

Overview

The test is suitable for the photometric determination of tin.

The test is suitable for water as well as surface water, groundwater and drinking water.

- Measuring range: 0.10–3.00 mg/L Sn (method 0971)
- Number of tests: 18
- Wavelength for photometric determination: 520/540 nm
- Shelf life: 12 months
- Reaction time: 20 minutes
- Storage temperature: 15–25 °C
- Storage conditions: protected from sunlight, upright.

Method

Photometric determination of dissolved tin(II) and tin(IV) with 9-phenyl-3-fluorone.

Interferences

The following contaminants do not interfere with the test up to the indicated concentrations. The cumulative effect of different interfering ions has not been tested.

Data in mg/L:

- Cr(VI), Mo(VI): 1
- Pb²⁺, Fe³⁺, Co²⁺, Cu²⁺, Cd²⁺: 5
- Ca²⁺, Mg²⁺, Zn²⁺, As: 10
- NO₂⁻: 20
- Cr³⁺, Ni²⁺, Mn²⁺, PO₄³⁻: 50
- Al³⁺, NO₃⁻: 100
- Cl⁻: 250
- NH₄⁺, SO₄²⁻: 1000

The method is suitable for the analysis of seawater after 1 + 9 dilution.

Turbidities cause higher measurement values.

Reagents and accessories

- 18 test tubes R0
- 1 reagent R2
- 1 reagent R3
- 2 reagent R4
- 1 measuring spoon, black, 70 mm

Required devices:

- MACHEREY-NAGEL photometer
- Digital piston pipette 1–5 mL (REF 916909) with pipette tips (REF 916916)
- Digital piston pipette 100–1000 µL (REF 91677) with pipette tips (REF 91667)

Sampling and preparation

See DIN EN ISO 5667-3-A21.

Adjust to pH 1–7 prior to analysis.

Quality control

The measurement of a blank value and a standard is recommended before every measuring series as quality control measure.

Quality data:

The following data were determined during production according to ISO 8466-1 and DIN 38402-A51:

- Number of LOTS: 21
- Standard deviation of the method: ± 0.05 mg/L Sn
- Coefficient of variation of the process: ± 3.66 %
- Confidence interval: ± 0.15 mg/L Sn

Specified data for procedure:

- Sensitivity (absorbance of 0.010 A corresponds to): 0.02 mg/L Sn
- Accuracy of a measurement value: ± 0.06 mg/L Sn

LOT-specific certificates are available at www.mn-net.com.

Procedure

1. Open test tube. Pipette 4 mL of sample into test tube
2. Add 1 level measuring spoon of reagent R2
3. Add 500 µL R3
4. Seal test tube and shake vigorously
5. Open test tube again. Add 1 mL R4
6. Seal test tube and shake vigorously
7. Wait 20 min
8. Clean outside of test tube
9. Measure

Notes

When using other photometers, make sure measurements are possible in test tubes (16 mm OD) and calibrate the method.

Test a sample of distilled water (REF 918932) to generate a blank value for the reagent.

Use the correction value when measuring cloudy or colored samples (see photometer handbook).

Information regarding safety can be found on the box' label and in the safety data sheet. You can download the SDS from www.mn-net.com/SDS.

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