

REF 918 25

Test 1-25

01.15

NANOCOLOR® Chromate

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Method:

Photometric determination with diphenylcarbazide

Cuvette rectangular:	50 mm	20 mm	10 mm
Range (mg/L CrO ₄ ²⁻):	0.01–1.00	0.05–4.00	0.1–6.0
Factor:	00.71	01.76	003.4
Range (mg/L Cr(VI)):	0.01–0.45	0.03–2.00	0.1–3.0
Factor:	00.32	00.78	001.5
Wavelength (HW = 5–12 nm):	540 nm		
Reaction time:	5 min (300 s)		
Reaction temperature:	20–25 °C		

Contents of reagent set:

18 g Chromate R1
2 x 100 mL Chromate R2
1 measuring spoon 85 mm

Hazard warning:

Reagent R2 contains o-phosphoric acid 10–25 %.
For further information ask for a safety data sheet.

Interferences:

Chromium(III) ions are not determined. The amount of total chromium can be determined with NANOCOLOR® NanOx Metal (REF 918 978) or with NANOCOLOR® total Chromium (REF 918 253).

The following ions will not interfere:

≤ 1000 mg/L Ca, Mn(II), Ni, Zn, CN⁻; ≤ 100 mg/L Cu, Fe, Pb; ≤ 10 mg/L NO₂⁻.

Colorations, turbidities, higher amounts of organic substances, oxidizing and reducing agents interfere with the determination.

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

Note:

For the determination of chromate in galvanic bathes or water-soluble chromium(VI) in cement contact MACHEREY-NAGEL for special working instructions.

Procedure:

Requisite accessories: volumetric flasks 25 mL, piston pipette with tips

Pour into two separate volumetric flasks:

Test sample	Blank value
1 level spoon Chromate R1	–
2 mL Chromate R2	–
shake vigorously for 1 min	
20 mL test sample (<i>the pH value of the sample must be between pH 1 and 9</i>), mix	20 mL test sample (<i>the pH value of the sample must be between pH 1 and 9</i>)

Fill up sample and blank value to 25 mL mark with distilled water and mix again. After 5 min pour into cuvettes and measure.

Measurement:

For NANOCOLOR® photometers see manual, test 1-25.

Measurement when samples are colored 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.

Analytical quality control:

NANOCONTROL Chromate (REF 925 24) or Multistandard Metals 1 (REF 925 015) for total chromium

Decreasing volume of analytical preparation:

In order to increase the number of determinations, you can work with volumetric flasks of 10 mL: ½ level spoon R1 + 0.8 mL R2 + 8 mL test sample, semimicro cuvette (REF 919 50).

Disposal:

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