# Water*Check*™ *RC*

For Residual Chlorine
in Rinse Water

## DESCRIPTION:

Bleach (chlorine) solution is commonly used as cleaning agent to disinfect the dialysis machines and the supporting system. The cleaning agent is then rinsed off with deionized or RO water before the system is ready for the next patient. Any residual chlorine remained in the system may contaminate patients' blood and cause hemolysis. The Water*Check RC* test strip can detect less than 0.5 ppm of residual chlorine, the maximal allowable level as recommended by Association for Advancement of Medical Instruments (AAMI). The strip also react with 1% Bleach solution (500 ppm chlorine) to a dark brown color, and can be used as an qualitative indicator strip for the presence of bleach.

## PRINCIPLE OF THE TEST

Reaction of Water*Check RC* Residual Chlorine test strip is based on reaction of chlorine with a chlorine indicator to a blue chromophobe.

| | Bleach/Residual Chlorine | |
|---|---|---|
| Chlorine Indicator | ==========> | Blue colored |
| (Colorless) | (Activator) | complex |

The strip will react with free and total chlorine, including monochloramine.

## DIRECTION FOR USE

Two test procedures can be used depending on the convenience and sensitivity requirement of individual facility operation.

### Qualitative Test:

This procedure allows quick screening for the absence of chlorine in rinse water.

1. Dip the strip in the rinse water for one second, or apply a brief stream of test water onto the strip from a syringe.
2. Any blue color developed on the strip should be interpreted as the presence of 0.5 ppm or more of chlorine. Conversely, a negative test result is indication of less than 0.5 ppm of chlorine per AAMI standard.

### Quantitative Test:

This procedure allows a more accurate determination of chlorine levels. Since reading of strip color may vary depending on the lighting condition and an individual's visual perception of color, correlation of the results with a standardized DPD procedure can only be considered semiquantitative.

1. Turn on the test water to a slow running stream and let the water runs for about 1 minute to flush out the tubing.
2. Remove a Water*Check RC* test strip from the bottle and replace the cap immediately.
3. Hold the strip under the water stream with reagent pad facing the water for **5 seconds.** Or, dip and move the strip back-and-forth in the solution in a cup for **10 seconds**.
4. Compare the strip color with the color blocks on the label. If the strip color falls between two color blocks, interpolate the result.
5. Any blue color detected with the strip is interpreted as positive. The detection sensitivity of the strip for residual chlorine is about 0.2 ppm or less.

**Detection of High Levels of Bleach/Chlorine:**
The Water*Check RC* Chlorine test strip will react with chlorine solutions beyond 1.0 ppm to a different shades of blue. Dip the strip in the test water for one second. The following table indicate the range of chlorine levels corresponding to each different strip color. The strip will react to a lighter brown color with an 1:10 dilution (10 % solution) of 5.25 % sodium hypochlorite (bleach concentrate).

| 3ppm | 5 | 10 | 50 | 100 | 300 | 500 |
|---|---|---|---|---|---|---|
| Aqua Blue | Sky Blue | Ocean Blue | Navy Blue | Dark Blue | Black Blue | Dark Brown |

## QUALITY CONTROL

Feed water can be used as a positive control solution. Most municipal waters contain chlorine levels between 0.5 to 2 ppm. The strip should react to a strong positive color equal or darker than 0.5 ppm color on the label. Since hot water has no chlorine, a sink water may be tested negative for chlorine with the strip. Positive control solution can also be prepared from a 5.25 % hypochlorite solution (Bleach). Dilute the Bleach solution 100 folds, then diluted further 1000 folds with deionized water. The test strip should develop a positive blue color between 0.5 and 1.0 ppm. If there is any suspicious about a positive test result, a negative control can be performed with a deionized water.

If there is low or no chlorine in the feed water, positive control can be performed with an optional control kit. The kit contains 50 of dry powder pouches and a dilution vial. Dissolve content of the control pouch into 20 mL of deionized or R.O. water. Dip the strip into the solution for one second. The strip should develop a color close to 1 ppm color block and higher than 0.5 ppm color. Order the control kit separately. Perform QC test on one bottle from each box or each lot received. More frequent if required.

## LIMITATION

Water*Check I* Residual Chlorine Test Strip is specially designed for detection of residual chlorine in dialysis rinse water. However, the strip will also react with bromine, iodine or other oxidizing agents. Nevertheless, simultaneous presence of mixed oxidizing agents in the dialysis water is not very likely. For safety of patients, the dialysis water should always be tested negative with the strip.

## STORAGE

Store the Water*Check RC* Residual Chlorine Test Strip at room temperature between 59°F and 86°F (15°-30°C). Do not expose the strip under direct sun light. Do not refrigerate. Use the strip within three months after opened.

## IMPORTANT PRECAUTIONS

Always keep hand dry when removing strip from the bottle. Remove only the required strip before testing and immediately replace the cap tightly. Exposure of the uncovered strip to light and moisture may cause premature greenling of the strip and cause the strip test false positive. Do not use the strip if it turns green before testing or after the expiration date (opened or unopened). Do not touch the reagent pad with finger or any other surface.


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| Reorder No. | RC221-01 | 100 Strips/Bottle |
|---|---|---|
| | RC221-01-6 | Package of 6 bottles |
| | CC201-51 | Quality Control Kit |


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