

Overview

The test is suitable for the photometric determination of TOC.
The test is suitable for water, wastewater and production water.
Measuring range: 20–300 mg/L TOC (method 0781)

- Number of tests: 20
- Wavelength for photometric determination: 436 nm
- Shelf life: 12 months
- Reaction time: 60 minutes
- Storage temperature: 2–8 °C
- Storage conditions: protected from sunlight, upright.

Method

TOC determination is carried out in two steps:

1. Removal of all inorganic carbon (TIC)
2. Digestion of total organic carbon (TOC) and detection of the resulting carbon dioxide by means of an indicator. Analogous to DIN EN 1484.

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:

- TIC: 5000
- Cl: 7500

This method is not suitable for analyzing seawater.

Turbidities cause higher measurement values.

Reagents and accessories

Contents of reagents set:

- 20 test tubes R1
- 20 test tubes R2
- 20 test tubes R3
- 1 tube with blanc solution
- 20 plastic tips for TIC-Ex
- 20 threaded couplings
- 20 venting needles
- 21 adhesive labels Ø 9 mm
- 40 adhesive labels 10 × 38 mm

Required devices:

- MACHEREY-NAGEL photometer
- MACHEREY-NAGEL heating block
- Protective covering with bores (REF 919309)
- NANOCOLOR® TIC-Ex (REF 916993)
- Digital piston pipette 1–5 mL (REF 916909) with pipette tips (REF 916916)

Standards

- NANOCONTROL TOC 300 (REF 92578)

Sampling and preparation

See DIN EN ISO 5667-3-A21.

Adjust to pH 1–12 prior to analysis.

Quality control

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

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

Procedure

1. Open test tube 1. Pipette 0.5 mL of sample into test tube
2. Insert open cuvette in the TIC-Ex and remove TIC for 5 min (after removal blow out the fluid residues in the tips by briefly actuating the TIC-Ex)
3. Seal test tube and shake vigorously
4. Open test tube 2. Pipette 4 mL of solution 1 into test tube
5. Seal test tube and shake for 10 s
6. Open cuvette 3 and immediately close it with the threaded coupling (note marking on coupling)
7. Immediately screw cuvette 2 hand-tight with cuvette 3 (hold cuvette combination vertically)
8. Pierce 1 venting needle through the rubber septum
9. Insert cuvette combination into the heating block (blue indicator solution on top). Heat for 1 h at 100 °C
10. Remove cuvette combination from the heating block and immediately pull out the venting needle
11. Cool to room temperature for 1 h
12. Seal the rubber septum with a round label
13. Measure blank value
14. Clean outside of test tube 3
15. Invert the cuvette combination
16. Measure

Disposal

Information regarding disposal can be found in the safety data sheet. You can download the SDS from www.mn-net.com/SDS.

Notes

To increase the accuracy, it is recommended to perform the measurement with reagent blank value. For the blank value, use COD-free water (REF 918993) as sample.

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

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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