

REF 91848

en

Test 1-48

08.17

**NANOCOLOR® Silica (silicic acid)****Method:**

Photometric determination as silico-molybdenum blue

|                                 |                |           |           |
|---------------------------------|----------------|-----------|-----------|
| Cuvette rectangular:            | 50 mm          | 20 mm     | 10 mm     |
| Range (mg/L SiO <sub>2</sub> ): | 0.02–3.00      | 0.1–8.0   | 0.1–10.0  |
| Range (mg/L Si):                | 0.01–1.40      | 0.03–2.50 | 0.05–5.00 |
| Wavelength (HW = 5–12 nm):      | 690 nm         |           |           |
| Reaction time:                  | 15 min (900 s) |           |           |
| Reaction temperature:           | 20–25 °C       |           |           |
| Cuvette rectangular:            | 50 mm          |           |           |
| Range (mg/L SiO <sub>2</sub> ): | 0.005–0.200    |           |           |
| Range (mg/L Si):                | 0.002–0.100    |           |           |
| Wavelength (HW = 5–12 nm):      | 800 nm         |           |           |
| Reaction time:                  | 15 min (900 s) |           |           |
| Reaction temperature:           | 20–25 °C       |           |           |

**Contents of reagent set:**

100 mL Silica R1  
100 mL Silica R2  
100 mL Silica R3

**Hazard warning:**

Reagent R1 contains sulfuric acid 5–15 %, reagent R2 contains sodium disulfite 10–25 %.

H318 Causes serious eye damage.

P280sh, P305+351+338, P310 Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. For further information ask for a safety data sheet.

**Interferences:**The following quantities of ions will not interfere: < 10 mg/L Fe, Al; < 30 mg/L PO<sub>4</sub><sup>3-</sup>; < 100 mg/L Ca.

Please make certain, that the distilled water which is used for filling up or dilution, is free of silica (REF 918912).

The method can be applied also for the analysis of sea water.

**Note:**

Please contact MACHEREY-NAGEL for special working instructions concerning a simplified procedure in a beaker (without filling up) and evaluation in 50 mm cuvette.

**Procedure:**

We recommend to use all analytical accessories made from plastic.

Requisite accessories: volumetric flasks 25 mL, piston pipette with tips, silica-free water (REF 918912)

Pour into two separate volumetric flasks:

| Test sample   | Blank value   |
|---|---|
| 20 mL test sample (the pH value of the sample must be between pH 6 and 8) | 20 mL test sample (the pH value of the sample must be between pH 6 and 8) |
| 1 mL R1, mix, wait 3 min  | –   |
| 1 mL R2, mix, wait 1 min  | –   |
| 1 mL R3   | –   |

For exact measurements in the low range, it is recommendable using a real blank value:

| Test sample (< 0.2 mg/L SiO <sub>2</sub> )                                | Blank value              |
|---|--------------------------|
| 20 mL test sample (the pH value of the sample must be between pH 6 and 8) | 20 mL silica-free water  |
| 1 mL R1, mix, wait 3 min  | 1 mL R1, mix, wait 3 min |
| 1 mL R2, mix, wait 1 min  | 1 mL R2, mix, wait 1 min |
| 1 mL R3   | 1 mL R3                  |

Fill up sample and blank value to 25 mL mark with silica-free water and mix again. After 15 min pour into cuvettes and measure.

**Measurement:**

For NANOCOLOR® photometers see manual, test 1-48.

**Measurement when samples are coloured or turbid:**

For all NANOCOLOR® photometers see manual, use key for correction value.

**Photometers of other manufacturers:**

Verify factor for each type of instrument by measuring standard solutions.

**Decreasing volume of analytical preparation:**

In order to increase the number of determinations, you can work with volumetric flasks of 10 mL: 8 mL test sample + 0.4 mL R1 + 0.4 mL R2 + 0.4 mL R3, semi-micro cuvette (REF 91950).

**Disposal:**

The contents of cuvettes and flasks can be washed into drain with plenty of water.