

# Chlorine HR CHEMets® Kit

K-2520C/R-2500 & A-0171: 0 - 2000 ppm

## Sample Temperature

Sample temperatures that deviate significantly from 20°C (68°F) may introduce test result bias.

## Free Chlorine Procedure

1. Place a pipette tip firmly onto the end of the MiniPet® (fig. 1).

**NOTE:** Use a fresh pipette tip for each test.

2. Depress the plunger on the minipet. Immerse the tip in the sample to be tested and release the plunger. A portion of the sample will be drawn into the tip (fig. 2).

**NOTE:** Do not touch the side or bottom of the sample container with the tip during sampling.

3. Hold the minipet over the sample cup, and depress the plunger to dispense sample (fig. 3).

4. Dilute the contents of the sample cup to the **20 mL mark with distilled water** (fig. 4).

5. Place the CHEMets ampoule, tip first, into the sample cup. Snap the tip. The ampoule will fill leaving a bubble for mixing (fig. 5).

6. To mix the ampoule, invert it several times, allowing the bubble to travel from end to end.

7. Dry the ampoule. Obtain a test result **1 minute** after snapping the tip.

8. Obtain a test result by placing the ampoule between the color standards until the best color match is found (fig. 6).

**NOTE:** Use the 0 - 2000 ppm concentration scale on the comparator label.

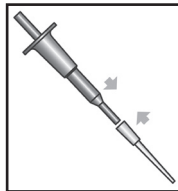


Figure 1

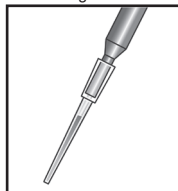


Figure 2

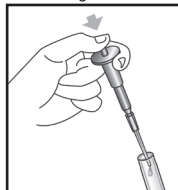


Figure 3

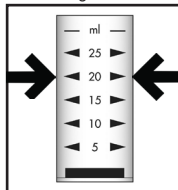


Figure 4

## Total Chlorine Procedure

1. Perform Steps # 1 - 4 of the **Free Chlorine Procedure**.
2. Add 4 drops of S-2500 Activator Solution. Stir briefly.
3. Immediately perform Steps # 5 - 8 of the **Free Chlorine Procedure** using this pretreated sample.

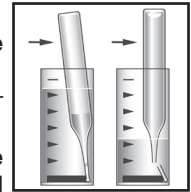


Figure 5

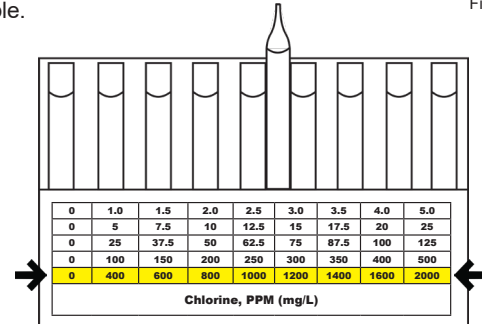


Figure 6

## Test Method

The Chlorine CHEMets®<sup>1</sup> test kits employ the DPD chemistry.<sup>2,3</sup> Free chlorine oxidizes DPD(N,N-diethyl-p-phenylenediamine) to form a pink colored species in direct proportion to the chlorine concentration. Total chlorine, the sum of free and combined chlorine, is determined by adding an excess of potassium iodide to the sample. Chloramines (combined chlorine) oxidize the iodide to iodine. The iodine then oxidizes DPD to the pink colored species.

Other halogens, ozone and halogenating agents will produce high test results. Chlorine at concentrations significantly above the test range may prevent proper color development, causing low test results.

1. CHEMets is a registered trademark of AquaPhoenix Scientific, LLC U.S. Patent No. 3,634,038
2. APHA Standard Methods, 23<sup>rd</sup> ed., Method 4500-Cl G - 2000
3. EPA Methods for Chemical Analysis of Water and Wastes, Method 330.5 (1983)
4. MiniPet is a registered trademark of Tricontinent Scientific, Inc.

## Safety Information

Read SDS before performing this test procedure. Wear safety glasses and protective gloves.