

## DESCRIPTION

SteriChek Sensitive Low-Range Water Hardness Reagent Strips provide a quick, convenient means of testing the level of hardness after the water-softener stage of the water treatment process. Hardness is the total concentration of calcium and magnesium, expressed as mg/l, ppm or grains/gallon of calcium carbonate (CaCO<sub>3</sub>). Softening is a pretreatment process for water that will generally undergo further purification, such as reverse osmosis.

SteriChek Sensitive Low-Range Water Hardness Reagent Strips have color blocks at levels of 0, 5, 10 and 20 ppm (mg/l). (This correlates to 0, 0.3, 0.6, and 1.2 grains/gallon, respectively.)

The test strips are supplied ready-to-use. The indicator pad changes color relative to the level of calcium and magnesium present when the strip is used according to the directions.

## ⚠ WARNING

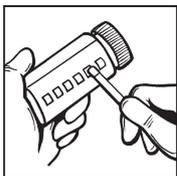
- **Keep all unused strips in the original bottle. Do not remove desiccant pack. Replace cap immediately and tightly after removing a strip; the strips must be protected from heat and humidity.**
- **Do not touch the reagent pad area. Do not allow the pad to come into contact with liquids or with work surfaces, as these may be contaminated with potentially interfering substances.**

## ⚠ IMPORTANT

**Always compare test results to the color chart on the SteriChek bottle for proper interpretation.**

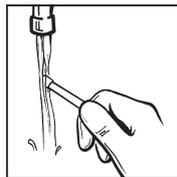
### Directions in Sample:

1. Dip test pad in sample for 5 seconds and remove.
2. Compare test pad to color chart 15 seconds after removing from sample.

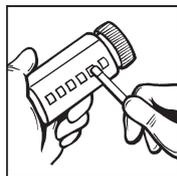


### Directions in Stream:

1. Hold test pad directly in moderate stream for 2 seconds and remove.



2. Compare test pad to color chart 15 seconds after removing from stream.



### For Quality Control:

Each facility should determine its own quality control procedure. Samples of untreated feed water and water at the post-treatment stage can be used as “reactive” controls. Typically, feed water\* will display high levels of hardness in contrast to the purified water at the post-treatment stage. Testing the two samples with several SteriChek Low-Range Water Hardness Test Strips will allow the user to observe and characterize the performance of the strips.

Regular use of Quality Control procedures will increase user proficiency, and will provide the user with a warning of a possible test strip error, potential use of outdated test strips, or of improperly stored or handled test strips.

\*Note: In the event that the incoming water supply does not have significant levels of hardness, spring water from the bottled drinking water section of the grocery store can be used as a positive control.

### STORAGE

The SteriChek Sensitive Low-Range Water Hardness Reagent Strips must be kept in the original bottle with the lid tightly closed to obtain the best results. Do not remove the desiccant pack. Store at temperatures between 16° and 32°C (60° - 90°F). Use within 6 months after first opening bottle. Do not use the test strips (from an opened or unopened bottle) after the expiration date.

## RESULTS

The hardness of a water sample is obtained by comparing the color of the reagent test pad with the color chart. Primary values are designated at 0, 5, 10 and 20 ppm (mg/l) (0, 0.3, 0.6, and 1.2 grains/gallon, respectively). Concentrations (color development) which fall between color block values should be estimated.

NOTE: The color of the indicator pad may continue to change after the read time. It is important to interpret the results of the test strip at the specified read time to assure appropriate results.

## PERFORMANCE CHARACTERISTICS

The test strips detect calcium and magnesium at the maximum allowable AAMI levels for these ions. The accuracy and precision of SteriChek Hardness Reagent Strips were demonstrated with solutions containing 0, 5, 10 and 20 ppm (mg/l) as calcium carbonate using calcium chloride standard solutions from Hach Company. An accredited reference laboratory using the ICP method following U.S. EPA methodologies measured calcium levels in the standard solutions. The average mg/l (ppm) reagent strip values were as follows (standard deviation and number of replicates in parentheses): 0.0 (0.00, N=48), 4.6 (0.91, N=60), 9.3 (0.64, N=60), and 18.3 (1.60, N=48). The results show that the total hardness reagent strip readily distinguishes the hardness levels shown. The strip therefore provides a convenient and accurate means of measuring and monitoring total hardness at very low levels in water.

## BLIND STUDY RESULTS

Total Hardness (as CaCO<sub>3</sub>), 95% of the readings (avg. +/- 2 s.d.) should fall between:

0 ppm (mg/l)	0 ppm (mg/l) - 0 ppm (mg/l)
5 ppm (mg/l)	3 ppm (mg/l) - 6 ppm (mg/l)
10 ppm (mg/l)	8 ppm (mg/l) - 11 ppm (mg/l)
20 ppm (mg/l)	15 ppm (mg/l) - 22 ppm (mg/l)

## LIMITATIONS

SteriChek Sensitive Low-Range Water Hardness Reagent Test Strips were developed to measure the total hardness (magnesium and calcium) in potable water and may not be accurate when measuring hardness in other solutions.

The temperature of the water being tested should be between 10° and 35°C for accurate results. If testing is done in water with temperatures higher than 35°C, the hardness results may be falsely elevated. In water below 10°C results may be falsely low.

## AVAILABILITY

Product Code 811911 SteriChek Sensitive Low-Range Water Hardness Reagent Strips includes six bottles of 50 reagent strips and a multilingual product insert. Also enclosed for your use are color-coded stickers that correspond to the color of the bottle label and kit box label. These stickers may be applied on the top of each bottle for easy product identification. Each sticker includes a space to record the date the bottle is opened.

These SteriChek testing products are also available from your distributor:

811900	Residual Chlorine Reagent Strips
811902	0.1 ppm Total Chlorine DPD Kit
811903	0.1 ppm Total Chlorine DPD Refill Kit
811905	Residual Peroxide Reagent Strips
811906	Peracetic Acid Reagent Strips
811909	Sensitive 0.1 ppm Total Chloramines and Residual Chlorine Reagent Strips
811912	Chlorine Control Tablets
811913	Residual Peroxide Control Tablets
811916	Bicarb pH Reagent Strips
812014	Blood Leak Reagent Strips

Made and Printed in the U.S.A.