



Instructions – Delaware River Basin Survey of Salt in Tap Water

Overview

The following is a protocol for documenting salt levels in tap water as represented by the concentration of chloride ions (Cl⁻). Measuring electrical conductivity is also recommended as it can provide additional explanatory information and is directly related to chloride concentration. Questions? Contact David Bressler (dbressler@stroudcenter.org)

Equipment/Supplies

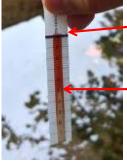
- Chloride QuanTab® Test Strips, 30-600 mg/L or other chloride measurement method
- Conductivity meter (e.g., <u>Hanna DiST®3 Waterproof EC Tester</u>)
- Conductivity meter calibration solution (e.g., 1413 μS/cm Conductivity Standard)
- Data entry form: Delaware River Basin Survey of Salt in Tap Water

Method

- 1. Acquire some tap water from a house or building/office. Note: if a water softener is being used, please take the sample from an outdoor tap that is not treated with the softener.
- 2. Measure chloride using Hach QuanTab strips (see detailed description below).
- 3. Measure conductivity (make sure to calibrate the meter using conductivity standard beforehand).
- 4. Enter this information along with the address of the tap water location and water source information into the <u>data</u> entry form (to find the source of your water check your local water utility's website).
- 5. After you submit the data form you will receive a confirmation email with a record of your data and with a link for viewing all data that have been submitted, viewable as a spreadsheet. Summary graphs and maps may be available at a later date.

<u>Chloride strip usage</u>: Follow directions provided by the manufacturer (on back of bottle). The basic process is to stand a test strip vertically in about an inch of water (in any plastic or glass container), wait several minutes for the horizontal yellow line at the top of the strip to turn black, then read the test strip and use the chart to translate results into a chloride concentration (mg/l). Note that the chart conversions may vary slightly between bottles.





Black line at top indicates strip is ready to be read

Chloride level, at peak of white gradient

Quantati ppm(mg/L) Units %NaCl Cr	Quantab ppm(mg, Units %NaCl Cl*	L)
1.20.00529	4.60.034205	QUANTAB [®] Test Strip
1.40.00635	4.80.036221	
1.60.00742	5.0 0.039 239	1.1
1.80.00849	5.2 0.042 257	1.2
2.00.00956	5.40.045276	-75
2.2 0.011 64	5.60.049296	Vinda and
2.40.01273	5.80.052318	Band -
2.6 0.013 82	6.0 0.056 341	F 8 3
2.80.01591	6.20.060365	-8
3.00.017101	6.40.065391	-8
3.20.018112	6.60.069419	2500
3.40.020123	6.80.074449	White E
3.60.022135	7.00.079482	Flook Earl
3.8 0.024 148	7.20.085517	
4.0 0.027 161	7.4 0.092 556	Santa and
4.2 0.029 175	7.60.099599	
4.40.031189	7.80.107646	

Conductivity meter usage: Calibrate the meter using conductivity calibration solution and measure conductivity.

National Recommendations

National Recommendations		
Standard	Chloride (Cl')(mg/l)	
EPA Secondary Drinking Water Regulation for Chloride	250	
EPA Drinking Water Advisory for Sodium (Na ⁺) = 30-60 mg/l	46-93*	
EPA Drinking Water Advisory for Sodium (Na ⁺) "low/no salt diets" = 20 mg/l	31*	

*Estimate of Chloride concentration based on atomic mass units of Sodium and Chloride (NaCl): Na=23, Cl=35; note other salts such as MgCl₂, CaCl₂, and KCl not considered. https://www.epa.gov/sdwa/drinking-water-regulations-and-contaminants; https://www.epa.gov/sites/default/files/2014-09/documents/support_cc1_sodium_dwreport.pdf