



Water Quality

AT38/40 Demo Outfit

Instruction Mat for Demo Kits

Precipitation Demonstration

NOTE: This portion of the AT-38/40 Water Quality Demo Kit is ONLY a visual demonstration illustrating the removal of Calcium and Magnesium ions from tap water after treatment by the ion exchange process. The results should not be interpreted beyond the intent of the demonstration.

TEST PROCEDURE

1 Thoroughly rinse the "SOFT" water Demo Tube [0298] with softened water.	2 Thoroughly rinse the "HARD" water Demo Tube [0297] with untreated water.	3 Fill the "SOFT" Demo tube [0298] to the line with softened water.
4 Fill the "HARD" water Demo Tube [0297] to the line with untreated water.	5 Add 7 drops of *Precipitation Reagent A [4542WT] to each tube.	6 Cap and mix.
7 Add 7 drops of Precipitation Reagent B [4543WT] to each tube.	8 Cap and mix.	9 Place tubes in the Precipitation Rack [0879] and allow the tubes to stand for 5 minutes.

Total Hardness

TEST PROCEDURE

1 Thoroughly rinse the sample tube [4488] with the water to be tested.	2 Fill the sample tube [4488] to the desired line** with the sample water.	3 Add 5 drops of *Hardness Reagent #5 [4483].
4 Swirl to mix.	5 Add either 1 Hardness Reagent #6 Tablet [4484A] or 5 drops of *Hardness Reagent #6 [4485].	6 Swirl to mix. Solution will turn red if hardness is present. If solution is blue, there is no measurable amount of hardness.
7 Counting the number of drops and swirling between drops, add Hardness Reagent #7 [4487WT] one drop at a time until the red color changes to clear blue.	8 Multiply the number of drops used in Step 7 as follows: Tube filled to upper line: each drop equals 10 ppm Hardness as CaCO ₃ Tube filled to middle line: each drop equals 1 gpg Hardness as CaCO ₃ Tube filled to lower line: each drop equals 20 ppm Hardness as CaCO ₃	

** When the tube is filled to upper line, each drop of Hardness Reagent #7 is equal to 10 ppm.
When the tube is filled to middle line, each drop of Hardness Reagent #7 is equal to 1 gpg.
When the Hardness level is over 200 ppm, fill to lower line. Each drop of Hardness Reagent #7 is equal to 20 ppm.

pH

TEST PROCEDURE

1 Insert Wide Range pH Octa-Slide 2 Bar [3483-01] into the Octa-Slide 2 Viewer [1101].	2 Fill a test tube [0106] to the 10 mL line with sample water.	3 Add 8 drops of *Wide Range pH Indicator [2218].
4 Cap and mix.	5 Insert test tube into Octa-Slide 2 Viewer. Hold the viewer so that non-direct light enters through the back.	6 Match sample color to a color standard. Record as pH.

Soap Demonstration

TEST PROCEDURE

1 Thoroughly rinse the "SOFT" water flask [0453] with softened water.	2 Thoroughly rinse the "HARD" water flask [0452] with untreated water.	3 Fill the "HARD" flask [0452] with untreated water until the bottom surface is covered with a layer of water about 1/2" deep.
4 Fill the "SOFT" flask [0453] with softened water to the same level.	5 With the pipet [0392], add 4 drops of *Soap Reagent #4 [4767] to each flask.	6 Cap and shake the flasks.
7 A thick lather will form in the softened water.	8 Continue to add *Soap Reagent #4 [4767], one drop at a time, to the untreated "HARD" water, shake periodically until a lather forms. Count the number of drops added.	9 Extremely hard water may require 30, 40, or even 60 drops of *Soap Reagent #4 to produce a lasting lather.

Iron

TEST PROCEDURE

1 Insert Iron Octa-Slide 2 Bar [4448-01] into the Octa-Slide 2 Viewer [1101].	2 Fill a test tube [0106] to the 5 mL line with the water sample.	3 Add 5 drops of *Iron Reagent #1 [4450].
4 Cap and mix.	5 Use the 0.05g spoon [0696] to add 0.05g of *Iron Reagent #2 [4451].	6 Cap and gently shake to dissolve powder.
7 Wait 3 minutes.	8 Insert test tube into Octa-Slide 2 Viewer. Hold the viewer so that non-direct light enters through the back.	9 Match sample color to a color standard. Record as ppm Iron.

Optional Tests for Demo Kits

Chlorine

TEST PROCEDURE

1 Insert DPD Octa-Slide 2 Bar [3401-01] into the Octa-Slide 2 Viewer [1101].	2 Fill a test tube [0106] to the 10 mL line with the water sample.	3 Add one DPD #1R Tablet [6999A].	4 Cap and mix until tablet disintegrates.	5 Insert test tube into Octa-Slide 2 Viewer. Hold the viewer so that non-direct light enters through the back.	6 Match sample color to a color standard. Record as ppm Free Available Chlorine.
7 Retain this sample if Total Residual and Combined Chlorine are to be determined.	8 Insert DPD Octa-Slide 2 Bar [3401-01] into the Octa-Slide 2 Viewer [1101].	9 Add one Chlorine DPD #3 Tablet [6905A] to the sample from Step 6.	10 Cap and mix until tablet disintegrates.	11 Insert test tube into Octa-Slide 2 Viewer. Hold the viewer so that non-direct light enters through the back.	12 Match sample color to a color standard. Record as ppm Total Residual Chlorine.

TDS

See TRACER Salt/EC/TDS PockeTester Manual [Code 1749].



*Reagent is a potential health hazard.
READ SDS: lamotte.com
Emergency information:
Chem-Tel USA 1-800-255-3924
Int'l, call collect, 813-248-0585



USE OF THE OCTA-SLIDE 2 VIEWER

Nitrate Nitrogen

TEST PROCEDURE

1 Insert Nitrate-Nitrogen Octa-Slide 2 Bar [3494-01] into the Octa-Slide 2 Viewer [1101].	2 Fill a test tube [0106] to the 5 mL line with the water sample.	3 Add one Nitrate #1 Tablet [2799A].	4 Cap and mix until tablet disintegrates.	5 Add one *Nitrate #2 CTA TesTab [NN-3703A]. Immediately slide the test tube into the Protective Sleeve [0106-FP].	6 Cap and mix for two minutes to disintegrate the tablet.
7 Wait 5 minutes. Remove the tube from the Protective Sleeve.	8 Insert test tube into Octa-Slide 2 Viewer. Hold the viewer so that non-direct light enters through the back.	9 Match sample color to a color standard. Record as ppm Nitrate Nitrogen.	10 To convert to Nitrate, multiply results by 4.4. Record as ppm Nitrate.		11 NOTE: Nitrate #2 CTA Tablets [NN-3703A] are sensitive to UV light. If testing indoors, there is no need to use the Protective Sleeve in this procedure.

