

REF 985 059

en

Test 0-59

02.14

**NANOCOLOR® total Chromium 2****Method:**

Oxidative decomposition in the heating block and photometric determination with diphenylcarbazide

	test tube	50 mm semi-micro cuvette
Range:	<b>0.05–2.00 mg/L Cr</b>	<b>0.005–0.500 mg/L Cr</b>
Factor:	<b>00.94</b>	<b>0.251</b>
Wavelength (HW = 5–12 nm):	<b>540 nm</b>	
Decomposition:	<b>30 min at 120 °C / 60 min at 100 °C</b>	
Reaction time:	<b>5 min (300 s) at 20–25 °C</b>	

**Contents of reagent set:****Box A:** 20 empty test tubes

- 1 bottle with 5 g total Chromium 2 R1
- 1 measuring spoon 85 mm, orange

**Box B:** 20 test tubes total Chromium 2

*The contents of the 20 test tubes total Chromium 2 can be rose-colored. But there is no influence for the determination.*

**Hazard warning:**

Reagent R1 contains sodium peroxodisulfate 20–100 %.

H317, H334 May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P261, P272, P280, P302+352, P304+340, P333+313, P342+311, P362 Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves / eye protection. IF ON SKIN: Wash with plenty of soap and water. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If skin irritation or rash occurs: Get medical advice/attention. If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician. Take off contaminated clothing. For further information ask for a safety data sheet.

**Interferences:**The following ions will not interfere: < 1000 mg/L Cl<sup>-</sup>.

The method cannot be applied for the analysis of sea water.

**Note:**

*The pH value of the sample to be decomposed must be between pH 1 and 10, if necessary adjust with sodium hydroxide solution or sulfuric acid. Dilute the sample until the measured value is within the measuring range. For waters of unknown concentrations we recommend that you perform the test with very different dilutions (1+9, 1+99) until the last dilution confirms the previous value. For samples which consume large amounts of oxidizing substances (e.g. for COD values above 1000 mg/L O<sub>2</sub>), decomposition can be incomplete. In such cases repeat the decomposition with a diluted sample solution.*

**Procedure:**

Requisite accessories: NANOCOLOR® heating block, piston pipette with tips

**A) Decomposition (Box A)**Open **empty test tube**, add**5.0 mL** test sample (*the pH value of the sample must be between pH 1 and 10*) and**1 level orange spoon R1**, close and shake vigorously.

Place test tube into the heating block and heat at 120 °C for 30 min or at 100 °C for 1 h.

Remove tube from heating block, shake gently and leave it to cool.

**The decomposition solution must be clear and colorless.** Otherwise another decomposition is necessary. Open the test tube and test the decomposition solution for peroxides using QUANTOFIX® Peroxide 25 test sticks (REF 913 19). If peroxides are present, close tube and heat again without further addition of reagent.

→ decomposed solution

**B) Analysis (Box B)**Open **total Chromium test tube**, add**4.0 mL** decomposed solution, close and mix.

Clean outside of test tube and measure after 5 min.

Lower chromium concentrations (0.005–0.500 mg/L Cr) can be determined by using 50 mm semi-micro cuvettes (REF 919 50):

Sample	Blank value
Open <b>total Chromium test tube</b> , add <b>4.0 mL</b> decomposed solution, close and mix.	Open <b>total Chromium test tube</b> , add <b>4.0 mL</b> distilled water, close and mix.

Pour the contents of test tubes into 50 mm semi-micro cuvettes and measure after 5 min [method 1591].

For exact measurements in the low range, the determination should be performed against a decomposed blank solution (use distilled water instead of the sample).

**Measurement:**

For NANOCOLOR® photometers and PF-12 see manual, test 0-59.

**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 Multistandard Metals 1 (REF 925 015)