



# TEST INSTRUCTIONS

**1** Place vials in racks as indicated on the place mat.

**2** Hold pipettor upright. Press to the **FIRST STOP**, then immerse tip in the sample to be tested.

**TIP:** When dispensing, press plunger down to second stop.

**3** Release plunger slowly to fill. Make sure each fill is near the 3 mL mark.

**4** Depress plunger to **SECOND STOP** to add 3 mL of sample to a clean BLANK vial. Insert the vial into the meter and press Chlorine button to turn meter on.

**5** Begin by filling the Iron vial on the far right. Use your **finger tip** to press the pipettor tip through the foil lid. Hold pipettor upright and dispense. **NOTE:** If optional Nitrate and Borate factors are to be tested, fill Borate vial and then Nitrate vial now. Follow the set up on the counter mat.

Color development time of reactions begins now.

**0:00**

**6** Fill the remaining vials, from right to left, finishing with Free Chlorine. This allows for proper color development.

Time since Iron vial was filled.

**0:30**

**7** Once the meter has reached 0.0 press Chlorine button to advance to FREE Chlorine.

BLANK 0.0

Time since Iron vial was filled.

**0:40**

**8** Invert **FREE CHLORINE vial 3 times** to mix. Insert vial in meter and read result. Press Chlorine button to advance to Total Chlorine **BEFORE** removing vial.

FREE CHLORINE 1.0

Time since Iron vial was filled.

**0:50**

**9** Invert **TOTAL CHLORINE vial 3 times** to mix. Insert vial in meter and read result. Press button to advance to pH. Remove vial.

TOTAL CHLORINE 1.0

Time since Iron vial was filled.

**1:10**

**10** Invert **pH vial 3 times** to mix. Insert vial in meter and read result. Press button to advance to Hardness. Remove vial.

pH 7.4

Time since Iron vial was filled.

**1:30**

**11** Invert **Calcium Hardness vial 3 times**, insert into meter, and read result. Press button to advance to Alkalinity. Remove vial.

HARDNESS 200.0

Time since Iron vial was filled.

**1:50**

**12** Invert **ALKALINITY** vial 3 times, insert vial in meter, and read result. Press Chlorine button to advance to Cyanuric Acid. Remove vial.



**13** Invert **CYANURIC ACID** vial 3 times, insert vial in meter, and read result. Press button to advance to Copper. Remove vial.



**14** Invert **COPPER** vial 3 times, insert vial in meter, and read result. Press button to advance to Iron. Remove vial.



**15** Invert **IRON** vial 3 times, insert vial in meter, and read result. Press button to advance to Nitrate. Remove vial.



**16** Invert **NITRATE** vial 3 times, insert vial in meter, and read result. Press button to advance to Borate. Remove vial. **NOTE:** The Nitrate test vials are not included with the WaterLink Express, but sold separately.



Use Code #4321-H to order Nitrate UDVs.

**17** Invert **BORATE** vial 3 times, insert vial in meter, and read result. Press button to shut off the meter. Remove vial. **NOTE:** The Borate test vials are not included with the WaterLink Express, but sold separately.



Use Code #4322-H to order Borate UDVs.

### HOW TO GET RELIABLE RESULTS

**1. Read Instructions Carefully** They are short but very important to follow!

**2. Note Development Times for Color Reactions** If the user goes too fast the alkalinity, hardness and other tests may not get adequate color development time. Use the "fill from the right, read from the left" method to allow enough time. Keep in mind the free chlorine vial should be analyzed within 30 seconds.

**3. Insert a Filled Sample Blank Vial** Before each set of tests the WaterLink Express meter asks for a Blank sample. Always use a clean, clear vial with at least 3mL of pool sample. Do not just insert an empty vial without a water sample.

**4. Invert Vials 3 Times to Mix Contents Before Analysis - Do Not Shake!** The UDVs are designed to be inverted 3 times then placed in the meter. If clumps of powder are lodged in the corner, tap the vial on the counter then invert. Should water get on the outside of the vial, wipe the vial with a dry cloth.

**5. Press Meter Button BEFORE Removing Vial** The instrument displays the test result but does not send the result to a software program until the meter button is pushed to go forward. The meter may send an empty chamber value if the operator pulls the vial out before the button is pushed. Make new employees aware of this.

**6. Protect The Opened UDVs from Moisture** Once out of their protective foil pouch, the plastic vials can absorb enough

moisture to affect test results in 24-36 hours. A foil storage bag is provided so both racks of tubes can be protected for a week or more (depending on how long UDVs stay outside the bag). Make sure NO WET VIALS get left inside the bag for they will quickly destroy the rest!

**7. Avoid Precutting Pouches of UDVs** This may appear to save time but for reasons noted in #6 only open what you need for each day. Store leftovers in the foil bag and use those first the next day. Sealed pouches are good for 18 months.

**8. Make Sure the Pipettor is Delivering 3mL of Water** The pipettor barrel has an embossed line at 3mL. Use a marker to highlight this for new staff members and confirm they know how to look for improper fills due to air bubbles. If someone presses the plunger all the way to the handle they can overload the pipettor and vial.

**9. Dispense Samples Smoothly to Avoid Bubbling** By aggressively squirting the water samples in the vials some bubbling could occur. A smooth, even dispensing method against the sides of vials reduces bubbling. Invert vials or tap them on the counter to dislodge bubbles.

**10. Train Employees on Common Interferences** All testing systems are subject to problems when excessively high chlorine/bromine levels are present. The Alkalinity UDV can sometimes read low if pool owners have 2-3 times the normal doses. See the back of the instruction booklet for more information on identifying interferences.

**Tech Support: 800-344-3100 (8-5 pm EST) or tech@lamotte.com**

## The COLOR DEVELOPMENT REACTION TIMES

The WaterLink Express is designed to provide accurate results when all ten tests are run in sequence. To run an individual test for a selected test factor, wait the specified time before mixing and reading the test result.

	Free Chlorine†	Total Chlorine	pH	Total Hardness	Total Alkalinity	Cyanuric Acid	Copper	Iron	Nitrate	Borate
(Minimum) Color Development Time:	0 MINUTE	1 MINUTE	1 MINUTE	1 MINUTE	1.5 MINUTES	2 MINUTES	2 MINUTES	3 MINUTES	3 MINUTES	3 MINUTES
(Maximum) Best if analyzed before:	0.5 minute	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes	5 minutes

†Bromine tests can be performed using Free or Total Chlorine UDVs.

## What Fresh UDV Powders Should Look Like

The following descriptions identify what each of the powders inside the UDVs should look like prior to use. We recommend posting this in an area where all lab users can easily refer to the list.

Description	Code	IDEAL Powder Conditions	DETERIORATING UDV Powder Conditions
*Hardness	4309	fluffy, light purple	clumpy, dark purple crystals
pH (phenol red)	4310	fluffy, peach	clumpy, dark pink/red or orange
*Free Chlorine	4311	fluffy, white	clumpy, gray or black crystals
*Total Chlorine	4312	fluffy, white	clumpy, gray or black crystals
Cyanuric Acid	4313	fluffy, white	clumpy, white
Copper	4314	fluffy, light tan	clumpy, dark tan to brown
*Total Iron	4315	fluffy, white	clumpy, tan/brown, vial may appear to be eroded inside
Alkalinity	4318	fluffy, peach	clumpy, orange/brown
Nitrate	4321	fluffy, light tan/brown	clumpy, dark tan/brown
Borate	4322	fluffy, light tan/brown	clumpy, dark tan/brown

\*Potential Health Hazard - Read MSDS at [www.lamotte.com](http://www.lamotte.com)



## WATERLINK® EXPRESS LAB ON-LINE CERTIFICATION EXAM



Available for WaterLink® Express lab owners is the WaterLink® Express Lab Certified Water Testing Professional Exam that can be found at [www.lamotte.com/exam](http://www.lamotte.com/exam). The exam has 18 questions regarding proper use of WaterLink Express which only takes a few minutes to answer. After the WaterLink® Express analyst passes the exam their store will receive one 36" by 24" WaterLink® Express Certified Water Testing Professional wall banner. The dealer's location and information will then be placed on our WaterLink® Express Certified Water Testing Professional dealer locator to help homeowners find a local WaterLink® Express analyst. Also, each individual store associate who passes the test will receive a certificate for passing the exam.