



Community Science Institute

www.communityscience.org

Volunteer Monitoring

Watershed Science

Risk Communication

LaMotte Test Kit Instructions for "Red Flag" Monitoring Volunteers

Dissolved Oxygen - (Kit code 5860)

1. Fill water sampling bottle completely with no air bubbles. The easiest way to do this is to hold the bottle upright underwater and screw on the lid.
2. Add 8 drops of Manganous Sulfate Solution.
3. Immediately add 8 drops of Alkaline Potassium Iodide Azide.
***Note* At this point the sample has been "fixed" and the remainder of the test can be completed up to 8 hours later. These first two steps MUST take place immediately!**
4. Replace the cap and invert the bottle several times to mix the solutions. Allow the precipitate to settle below the shoulder of the bottle before continuing.
5. Add 8 drops of Sulfuric Acid.
6. Replace the cap and invert the bottle to mix until all of the precipitate has dissolved. This may take up to 30 minutes, especially when the water is cold.
7. Once the precipitate has completely dissolved, fill the test tube to the 20 ml line with your sample water and cap.
8. Fill the titrator (plunger) with Sodium Thiosulfate solution.
9. Add drops of Sodium Thiosulfate until the sample becomes pale yellow and place the titrator to the side. *Do not add or remove any more drops from the titrator - you will come back to this!*
10. Add 8 drops of Starch Indicator.
11. Continue adding drops of the Sodium Thiosulfate until the blue color just disappears and solution is colorless.
12. If you use all of the Sodium Thiosulfate in the plunger and the blue color is still present, refill the titrator and continue the titration. When recording your result add 10 to your result to account for the first full titrator.
13. Read your result where the green ring touches the outside of the plunger.
14. Record your result on your field data sheet in the Dissolved Oxygen section.
For your Dissolved Oxygen duplicate, you can use the sample in any glass bottle up to 3 times once it has been fixed. Begin at step 7 for your duplicate test.



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Total Hardness (Kit Code 4482-DR-LT)

1. Fill test tube to the 12.9 ml line with sample water.
2. Add five (5) drops of Hardness Reagent #5 and mix.
3. Add one (1) Hardness Reagent #6 tablet. Cap and swirl test tube until tablet dissolves. Solution will turn red if hardness is present. If solution is blue there is no hardness present.
4. Fill the titrator (plunger) with Hardness Reagent #7 and insert into the center hole of the test tube.
5. While gently swirling the test tube, **slowly** press the plunger to add Hardness Reagent #7 until the red color changes to blue.

**Note* Red color will turn purple before turning blue and this is a signal that you are approaching the endpoint and should slow down. Once the solution is blue, it will stay blue no matter how many additional drops you add. The blue color is deep blue, similar to the color of the test kit boxes. Holding the test tube up to natural light or a white piece of paper will help catch this color change. If you are unsure if you've reached the blue, take note of the reading on the titrator, add one more drop, and see if the color continues to change. If it doesn't change, use your original reading. If it continues to change, keep adding drops until you reach the blue endpoint.*

6. If you use all of the Hardness Reagent #7 in the plunger and the color change still has not happened, refill the titrator and continue the titration. When recording your result add 200 to your result to account for the first full titrator.
7. Read your result where the green ring touches the outside of the plunger.
8. Record your result on your field data sheet under the Total Hardness section.

pH (Kit Code 5858)

1. Fill test tube to 10 ml line with sample water.
2. Add 10 drops of pH Wide Range Indicator
3. Insert test tube into the test tube reader, choose the color that matches best and record your result in the pH section of the field data sheet. If the color is in between two results, you can record an average of .25 or .75.