

**SILICA TEST KIT**  
**Ranges 0-40 and 0-800 mg/L**  
**Model SI-5**  
**Cat. No. 14554**



**To ensure accurate results read carefully before proceeding.**

When citric acid reagent is used, up to 50 mg/L phosphate will cause no interference with the results of this test. However, higher concentrations of phosphate will result in the following negative errors: 60 mg/L - 2%, 75 mg/L - 11%. If larger amounts of phosphate are present, the sample should be diluted as instructed in the High Range Test Procedure to minimize phosphate interference.

**TEST PROCEDURE**

**MEDIUM RANGE (0-40 mg/L SiO<sub>2</sub>)**

1. Fill both sample tubes to the 5-mL mark with the water to be tested.
2. Use the clippers to open one Molybdate Reagent Powder Pillow and one Acid Reagent Powder Pillow. Add the contents of both pillows to one of the tubes. Swirl to dissolve.
3. Allow the sample to stand for 10 minutes to allow color development. If silica or phosphate is present in the sample a yellow color will develop.
4. Use the clippers to open one Citric Acid Powder Pillow. Add the contents of the pillow to the same sample tube. Swirl to mix, and allow the solution to stand for two minutes. The citric acid will destroy the yellow color due to phosphate.
5. Use the clippers to open one Silica 3 Reagent Powder Pillow. Add the contents of this pillow to the same tube, and swirl to mix.
6. Allow five minutes for color development. If silica is present, a blue color will develop.
7. Insert the tube of prepared sample into the right top opening of the color comparator (Prepared Sample Position in Figure 1).
8. Insert the tube of untreated water into the left top opening of the color comparator. (Untreated Sample Position in Figure 1).
9. Hold the comparator up to a light source such as the sky, a window or lamp and view through the two openings in the front. Rotate the disc to obtain a color match. Read the mg/L silica (SiO<sub>2</sub>) through the scale window.

***WARNING: The chemicals in this kit may be hazardous to the health and safety of the user if inappropriately handled. Please read all warnings before performing the test and use appropriate safety equipment.***

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**MEMBRANES INC.®**

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### HIGH RANGE (0-800 mg/L SiO<sub>2</sub>)

1. Fill the dropper to the 1-mL mark with the water to be tested. (1 cc = 1 mL). Transfer the contents of the dropper to the square mixing bottle.
2. Fill the mixing bottle to the 20-mL mark with Demineralized Water. Swirl to mix *as shown in Figure 2*.
3. Using this diluted water sample, fill both sample tubes to the 5-mL mark.
4. Use the clippers to open one Molybdate Reagent Powder Pillow and one Acid Reagent Powder Pillow. Add the contents of both pillows to one of the tubes. Swirl to dissolve.
5. Allow the sample to stand for 10 minutes to allow color development. If silica or phosphate is present in the sample a yellow color will develop.
6. Use the clippers to open one Citric Acid Powder Pillow. Add the contents of the pillow to the same sample tube. Swirl to mix, and allow the solution to stand for two minutes. The citric acid will destroy the yellow color due to phosphate.
7. Use the clippers to open one Silica 3 Reagent Powder Pillow. Add the contents of this pillow to the same tube, and swirl to mix.
8. Allow five minutes for color development. If silica is present, a blue color will develop.
9. Insert the tube of prepared sample into the right top opening of the color comparator (Prepared Sample Position in Figure 1).
10. Insert the tube of untreated water into the left top opening of the color comparator (Untreated Sample Position in Figure 1).
11. Hold the comparator up to a light source such as the sky, a window or lamp and view through the two openings in the front. Rotate the disc to obtain a color match.
12. To obtain the mg/L silica, multiply by 20 the reading obtained in Step 11.

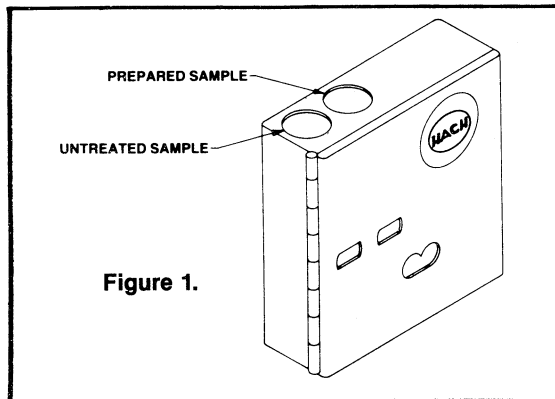


Figure 1.

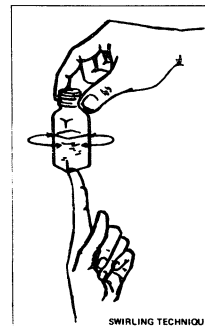


Figure 2.

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## REPLACEMENTS

Cat. No.	Description	Unit
14545-99	Acid Reagent Powder Pillows .....	pk/100
14549-99	Citric Acid Powder Pillows .....	pk/100
272-28	Demineralized Water .....	118 mL (4 oz)
14546-99	Molybdate Reagent Powder Pillows .....	pk/100
271-69	Silica 3 Reagent Powder Pillows .....	pk/100
2327-06	Bottle, mixing .....	pk/6
968-00	Clippers .....	each
1732-00	Color Comparator .....	each
1741-00	Color Disc, Silica 0-40 mg/L SiO <sub>2</sub> .....	each
1730-00	Color Viewing Tube .....	each
14197-00	Dropper with 0.5- and 1-mL marks .....	each
1731-00	Stopper for color viewing tube .....	each
1403-11	Silica Standard Solution 10 mg/L as SiO <sub>2</sub> (not included in kit) .....	473 mL (pt)

It is suggested reagent accuracy be checked periodically using a reliable standard such as Silica Standard Solution 10 mg/L as SiO<sub>2</sub>, Cat. No. 1403-11. This standard solution is not included in this kit but may be ordered from Hach Company. *See Replacements.* To check the accuracy of the reagents follow regular instructions for the Medium Range Test using the standard solution instead of a water sample.

MADE IN U.S.A.

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