

DESCRIPTION

SteriChek Residual Peroxide Reagent Strips provide a convenient, accurate means of measuring the concentration of residual peroxide in the rinse water from dialyzers and dialysate lines that are disinfected with peroxide/peracetic acid. A qualitative rapid screening method with SteriChek strips detects residual disinfectant levels above 1 ppm (mg/l), used to determine if the disinfectant has been adequately rinsed from the machine. A 15 second quantitative method may be used in situations where:

- quick estimation between 0 and 10 ppm is desired
- color is obvious immediately after the reagent area is removed from the solution
- correction is required on machines dispensing levels of disinfectant that are unacceptable over an extended period of time.

Peracetic acid concentration levels are much lower than hydrogen peroxide, resulting in an estimate of the total residual peroxide level.

Results of 3 ppm and higher indicate that additional rinsing of the machine is required. ¹



WARNING

- **Improper strip activation and color interpretation may result in patient injury.**
- **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

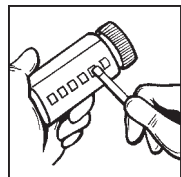
Always compare test results to the color chart on the SteriChek bottle for proper interpretation.

DIRECTIONS

Testing may be done at any port where disinfectant rinse has passed through dialyzer. Verify test strip expiration date to ensure product viability.

For Qualitative Results:

1. Immerse strip in rinse solution for two seconds and shake off excess sample.
2. Check for apparent coloring on strip immediately after removal. If no color is present, the hydrogen peroxide concentration is less than 1 ppm (mg/l). No further rinsing is necessary.



For Quantitative Results:

1. Immerse strip in rinse solution for two seconds and shake off excess sample.
2. At 15 seconds after immersion, compare the reacted test strip area to color chart on bottle. Note: The reacted strip must be compared at least 15 seconds after immersion to a maximum of two minutes from time of immersion.

For Quality Control:

Each facility should determine its own quality control procedure. Testing and recording test strip results with the control solution (see below) or with SteriChek Residual Peroxide Control Tablets provides 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. (SteriChek Residual Peroxide Control Tablets are sold separately. Contact your distributor for more information.)

Preparation of the Control Solution:

Prepare a control solution by diluting concentrated peracetic acid with Reverse Osmosis water.

Dilution Guidelines:

| | |
|------------------|--|
| Stock Solution | Dilute 0.5 ml of peracetic acid with 500 ml of Reverse Osmosis water. This stock solution contains approximately 300 ppm (mg/l) peroxide, has a useful life of 14 days and must be refrigerated. |
| Control Solution | Dilute 1 ml of the Stock Solution with 100 ml of Reverse Osmosis water. Use this control solution within 16 hours. |

Measure the peroxide content of the control solution following the directions on the SteriChek product label. The assay value should fall within 1 to 3 ppm (mg/l).

Follow the procedure to prepare the stock solution with peracetic acid typically used in your facility. Determine where your test strip values fall when using the control solution based on the typical peracetic acid used in each facility. The assay value range of 1 to 3 ppm was obtained with concentrated peracetic acid solution that contained 27% hydrogen peroxide and 4.5% peroxyacetic acid.

STORAGE

The SteriChek Residual Peroxide 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 60° - 90°F (16° - 32°C). 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

Hydrogen peroxide concentration in rinse water is measured by comparing the color of the reagent strip pads with the label color blocks. The color block calibrations of hydrogen peroxide concentration are 0, 1, 3, 5 and 10 ppm (mg/l) in water generated from the rinsing of dialysis machines. Concentrations (color development) which fall between color block values should be estimated.

CHEMICAL PROPERTIES OF THE TEST

SteriChek Residual Peroxide Reagent Strips will form a red-purple color when reacted with peroxide. In the presence of peroxidase and hydrogen peroxide, 4-aminoantipyrine (4AAP) and 8-amino-2-naphthalene sulfonic acid (ANS) will react quickly. Peroxide reagent strips are buffered to pH 5.0 and include horseradish peroxidase, 4-aminoantipyrine and

8-amino-2-naphthalene sulfonic acid. The magnitude of the red-purple color of the oxidation product is directly related to the peroxide concentration in the dialysate rinse.

Peroxidase



PERFORMANCE CHARACTERISTICS

SteriChek Residual Peroxide Reagent Strips' performance characteristics are generated from sample studies where peroxide peracetic acid or hydrogen peroxide was added to provide a peroxide level range. Levels of peroxide were standardized using the spectrophotometric method.² The coefficient of variation of the reagent strips at 1, 3, 5, and 10 ppm (mg/l) was 2.90%, 11.18%, 17.07%, and 7.26% at one standard deviation (n=20) using 10 readers.

In 200 observations with 10 readers, positive readings were reported at all levels of 1 ppm or greater, and negative readings were observed when there was no presence of peroxide. The accuracy and level of sensitivity of SteriChek Residual Peroxide Reagent Strips is contingent on lighting, potential presence of interfering substances, and color perception variation.

LIMITATIONS

- Test strips may react with any substance that might directly oxidize 4-aminoantipyrine or 8-amino-2-naphthalene sulfonic acid. Strong oxidants should not be present in rinse water.
- Since Ascorbic Acid effectively reduces the concentration of peroxide in the sample, it may inhibit the reaction in concentrations as low as 3 ppm.

AVAILABILITY

Product Code 811905 SteriChek Residual Peroxide Reagent Test Strips includes five bottles of 100 reagent strips and a multilingual product manual. 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
- 811906 Peracetic Acid Reagent Strips
- 811911 Sensitive 5 ppm Low-Range Hardness 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. of US and imported content.

1. Renal Systems Manual.
2. Spectrophotometric Method - Journal of Biological Chemistry, Vol. 254, pgs. 4245-4252 (1979), Claiborne, A. et al.

REFERENCES

**HACH®
STERICHEK®
RESIDUAL PEROXIDE
REAGENT STRIPS**

811905

Hach Company
100 Dayton Ave. • Ames, IA 50010 U.S.A.
TOLL FREE: 888-ETS-STRIPS (1-888-387-7874)
TEL: 970-278-4951 • FAX: 970-619-5025
www.sterichек.com • etscustomerservice@hach.com

