------------|------------------------|---|
| Ammonia Nitrogen | Salicylate Method | 00.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH ₃ -N |
| Nitrite Nitrogen | Diazotization/Coupling | 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO ₂ ⁻ -N |
| pH | Wide Range Indicator | 5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH |

| Temperature | Range | Sensitivity |
|---------------------|-------------|-------------|
| Armored Thermometer | -5° to 45°C | 0.5°C |

* Prop 65: ⚠️ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

Model AQ-4 · Salt Water

Order Code 3635-05* · Shipping Code R3 [16] | Reagent Refill Order Code R-3635-04*

This equipment monitors the nine parameters most critical for the salt water aquaculturist. Reagents, labware, and accessories are mounted for convenient test selection and portability. Lid label instructions are available for quick reference, while a booklet provides detailed instructions. Unit is complete with labware, accessories, sampling bottles, and reagents for 50 tests of each factor.

| Direct Reading Titrator | Method | Range | Sensitivity |
|-------------------------|----------------------------|--------------------------------|-------------|
| Alkalinity [Total] | Acid/Base Titration | 0–200 ppm as CaCO ₃ | 4.0 ppm |
| Carbon Dioxide | Titration | 0–50 ppm CO ₂ | 1.0 ppm |
| Dissolved Oxygen | Modified Winkler Titration | 0–10 ppm O ₂ | 0.2 ppm |
| Salinity | Titration | 0–20 ppt Salinity | 0.4 ppt |

| Octa-Slide 2 Comparator | Method | Range/Sensitivity |
|-------------------------|------------------------|--|
| Ammonia Nitrogen | Salicylate Method | 0.0, 0.05, 0.1, 0.25, 0.5, 1.0, 1.5, 2.0 ppm NH ₃ -N |
| Nitrate Nitrogen | Cadmium Reduction | 0.25, 0.5, 1.0, 2.0, 4.0, 6.0, 8.0, 10.0 ppm NO ₃ ⁻ -N |
| Nitrite Nitrogen | Diazotization/Coupling | 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.8 ppm NO ₂ ⁻ -N |
| pH | Wide Range Indicator | 5.0, 6.0, 6.5, 7.0, 7.5, 8.0, 9.0, 10.0 pH |

| Temperature | Range | Sensitivity |
|---------------------|-------------|-------------|
| Armored Thermometer | -5° to 45°C | 0.5°C |

* Prop 65: ⚠️ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product



Code 3635-05

ColorQ 2X · Fresh Water

Order Code 2103

The waterproof, Bluetooth® ColorQ® 2X Freshwater photometer directly measures six fresh water parameters for ponds and tanks including ammonia, nitrite, nitrate, pH, alkalinity and hardness. This photometer is easy to use and comes with tablet and liquid reagents sufficient to perform 50 repetitions per factor. The user-friendly photometer, testing reagents, test tubes, and diagrammed multilingual instructions (English, Spanish, French) are conveniently packaged.

| Test Factors | Range |
|-------------------------------------|--------------------------------|
| Ammonia as NH ₃ -N | 0.05 - 1.0 ppm |
| Nitrate as NO ₃ -N | 5-15 ppm, 15-30 ppm (dilution) |
| Nitrite as NO ₂ -N | 0.02-0.8 ppm |
| pH | 5.0-9.0 |
| Alkalinity as CaCO ₃ | 15-300 ppm |
| Total Hardness as CaCO ₃ | 15-400 ppm, 400-800 (dilution) |



Coming Soon!

INSTRUMENTATION WATERLINK® SPIN TOUCH® FF

6-Wavelength
Colorimeter

Bluetooth



Touchscreen



Portable



Pre-Measured,
Sample-Injected,
Reagent Disks



Up to
8 tests
in 2
minutes!



WaterLink® Spin Touch® FF

Order Code 3587 · Shipping Code NH [11]

The innovative **WaterLink® Spin Touch® FF** photometer does all your water testing for you. Each reagent disk contains the precise amount of reagent needed to run a complete series of tests. Just fill one unique Spin reagent disk with less than 3 mL of water and all your vital tests are done automatically—in just 2 minutes!

Reliable Results

- Virtually Eliminates User-Error
- Pre-Measured Reagents
- Exact Reaction Time and Auto-Blanking
- Meter Calibration Check System
- 6-Wavelength Photometer

Super Fast & Simple

- 2 Minutes for up to 8 Complete Tests Using One Disk
- Fill Disk and Insert > Tap "Start Test" > Read Results

Data Logging

- Stores Test Dates, Times, Results, and Location
- Download via USB to PC

Stand-Alone or Cloud-Connection

- Touchscreen Operation
- Connect to WaterLink Solutions via Bluetooth®

Rugged and Portable

- Innovative Water-Resistant Housing
- Internal, Rechargeable Batteries

Specifications:

| | |
|-------------------|---|
| Instrument Type: | Centrifugal Fluidics Photometer |
| 6 Wavelengths: | 390 nm, 428 nm, 470 nm, 525 nm, 568 nm, 635 nm |
| Display: | Color Capacitive Touchscreen, 3.5", 320 X 240 pixel resolution |
| Languages: | English, French, Spanish, German, Italian, Portuguese, Dutch, Swedish, Turkish, Chinese |
| Batteries: | Lithium Ion, Rechargeable (Full Charge in 10-12 hours), 150 tests per charge |
| Communication: | Bluetooth, USB-C |
| Calibration: | Factory Set, Field Calibration via Internet Connection |
| Date Storage: | Last 250 Test Results with Date, Time, Location |
| Water Resistance: | Rubber Co-molded Base, Rubber USB Port Plug, Gasketed Display & Hinge |
| Size & Weight: | 8.5 L x 4.9 W x 4.1 H in; 1.74 lb; 22.6 L x 12.7 W x 11.4 H cm; 0.79 kg |
| Operation: | Single On/Off/Reset Button with Indicator Light, Touchscreen |
| Firmware | Internet updateable (New Test, New Test Calibrations, etc.), requires a USB connection to a Windows® PC |
| Printer | Optional Bluetooth® Printer (Code 5-0067); 384 dots per line at 8 dots/mm resolution |
| Certification | CE |

Bluetooth® is a registered trademark of Bluetooth® SIG, Inc.



The Complete Lab Includes: Photometer, Instruction Manual, Quick-Start Instructions, 3 Syringes, Meter Check Disk, Disk Cover, Sample Bottle, USB Cable with AC Adapter, Carrying Case. [Disks sold separately]

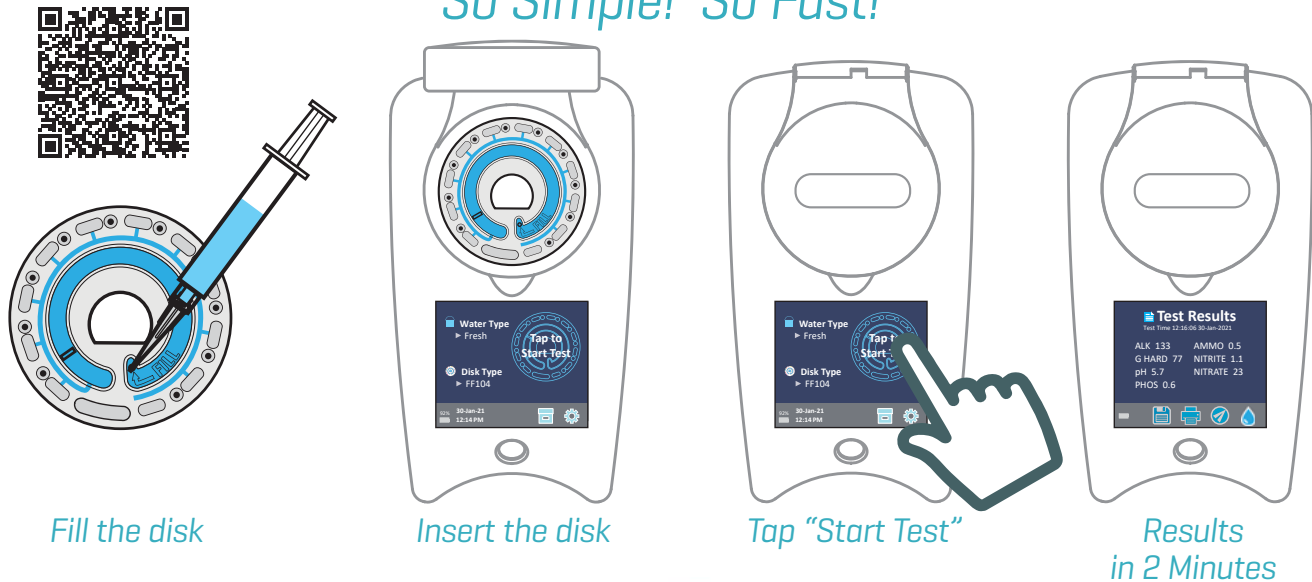
For Customers Outside North America WaterLink® Spin Touch® FX

Order Code 3589
Shipping Code NH [11]
Disks sold separately.



INSTRUMENTATION WATERLINK® SPIN TOUCH® FF

So Simple! So Fast!



SpinDisk®

Reagent Disks come individually packaged in foil pouches in boxed packs of 50.



FF Fresh Water Reagent Disks

Order Code 4351-H • Box of 50

| Test Parameter | Display Abbreviation | Range | Accuracy | Method Detection Limit |
|---------------------------|----------------------|-------------|--|------------------------|
| Alkalinity | ALK | 0-250 ppm | ± 15% | 15 ppm |
| Ammonia NH ₃ | AMMO | 0-3.0 ppm | < 2.0 ppm: ± 0.2 ppm > 2.0 ppm: ± 0.4 ppm | 0.2 ppm |
| Hardness | G HARD | 0-500 ppm | ± 15% | 20 ppm |
| Nitrate NO ₃ | NITRATE | 0-300 ppm | ± 30% up to 125 ppm | 5 ppm |
| Nitrite NO ₂ | NITRITE | 0-2.0 ppm | ± 0.2 ppm | 0.1 ppm |
| pH | pH | 4.5-10.0 pH | ± 0.2 | NA |
| Phosphate PO ₄ | PHOS | 0-2.0 ppm | ± 0.2 ppm | 0.2 ppm |

FF Salt Water Reagent Disks

Order Code 4352-H • Box of 50

| Test Parameter | Display Abbreviation | Range | Accuracy | Method Detection Limit |
|---------------------------|----------------------|--------------|---|------------------------|
| Alkalinity | ALK | 0-300 ppm | ± 15% | 15 ppm |
| Ammonia NH ₃ | AMMO | 0-3.0 ppm | < 1.0 ppm: ± 0.2 ppm; > 1.0 ppm: ± 0.4 ppm | 0.2 ppm |
| Calcium | Ca | 200-800 ppm | ± 15% | NA |
| Magnesium | Mg | 500-2200 ppm | ± 15% | NA |
| Nitrate NO ₃ | NITRATE | 0-60 ppm | ± 25% | 5 ppm |
| Nitrite NO ₂ | NITRITE | 0-2.0 ppm | ± 0.2 ppm | 0.1 ppm |
| pH | pH | 6.5-10.0 pH | ± 0.2 | NA |
| Phosphate PO ₄ | PHOS | 0-2.0 ppm | ± 0.2 ppm | 0.2 ppm |

Spin Touch® FF disks are available for sale in North America only.
Disk Patent No. 8,734,734; FCI Patent No. 8,987,000; TCI Patent No. 8,993,337;
FCI EU Patent No. EP2784503 A1

WaterLink Solutions™ PRO

Optional Software

- Cloud-based and Free
- Instantly capture date, time, test results, and location for each pond or tank
- View in real time water quality test results of each pond or tank
- Monitoring Dashboard* provides alerts and complete water quality history of each pond or tank
- Powerful, customizable treatment engine
- Download free iOS or Android WaterLink® Solutions App for your mobile device
- Sign up for your WaterLink Solutions account at www.softwarecenter.lamotte.com

*Monitoring Dashboard at nominal monthly charge



INSTRUMENTATION

SMART3 COLORIMETER & REAGENT SYSTEMS

SMART3 Colorimeter®

Order Code 1910 · Shipping Code NH [4]

The user-friendly waterproof SMART3 Colorimeter is the direct reading colorimeter for complete on-site water analyses. Over 60 pre-programmed tests can be run on this compact instrument and each test features automatic wavelength selection. The entire multi-LED optical system is embedded in the light chamber and optimized for LaMotte test reagent systems. This enables the analyst to select a wavelength and read a reacted sample. The microprocessor, which selects the wavelength, also allows the user to load up to 25 tests for analyzing custom reagent systems. Features seven user-selected languages. Comes with four sample tubes, USB wall/computer adapter, and instruction manual. See www.lamotte.com for additional reagent systems.



Specifications:

| | |
|---------------|---|
| Light Source: | LED/filter setup at 430 nm, 520 nm, 570 nm, 630 nm |
| Detector: | Photodiode |
| Display: | 160 x 100 Backlight LCD, 20 x 4 line graphics display |
| Range: | 0-125%T |
| Resolution: | 1% FS |
| Accuracy: | 2% FS |
| CE Mark: | Yes |
| Sample Cell: | 25 mm round cell, 10 mm square cuvette, 16mm COD tubes |
| Power: | USB computer/wall adapter or lithium ion rechargeable battery |
| Battery Life: | Charge Life: Approx. 380 tests with backlight on to 1000 tests with backlight off. [Signal averaging disabled]. Approx. 500 charges. |
| Datalogging: | Up to 500 data points; USB transfer, time and date stamped |
| Calibration: | Factory set-user adjustable |
| Keypad: | 6-button mechanical |
| Size: | 7.5 x 3.5 x 2.5 inches |
| Weight: | 15 ounces |

Optional Accessories

- Small Field Carrying Case · Order Code 1910-GCS150 · NH [7]
- Large Carrying Case · Order Code 1910-GCS440 · NH [9]
- Car Charger · Order Code 5-0132 · NH [1]
- COD Heater Bloc, 120V, 12-Tube Capacity · Order Code 5-0102 · NH [15]
- COD Heater Bloc, 230V, 12-Tube Capacity · Order Code 5-0102-EX2 · NH [15]

Replacement Parts

- USB Cable · Order Code 1720 · NH [1]
- USB Wall Adapter · Order Code 1721 · NH [1]
- COD/UDV Adapter · Order Code 1724 · NH [1]

SMART3 Colorimeter® Reagent Systems

| Test Factor | Test Method [# of reagents] | Range ppm | # of Tests | Order Code | Ship Code/ Prop 65† |
|--|-----------------------------|---------------------|------------|------------|------------------------|
| Alkalinity | Tablet, Colorimetric [1] | 10-250 | 50 | 3670-SC | NH |
| Ammonia Nitrogen LR [Fresh & Salt Water] | Salicylate [3] | 0.05-1.00/0.10-1.00 | 25 | 3659-01-SC | R2/R |
| Ammonia Nitrogen HR | Nesslerization [2] | 0.05-4.00 | 50 | 3642-SC | R1/R |
| Chloride | Tablet, Argentometric [1] | 0.4-30.0 | 50 | 3693-SC | NH |
| Chlorine [Free & Total] | DPD Tablets [3] | 0.03-4.00 | 100 | 3643-SC | NH |
| Chlorine | Liquid, DPD [3] | 0.03-4.00 | 144 | 4859 | R1 |
| Chlorine Dioxide | DPD tablet/Glycine [2] | 0.06-8.00 | 100 | 3644-SC | NH |
| COD LR with Mercury* | Digestion [1] | 5-150 mg/L | 25 | 0075-SC | R1 |
| COD LR without Mercury* | Digestion [1] | 5-150 mg/L | 25 | 0072-SC | R1 |

* Requires COD Heater Block Code 5-0087 [sold separately]

† Prop 65: C: ⚠ WARNING Cancer - www.P65Warnings.ca.gov/product; R: ⚠ WARNING Reproductive Harm - www.P65Warnings.ca.gov/product; B: ⚠ WARNING Cancer and Reproductive Harm - www.P65Warnings.ca.gov/product

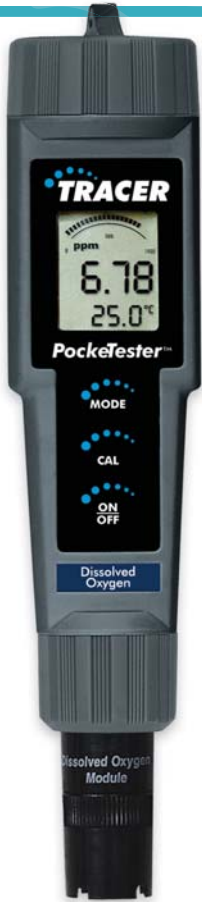
INSTRUMENTATION

SMART3 COLORIMETER REAGENT SYSTEMS

| Test Factor | Test Method [# of reagents] | Range ppm | # of Tests | Order Code | Ship Code/ Prop 65† |
|------------------------------|------------------------------------|-----------------|------------|------------|------------------------|
| COD SR with Mercury* | Digestion [1] | 50-1,500 mg/L | 25 | 0076-SC | R1 |
| COD SR without Mercury* | Digestion [1] | 50-1,500 mg/L | 25 | 0073-SC | R1 |
| COD HR with Mercury* | Digestion [1] | 500-15,000 mg/L | 25 | 0077-SC | R1 |
| COD HR without Mercury* | Digestion [1] | 500-15,000 mg/L | 25 | 0074-SC | R1/R |
| Color | Platinum Cobalt [0] | 20-1,000 Cu | ∞ | NA | NH |
| Copper BCA - LR | Bicinchoninic Acid [1] | 0.04-3.50 | 50 | 3640-SC | NH |
| Copper | Cuprizone [2] | 0.03-2.00 | 50 | 4023 | R1 |
| Copper DDC | Diethyldithiocarbamate [1] | 0.10-6.00 | 100 | 3646-SC | NH/B |
| Cyanide | Pyridine-Barbituric Acid [5] | 0.03-0.35 | 50 | 3660-01-SC | R1 |
| Dissolved Oxygen [DO] | Winkler Colorimetric [3] | 0.6-11.0 | 200 | 3688-SC | R1 |
| Fluoride | SPADNS [2] | 0.1-2.0 | 50 | 3647-02-SC | R1 |
| Hardness, Total | Tablet, Colorimetric [1] | 10-400 | 50 | 3671-SC | NH |
| Hydrogen Peroxide LR | DPD [2] | 0.02-1.50 | 100 | 3662-SC | NH |
| Hydrogen Peroxide HR | DPD [2] | 1-60 | 100 | 4045-01 | NH |
| Hydrogen Peroxide Shock | DPD [2] | 10-225 | 100 | 4045-01 | R2 |
| Iron | Bipyridyl [2] | 0.10-6.00 | 50 | 3648-SC | R1 |
| Iron, Total, Ferrous, Ferric | 1,10 Phenanthroline [2] | 0.1-5.0 | 50 | 3668-SC | R1 |
| Lead | PAR [5] | 0.1-5.0 | 50 | 4031-01 | R1/C |
| Manganese LR | PAN [3] | 0.01-0.70 | 50 | 3658-01-SC | HF/R |
| Manganese HR | Periodate [2] | 0.3-15.0 | 50 | 3669-SC | R1 |
| Nitrate Nitrogen LR | Cadmium Reduction [2] | 0.10-3.00 | 20 | 3649-01-SC | R1/B |
| Nitrate | Tablet, Zinc Reduction [1] | 5-60 | 50 | 3689-SC | NH |
| Nitrite Nitrogen LR | Diazotization [2] | 0.02-0.80 | 20 | 3650-SC | NH |
| Nitrogen, Total* | Chromotropic Acid/ Digestion [6] | 3-25 mg/L | 25 | 4026-02 | R1 |
| Ozone LR | Indigo Trisulfonate [3] | 0.01-0.40 | 100 | 3651-SC | NH |
| Ozone HR | Indigo Trisulfonate [3] | 0.05-2.50 | 20 | 3651-SC | NH |
| pH CPR | Chlorophenyl Red [1] | pH 5.0-6.8 | 100 | 3700-01-SC | NH |
| pH PR | Liquid, Phenol Red [1] | pH 6.6-8.4 | 100 | 3700-01-SC | NH |
| pH TB | Thymol Blue [1] | pH 8.0-9.5 | 100 | 3700-01-SC | NH |
| pH | Tablet, Phenol Red [1] | pH 6.6-8.4 | 50 | 3672-SC | NH |
| Phosphate LR | Ascorbic Acid Reduction [2] | 0.05-3.00 | 50 | 3653-SC | R2/C |
| Phosphorus, Total - LR* | Ascorbic Acid/Digestion [5] | 0.50-3.50 mg/L | 25 | 4024-01 | R1 |
| Phosphorus, Total - HR* | Molybdovanadate/ Digestion [5] | 5-100mg/L | 25 | 4025-01 | R1 |
| Potassium | Tetraphenylboron [2] | 0.8-10.0 | 100 | 3639-SC | R1 |
| Silica LR | Heteropoly Blue [4] | 0.05-4.00 | 100 | 3664-SC | R1 |
| Silica HR | Silicomolybdate [3] | 1-75 | 50 | 3687-SC | R1 |
| Sulfide LR | Methylene Blue [3] | 0.06-1.50 | 50 | 3654-02-SC | R1 |
| Tannin | Tungsto-Molybdophosphoric Acid [2] | 0.1-10.0 | 50 | 3666-01-SC | R1 |
| Turbidity | Absorptimetric [0] | 3-400 FTU | ∞ | NA | NH |

* Requires COD Heater Block & COD Adapter Code 5-0087 [sold separately]

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Dissolved Oxygen (DO) TRACER

Dissolved Oxygen Tracer, Order Code 1761 • Shipping Code NH [1]
DO Sensor Module, Order Code 1762 • Shipping Code NH [1]

- Oxygen level displayed as % Saturation from 0 to 200.0% or Concentration from 0 to 20.00 ppm (mg/L)
- Adjustable Altitude Compensation (0-20,000 ft. in 1,000 ft. increments)
- Adjustable Salinity Compensation from 0 to 50 ppt
- Memory stores up to 25 data sets with DO and Temperature reading
- Self-calibration on power up; Data Hold, Auto power off, Low battery indicator
- Optional 3 ft (1m) or 16 ft. (5m) extension cable
- Complete with DO electrode, protective sensor cap, spare membrane cap, electrolyte, four 1.5V SR44W batteries, and 48" (1.2m) neckstrap

| Description | Range | Resolution | Accuracy |
|-----------------|------------------------------------|-----------------|----------------|
| DO [sat. mode] | 0 to 200.0% | 0.1% | ±2% FS |
| DO [conc. mode] | 0 to 20.00 ppm (mg/L) | 0.01 ppm (mg/L) | 0.4 ppm (mg/L) |
| Temperature | 32 to 122°F (0 to 50°C) | 0.1°F/°C | ±1.8°F (1°C) |
| Dimensions | 1.4 x 6.9 x 1.6" (36 x 176 x 41mm) | | |

Optional Accessories

| Description | Order Code | Ship Code |
|---|------------|-----------|
| DO Membrane Kit (6 screw-on membranes and solution) | 1761M | NH [1] |
| Weighted Stand w/Sample Cups (5) | 1746 | NH [1] |
| Sample Cups w/caps (24) | 1745 | NH [1] |
| DO Extension Cable (1 meter) | 1763 | NH [1] |
| DO Extension Cable (5 meters) | 1764 | NH[1] |

pH TRACER

Order Code 1741 • Shipping Code NH [1]

- Read pH from 0.00-14.00 pH to 0.01 pH resolution
- Supplied with 4, 7, 10 pH buffer tablets
- Automatic self calibration to 1, 2, or 3 points
- Extra bold display includes analog bar graph feature
- Memory can store up to 15 readings
- Chlorine and pH modes also display sample temperature
- Unit identifies which probe is in use and retains calibrations
- Automatic shut-off and Low Battery indicator; uses four LR-44 batteries
- Optional total chlorine probe makes unit a true ISE. TCI tablets required

Optional Accessories

| Description | Order Code |
|---|------------|
| pH Probe; Range: 0-14.00/±0.01 pH | 1733 |
| ORP probe; Range: ±999mV/±4mV | 1734 |
| Cl ₂ probe; Range: 0-10.00/±10% of reading | 1732 |
| Optional weighted stand & 5 sample cups | 1746 |
| TCI tablets, 100 pack | 7044A-J |
| Sample cups, 24 pack | 1745 |



SAL/EC/TDS Tracer

Order Code 1749 · Shipping Code NH [1]

This Tracer PockeTester™ offers direct reading of Conductivity, Total Dissolved Solids, and Salinity with one electrode. Simply press the MODE key to select any factor.

pH/TDS/SALT Tracer

Order Code 1766 · Shipping Code NH [1]

This Tracer PockeTester™ offers direct reading of pH, Conductivity, Total Dissolved Solids, and Salinity with one electrode.

| Model | EC/TDS/Salinity Tracer | | | pH/TDS/SALT Tracer | | |
|-----------------------|---|--|----------|---|----------------|-----------|
| | Range | Resolution | Accuracy | Range | Resolution | Accuracy |
| Order Code | 1749 | | | 1766 | | |
| Conductivity | 0 to 199.9 µS, 200 to 1999 µS, 2.00 to 19.99 mS | 0.1 µS/cm, 1 µS/cm, 0.01 mS/cm | ±2% | 0 to 199.9 µS, 200 to 1999 µS, 2.00 to 19.99 mS | 0.1 µS | ±1% |
| TDS | 0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt (g/L) | 0.1 ppm (mg/L), 1 ppm (mg/L), 0.01 ppt (g/L) | ±2% | 0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt | 0.1 ppm (mg/L) | ±2% |
| Salinity | 0 to 99.9 ppm, 100 to 999 ppm, 1.00 to 9.99 ppt | 0.1 ppm, 1 ppm, 0.01 ppt | ±2% | 0 to 99.9 ppm (mg/L), 100 to 999 ppm (mg/L), 1.00 to 9.99 ppt | 0.1 ppm (mg/L) | ±2% |
| pH | — | — | — | 0.00 to 14.11 pH | 0.04 pH | ±0.01 pH |
| Temperature | ± 1°C [1.8°F] | | | 32° to 149°F [0 to 65°C] | 0.1°F/°C | ±1.8°F/°C |
| Power | Four 3V CR-2032 Batteries | | | Four 3V CR-2032 Batteries | | |
| Special Features | Auto Shutoff after 10 minutes, Low BAT indicator, Digital and Analog Display, Hold 15 tagged readings | | | Auto Shutoff after 10 minutes, Low BAT indicator, Digital and Analog Display, Hold 25 tagged readings | | |
| Special Functions | Calibration Function, ATC | | | Self Calibration | | |
| Replacement Electrode | 1765 | | | 1755 | | |



2020i Portable Turbidity Meter

Order Code 1974-I · Shipping Code NH [6]

New RATIOMETRIC design in one of the most innovative, **WATERPROOF**, handheld meters available on the market! Perfect for field and laboratory applications, this compact and easy-to-use instrument is an exceptional value. Includes standards, tubes and carrying case.

Features

- Advanced calibration algorithms
- Easy menu driven operation and large LCD display
- 500 point data log



| Mode | Nephelometric | Ratiometric | Attenuation |
|------------------|--|---|---|
| Unit of Measure | NTU, FNRU, ASBC, EBC | NTU, FNU, ASBC, EBC | NTU, FAU, ASBC, EBC |
| Range | 0-100 NTU/FNU; 0-1,750 ASBC; 0-25 EBC | 0-1,000 NTRU/FNRU; 0-17,500 ASBC; 0-250 EBC | 0-2,000 AU/FAU; 0-70,000 ASBC; 0-1,000 EBC |
| Resolution | 0-10.99 NTU/FNU: 0.01; 11.0-100.0 NTU/FNU: 0.1 | 0-10.99 NTRU/FNRU: 0.01; 11.0-109.9 NTRU/FNRU: 0.1; 110-1000 NTRU/FNRU: 1 | 0-2000 AU/FAU: 1 |
| Accuracy | 0-2.5 NTU/FNU: ±0.05; 2.5-100 NTU/FNU: ±2% | 0-2.5 NTRU/FNRU: ±0.05; 2.5-100 NTRU/FNRU: ±2%; 100-1000 NTRU/FNRU: ±3% | 0-2000 AU/FAU: ±10 AU/FAU or 6%, whichever is greater |
| Detection Limit | 0.05 NTU/FNU | 0.05 NTRU/FNRU | 10 AU/FAU |
| Reproducibility | 0.02 NTU/FNU or 1% | 0.02 NTRU/FNRU or 1% | 1% |
| Range Selection | Automatic | | |
| Light Source | IR LED 860 nm ±10 nm, spectral bandwidth with 50 nm | | |
| Detector | Photodiode, centered at 90° and 180° | | |
| Signal Averaging | Disabled, 2, 5, 10 | | |
| Power | USB computer cable, wall adapter or Lithium ion rechargeable battery | | |
| Data Logging | 500 points | | |
| Auto Shut-Off | Disabled, 5, 10, 30 seconds | | |
| Languages | English, French, Spanish, Japanese, Italian, Portuguese, Chinese | | |
| Response Time | <2 Seconds | | |
| Display | 6-line LCD with backlit display | | |
| Size | 7.5 x 3.5 x 2.5 inches; 19.05 x 8.84 x 6.35 cm | | |
| Weight | 13 ounces | | |

SAMPLING EQUIPMENT

Visit our website www.lamotte.com for our complete selection of water sampling equipment.



Code 1087

Horizontal Water Sampler

Order Code 1087 · Shipping Code NH [5]

Collect water samples quickly and easily! This newly designed horizontal water sampler allows water to be sampled at specific depths. A 20 meter calibrated line, marked at one meter intervals, is included. The clear polycarbonate tube allows a visual inspection of the sample prior to dispensing and holds approximately 1,200 mL of sample. Send the weighted messenger down the line to trip the closing mechanism at the desired depth. Open one chamber end cap to dispense sample.



Secchi Disk

Order Code 0171-CL
Shipping Code NH [7]

Order Code 0171 [Disk Only]
Shipping Code NH [3]

To determine water turbidity in the aquatic environment. A weighted black and white quadrant plastic disk (20 cm diameter) is lowered into the water until it disappears. Calibrated line is marked every half meter up to 20 meters. Braided line.



Armored Thermometer

Model 545 · Order Code 1066
Shipping Code NH [1]

A precision thermometer furnished in a protective plastic jacket with window opening. Engraved graduations on white tubing center increases readability which covers the range of -5° to 45°C in 0.5° increments.



Sounding Lead & Calibrated Line

Order Code 1064-G
Shipping Code NH [4]

This heavy nylon line is marked from 0-20 meters and has a spring clip for easy attachment to a Secchi Disk, plankton net or a lead weight. A 2 lb. [0.9Kg] lead weight is provided. The nylon line wraps conveniently around an ethafoam block which also acts as a float to prevent accidental loss.

 **LaMotte**[®]
Water Testing Leader Since 1919

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