

PRODUCT PROFILE

Serim[®] GUARDIAN[™] RESIDUAL CHLORINE TEST STRIPS

WHAT does this product do?

Serim[®] GUARDIAN[™] Residual Chlorine Test Strips give a semi-quantitative indication that the chlorine bleach solution has been adequately rinsed from the hemodialysis machine, bicarb jugs, bicarb mixing tanks or water delivery systems following disinfection.

WHY should I use this product?

If hemodialysis machines are disinfected with bleach, it is important to ensure that the disinfectant has been properly rinsed and any residual chlorine is below the concentration that may potentially cause adverse patient events, such as allergic reactions, hemolysis and death.^{1,2}

AAMI Hemodialysis Water Quality Guidelines set the maximum allowable concentration of free chlorine at 0.5 ppm, therefore the concentration of residual bleach must be below 0.5 ppm prior to initiating dialysis.^{1,2,3,4}

WHERE do I use this product?

Use Serim GUARDIAN Residual Chlorine Test Strips to test rinse solution from the drain line of the hemodialysis machine or appropriate sampling points of the bicarb mixing tanks or jugs and water systems.



WHEN do I use this product?

Use Serim GUARDIAN Residual Chlorine Test Strips after rinsing the bleach solution from the hemodialysis system and prior to initiating dialysis.

HOW do I use this product?

Serim GUARDIAN Residual Chlorine Test Strips are supplied in ready-to-use form. The strips can be used as a quick, qualitative screening test; detecting concentrations of bleach above or below the 0.5 ppm AAMI action level.

The strips can also be used as a semi-quantitative method to estimate chlorine concentrations between 0 and 5 ppm. When placed in contact with the sample according to the directions for use (see below), the indicator pad changes color relative to the concentration of chlorine.

Ordering Information

Serim GUARDIAN Residual Chlorine Test Strips:

- Product Code 5100A contains 6 bottles of 100 test strips
- Product Code 5100C contains 12 bottles of 25 test strips

Related Products:

Serim GUARDIAN Chlorine Control Pack (Product Code 5100QC) contains 1 bottle of 20 chlorine tablets plus 5 sample cups

Test Method	Qualitative (Stream)	Semi-quantitative (Immersion)
Sample	Preferably test the rinse solution at the drain.	Collect a sample of rinse solution from the drain.
Test Strip Technique	Hold the indicator pad in the rinse stream for 5 seconds.	Immerse the indicator pad into the sample of rinse solution and move the strip back and forth vigorously through the sample for 30 seconds.
Results	Any color indicates a residual chlorine concentration of 0.5 ppm and above.	Remove the strip from the sample and within 10 seconds compare the color of the indicator pad to the color blocks on the bottle label.

Store bottles of Serim GUARDIAN Residual Chlorine Test Strips at temperatures between 15°- 30°C (59°- 86°F).
The lot number and expiration date are printed on the bottom of each bottle.

PRODUCT PROFILE

SERIM GUARDIAN RESIDUAL CHLORINE TEST STRIPS

Features	Benefits
Reliably detects 0.5 ppm chlorine concentration in rinse water	<ul style="list-style-type: none"> Meets the AAMI-recommended level of less than 0.5 ppm chlorine in rinse water for dialysis machines and equipment disinfected with chlorine bleach or similar chlorine-based disinfectants Superior performance to traditional “off-label chlorine tests such as starch paper and HemaStix or other urine blood test strips which do not detect chlorine until the potentially harmful concentrations of 3 to 10 ppm are present⁵
Strip results not affected by common water constituents	<ul style="list-style-type: none"> Confidence that any positive result is due to chlorine or other oxidants
Labeled for dialysis use ⁶	<ul style="list-style-type: none"> No need to qualify an “off-label” test for dialysis use No need to monitor changes in product performance from lot-to-lot
Convenient packaging options	<ul style="list-style-type: none"> No waste of strips for units doing only 1-2 tests per day, or only disinfecting machines once per week Larger kits are economical for frequent testers
Consistent color reactions	<ul style="list-style-type: none"> Results not affected by aging throughout shelf life of the product
Simple procedure	<ul style="list-style-type: none"> Simple, quick and reliable method to meet the AAMI recommended level of 0.5 ppm or less No calculations or “drop counting” needed
Test strip can be immersed into sample or held in sample stream	<ul style="list-style-type: none"> Maximum convenience for user, no matter where a proper sample is most easily obtained
Quick results: <ul style="list-style-type: none"> Immediate qualitative results - any color indicates 0.5 ppm chlorine is present Semi-quantitative results in 30 seconds 	<ul style="list-style-type: none"> Simple, quick and reliable method to meet the AAMI recommended level less than 0.5 ppm
Simple to interpret color blocks	<ul style="list-style-type: none"> Accurate and consistent results minimize variation between readers Color of indicator pad is directly compared to color blocks on bottle label
Ready-to-use strips	<ul style="list-style-type: none"> No preparation or mixing of reagents No glass vials or sharps needed
Each bottle clearly labeled with: <ul style="list-style-type: none"> Lot number Expiration date 	<ul style="list-style-type: none"> Traceability of product from manufacturing to final user Leaves no doubt as to the age or integrity of the product

HemaStix® is a registered trademark of Bayer Healthcare LLC

References:

- Chloramines in Municipal Water: Considerations for Dialysis Facilities, Nephrology News & Issues, October 1997, pg 19-20
- Dialysis Therapy, 3rd Edition, pg. 76. Hanley & Belfus, Inc., Philadelphia.
- Proper Mechanisms for Assuring Disinfectant Concentrations for Use in Hemodialysis, Nephrology News & Issues, June 1999, pg 23.
- AAMI Standards and Recommended Practices, Dialysis, 2008 Edition, RD62 – *Water treatment equipment for hemodialysis applications*, Association for the Advancement of Medical Instrumentation. Arlington, Virginia.
- NANT Dialysis Technology – A Manual for Dialysis Technicians, 2nd Edition (2000), page 255. National Association of Nephrology Technicians/Technologists, Dayton, OH.
- Proper mechanisms for assuring disinfectant concentrations for use in hemodialysis*. Nephrol News Issues. 1999 Jun;13(6):18, 23, 27. Arduino MJ.

©2010 Serim Research Corporation



Certified to ISO 9001:2008 & ISO 13485:2003

P.O. Box 4002, Elkhart, IN 46514-0002

(574)264-3440 ☎ FAX (574)266-6222 ☎ www.serim.com