



RPC Chlorine & Chloramines Test Strips - Application Note

Introduction

Testing to determine levels of chloramines and/or free chlorine in water used for dialysis and the rinse water of dialysis machines is required by the Association for the Advancement of Medical Instrumentation (AAMI), water treatment system manufacturers and dialysis machine manufacturers. The AAMI/ANSI National Standard for Hemodialysis Systems (RD62 - 2006) lists the maximum allowable level for these contaminants. Water treatment system manufacturers' and dialysis machine manufacturers' instructions for use, typically list the procedures required prior to collecting a test sample and indicate where to collect the sample. The following convenient table indicates which RPC test strips should be used for the applications shown in the table. Old testing methods that are replaced by use of the RPC test strips are also shown in the table.

Application:	K100-0101B	K100-0106	K100-0118	Replaces:
Test for residual bleach in jug, loop, or machine rinse water.	X			Hach or LaMotte DPD Chlorine Tests and Serim 5100 Test Strips.
Test for free chlorine in dialysis water system (between carbons).	X	X		Hach or LaMotte DPD Chlorine Tests and Serim 5100 Test Strips.
Test for chloramines in dialysis water system (between carbons).		X	X	Hach or LaMotte DPD Chlorine Tests and Serim 5167 Test Strips.

Using the K100-0101B E-Z Chek® Residual Chlorine Test Strips

When using a K100-0101B test strip to test the rinse water of a bleach disinfected jug or water distribution loop, and/or a dialysis machine that has been bleach cleaned, continue rinsing until the residual level of chlorine shown on the strip color pad is below the level specified by the machine manufacturer, or below the AAMI free chlorine maximum of 0.5 ppm.

If the K100-0101B test strip is used to test the dialysis water system for free chlorine, the color pad should indicate a color that - when compared to the color chart on the bottle - is below 0.5 ppm. A separate test for chloramines (total chlorine test) should also be performed. Typically, the water sample is taken from a sample port located between the worker and polisher carbon tanks. **The K100-0101B test strips should not be used to test for chloramines...use the K100-0106 or K100-0118 test strips (see below for important information).**

Using the K100-0106 E-Z Chek® Sensitive and K100-0118 Ultra-Low Total Chlorine Test Strips

A water system sample should be tested for chloramines using a K100-0106 E-Z Chek® Sensitive Total Chlorine or K100-0118 Ultra-Low Total Chlorine test strip (both strip types are sensitive to less than 0.1 ppm - the AAMI maximum allowable level for chloramines). The color pad should indicate a color that - when compared to the color chart for the test strip in use - is below 0.1 ppm. Typically, the water sample is taken from a sample port located between the worker and polisher carbon tanks. Use of either the K100-0106 or K100-0118 test will (in one test) satisfy the requirement to test for both of the AAMI dialysis water system maximum contaminant levels of free chlorine (0.5 ppm) and chloramines (0.1 ppm). **Because the K100-0106 is not a quantitative test between the zero and 0.1 ppm levels, RPC recommends that - whenever testing with a K100-0106 test strip results in any color on the reagent pad - a K100-0118 test should be used as a back-up to determine the actual total chlorine concentration in the water under test. Use of the K100-0118 as a back-up is recommended whenever any primary test strip used has no color block below 0.1ppm (e.g. Serim 5167).**

Be sure to follow all instructions for use that come with the strip type you are using. Store at room temperature (away from heat). Check for the expiration date before using the strips. Use only non-expired strips.