

# SILICA HIGH RANGE TEST KIT



Range:.....0-40 ppm and 0-800 ppm SiO<sub>2</sub>  
Methodology:.....Color Comparator  
PCN:.....1941013

## DESCRIPTION

Silica in the water sample is simply measured using a comparator and color disc. Accuracy in the ranges of 0-40 ppm and 0-800 ppm SiO<sub>2</sub> can be obtained by varying the sample size. The test employs both acid and molybdate reagents which react with silica and phosphate to create a yellow color. Citric acid is added to destroy the yellow color formed due to phosphate. Silica 3 Reagent, when added to the sample water, converts the yellow color to a dark blue for easier viewing.

## REPLACEMENT REAGENTS AND APPARATUS

### Reagents Description

Molybdate Reagent (5 ml) Foil Packs, (100)  
Acid Reagent (5 ml) Foil Packs, (100)  
Citric Acid (5 ml) Foil Packs, (100)  
Silica 3 Reagent Foil Packs, (100)  
Demineralized Water, (4 oz)  
Apparatus:

### Description

Mixing Bottle (10,15,20,23 ml), (6/pk)  
Color Comparator  
Color Disc, Silica 0-40 ppm SiO<sub>2</sub>  
Color Viewing Tube, 5 ml, (6/pk)  
Stopper for Color Viewing Tube, (6/pk)  
Dropper, Glass (0.5, 1.0 ml)

## INSTRUCTIONS FOR USE:

### A. Medium Range: (0-40 ppm SiO<sub>2</sub>)

1. Fill both sample tubes to the 5 ml mark with the water to be tested.
2. To one of the tubes add the contents of one Molybdate Reagent (5 ml) Foil Pack and one Acid Reagent (5 ml) foil pack. Swirl to dissolve.
3. Allow the sample to stand for ten minutes. If silica or phosphate is present, a yellow color will develop.
4. Add the contents of one Citric Acid (5 ml) Foil Pack to the sample tube. Swirl to mix.

5. Allow the solution to stand for two minutes. The citric acid will destroy any yellow color due to phosphate.
6. Add the contents of one Silica 3 Reagent Foil Pack to the sample tube. Swirl to mix.
7. Allow the solution to stand for five minutes. If silica is present, a blue color will develop.
8. Place the sample tube containing the prepared sample into the right top opening of the color comparator.
9. Place the untreated sample tube blank into the left top opening of the color comparator.
10. Hold the comparator up to a light source and view through the two openings in the front. Rotate the disc to obtain a color match. Read the ppm Silica (SiO<sub>2</sub>) through the scale window.

### B. High Range: (0-800 ppm SiO<sub>2</sub>)

1. Fill the dropper to the 1 ml mark with the water to be tested and transfer to the square mixing bottle.
2. Fill the mixing bottle to the 20 ml mark with demineralized water. Swirl to mix.
3. Using this diluted water sample, fill both sample tubes to the 5 ml mark.
4. Follow Steps 2 through 10 of the Medium Range Test.
5. To obtain the ppm Silica, multiply the reading obtained in step 10 by 20.

**Notes:** There is no interference from phosphate below 50 ppm. At 60 ppm, an interference of minus 2 percent is observed. At 75 ppm, the interference is minus 1 percent. If large amounts of phosphate are present, the sample should be diluted to minimize the interferant.

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