

REF 985 099

en

# Test 0-99 02.12

## NANOCOLOR® TOC 600

Total organic carbon

**Method:**

The determination of TOC is carried out in two steps:

1. Disposing of the inorganic carbon (TIC)
2. Decomposition of the organic carbon (TOC) and detection of the carbon dioxide formed by means of an indicator

Range:	40–600 mg/L C
Factor:	0410. (-)
Wavelength (HW = 5–12 nm):	585 nm
Decomposition time:	2 h
Decomposition temperature:	120 °C

**Content of reagent set:**

10 dilution test tubes V	1 test tube with blank value „NULL“
10 test tubes TOC 600	2 thermo caps
1 test tube with 6 mL TOC R0	10 round stickers
1 brown glass bottle with 1 g TOC R2	
1 measuring spoon 70 mm	

**Hazard warning:**

Reagent TOC R0 and reagent TOC R2 contain hazards which are not labelled with &lt;Xi&gt; or &lt;Xn&gt; (certificate of exemption for small quantities), see safety data sheet.

**Interferences:**The following quantities will not interfere:  $\leq 10000 \text{ mg/L Cl}^-$ ;  $\leq 5000 \text{ mg/L TIC}$ 

This method can not be applied for the analysis of sea water.

**Procedure:**

Requisite accessories: piston pipettes with tips, glass beaker 100 mL, magnetic stirring unit, mini-magnet, NANOCOLOR® heating block

Recommended accessories for disposing of TIC:

NANOCOLOR® accessory set for the determination of TOC (small), content:

1 magnetic stirrer (1 stir position), 2 beakers 100 mL, 2 magnetic stir bars 35 mm (REF 916 990)

NANOCOLOR® accessory set for the determination of TOC (big), content:

1 magnetic stirrer (15 stir positions), 6 beakers 100 mL, 6 magnetic stir bars 35 mm (REF 916 991)

NANOCOLOR® beaker 100 mL with magnetic stir bar 35 mm, pack of 2 (REF 916 992)

**1. Disposing of inorganic carbon (TIC)**Open **dilution test tube V**, add**1.0 mL** test sample (*the pH value of the sample must be between pH 1 and 12*), close and mix.

Fill contents of the dilution test tube into a glass beaker 100 mL with a mini-magnet, add

**0.5 mL** R0 and stir for **10 min** at maximum speed.**2. Decomposition**

2 h / 120 °C

Open **TOC test tube**, add**4.0 mL** of the solution from step 1 and**1 measuring spoon** R2, close with **thermo cap** and mix.Place test tube **standing on its head** (*thermo cap at the bottom*) into the heating block with the blue indicator solution on top.

Set heating block to 120 °C and 2 h and press start.

After 2 h remove test tube from the heating block and leave the tube **standing on its head to cool down for 60 min** (*do not cool with cold water!*).

After 60 min turn test tube upside down, clean outside of tube and measure the colored solution in the photometer.

**Measurement:**

For NANOCOLOR® photometers and PF-11 / PF-12 see manual, test 0-99.

If the method is not programmed in your photometer, proceed as follows:

NANOCOLOR® photometer: Program test 0-99 yourself (see data table on the left) or call up factor method.

PF-10/PF-11: Call up extinction method, adjust filter wheel to **5** and measure. Multiply read-off value by **-590** to get mg/L C.**Note:**

NANOCOLOR® thermo caps for TOC decomposition are reusable. After measurement replace the thermo cap by the black screw cap. Clean thermo cap with distilled water, dry and use for further determinations.

**Photometers of other manufacturers:**

For other photometers check whether measurement of round glass tubes is possible. Verify factor for each type of instrument by measuring standard solutions.

**Analytical quality control:**NANOCONTROL COD 1500 (REF 925 29):  $160 \pm 20 \text{ mg/L C}$