SILICA–HIGH RANGE

SILICOMOLYBDATE METHOD • CODE 3687-SC

QUANTITY	CONTENTS	CODE
30 mL	*Silica Reagent #1	*V-4466-G
30 mL	*Silica Reagent #2	*V-4467-G
15 mL	*Silica Reagent #3	*V-4468-G

*WARNING: Reagents marked with an * are considered hazardous substances. To view or print a Material Safety Data Sheet (MSDS) for these reagents see MSDS CD or our web site. To obtain a printed copy, contact us by e-mail, phone or fax.

Silicon dioxide, SiO_2, commonly known as silica, occurs in all natural water. Silica may be present as suspended, insoluble particles in a colloidal or polymeric state. It may also be present in a reactive form as silicic acid or silicate ions. Silica is a major nutrient for diatoms. A silica cycle occurs in many bodies of water containing organisms, such as diatoms, that use silica in their skeletal structure. The silica removed from the water may be slowly returned to solution by the decomposition of the dead organisms. The major source of silica in natural water is from the decomposition of silicate minerals in the drainage basin from which the waters flow.

The presence of silica is particularly objectionable in water used for boiler feed water purposes, as it may cause the formation of a hard, dense scale which has unusually high resistance to heat transfer. Serious loss of turbine efficiency results from insoluble silica turbine blade deposits caused by vaporization of silica from boiler water.

APPLICATION: Boilers and cooling towers; domestic and industrial wastes.

RANGE: 0–75 ppm Silica

METHOD: Silica forms a complex with ammonium molybdate in an acidic solution to produce a yellow color in proportion to the amount of silica present. Phosphate also reacts with molybdate but the addition of oxalic acid eliminates the molybdophosphoric acid complex.

SAMPLE HANDLING & PRESERVATION: Silica samples may be preserved by refrigeration at 4°C in plastic containers up to one week without any change in silica concentration.

INTERFERENCES: Sulfides and large amounts of iron interfere. Color and turbidity may be removed by standardizing the instrument with the original water sample.

PROCEDURE

1. Press and hold **ON** button until colorimeter turns on.
2. Press **ENTER** to start.
3. Press **ENTER** to select `TESTING MENU`.
4. Select `ALL TESTS` (or another sequence containing `86 Silica Hi`) from `TESTING MENU`.
5. Scroll to and select `86 Silica Hi` from menu.
6. Rinse a clean tube (0290) with sample water. Fill to the 10 mL line with sample.
7. Insert tube into chamber, close lid and select `SCAN BLANK`.
8. Remove tube from colorimeter. Add 6 drops *Silica Reagent #1 (V-4466). Cap and invert to mix.
9. Add 12 drops of *Silica Reagent #2 (V-4467). Cap and mix. Wait 5 minutes.
10. At end of 5 minute waiting period, add 8 drops of *Silica Reagent #3 (V-4468). Cap and mix.
11. Insert tube into chamber, close lid and select `SCAN SAMPLE`. Record result.
12. Press **OFF** button to turn colorimeter off or press **EXIT** button to exit to a previous menu or make another menu selection.

☑ NOTE: To extend the range to 100 ppm, perform a 2:1 dilution of water sample, with silica-free water. Perform test and multiply result by 2.