Silica CHEMets®
0 - 1 & 1 - 10 ppm

Test Procedure

1. Fill the sample cup to the 15 mL mark with the sample (fig 1).
2. Add 10 drops of A-9001 Activator Solution (fig 2). Cap the sample cup and shake it to mix the contents well. Wait **4 minutes**.
3. Add 5 drops of A-9000 Neutralizer Solution. Cap the sample cup and shake it to mix the contents well. Wait **1 minute**.
4. Place the CHEMet ampoule in the sample cup. Snap the tip by pressing the ampoule against the side of the cup. The ampoule will fill leaving a bubble to facilitate mixing (fig 3).
5. Mix the contents of the ampoule by inverting it several times, allowing the bubble to travel from end to end each time. Wipe all liquid from the exterior of the ampoule. Wait **2 minutes** for color development.
6. Use the appropriate comparator to determine the level of silica in the sample. If the color of the CHEMet ampoule is between two color standards, a concentration estimate can be made.
   a. Place the CHEMet ampoule, flat end downward into the center tube of the low range comparator. Direct the top of the comparator up toward a source of bright light while viewing from the bottom. Rotate the comparator until the color standard below the CHEMet ampoule shows the closest match (fig 4).

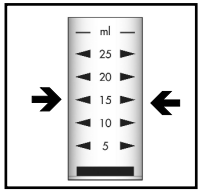

Figure 1

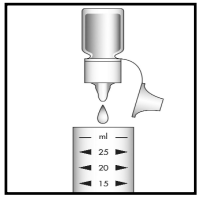

Figure 2

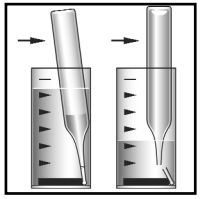
Figure 3


Figure 4

   b. Hold the high range comparator in a nearly horizontal position while standing directly beneath a bright source of light. Place the CHEMet ampoule between the color standards moving it from left to right along the comparator until the best color match is found (fig 5).

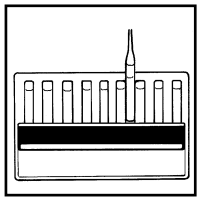
Figure 5

Test Method

The Silica CHEMets®[1] test method employs the heteropoly blue chemistry.[2,3,4] Silica reacts with ammonium molybdate at a pH of 1.2 to form molybdosilicic acid, which is then reduced by aminonaphtholsulfonic acid to form heteropoly blue. The resulting blue color is directly proportional to the silica concentration in the sample. Interferences from phosphate (up to 50 ppm) are masked by the addition of A-9000 Neutralizer Solution (citric acid). This method determines "molybdate reactive" silica. Results are expressed in ppm (mg/Liter) SiO_2.

1. CHEMets is a registered trademark of CHEMetrics, Inc. U.S. Patent No. 3,634,038
2. APHA Standard Methods, 20th ed., p. 4-158, method 4500-SiO_2 D (1998)
3. EPA Methods for Chemical Analysis of Water and Wastes, method 370.1 (1983)
4. ASTM D859-05, Silica in Water

Safety Information

Read MSDS before performing this test procedure. Wear safety glasses.

Reorder Information	**Cat. No.**
***Test Kit**, complete*	*K-9010*
***Refill**, 30 CHEMet ampoules*	*R-9010*
***Neutralizer Solution**, six 10 mL bottles*	*A-9000*
***Activator Solution**, six 20 mL bottles*	*A-9001*
***Sample Cup**, 25 mL, package of six*	*A-0013*
***Sample Cup Top**, package of six*	*A-0014*
***Comparator**, 0-1 ppm*	*C-9001*
***Comparator**, 1-10 ppm*	*C-9010*

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