

REF 985 096

Test 0-96 04.17
NANOCOLOR® Zinc 4

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Method:

Photometric determination with zincon

Range:	0.10–4.00 mg/L Zn²⁺
Wavelength (HW = 5–12 nm):	620 nm
Reaction time:	1 min (60 s)
Reaction temperature:	20–25 °C

Contents of reagent set:

- 20 test tubes Zinc 4
- 1 test tube with 5 mL Zinc 4 R2
- 1 bottle with 3 g Zinc 4 R3
- 1 measuring spoon 85 mm

Hazard warning:

Test tubes contain 20 x 40 mg sodium tetraborate 30–60 % and potassium cyanide 7–15 %, reagent R2 contains chloral hydrate 20–100 %, reagent R3 contains hydrogen peroxide urea 20–80 %.

H300, H310, H318, H330, H360 Fatal if swallowed. Fatal in contact with skin. Causes serious eye damage. Fatal if inhaled. May damage fertility. May damage the unborn child.

P201, P260, P280, P301+310, P302+352, P305+351+338, P405 Obtain special instructions before use. Do not breathe dust/vapors. Wear protective gloves/eye protection. IF SWALLOWED: Immediately call a POISON CENTER/ doctor/... IF ON SKIN: Wash with plenty of water/... IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Store locked up. For further information ask for a safety data sheet.

Interferences:

With acidic, basic and buffered solutions check pH after addition of the test sample (nominal pH 8.5 to 9.5) and if necessary adjust pH to 9. If turbidity occurs after addition of the sample, use this measuring solution – **before** addition of R2 – for zero adjustment. Then add reagent R2 and perform zinc determination. If turbidity occurs very strongly, the precipitate has to be removed by membrane filtration (REF 916 50).

The following quantities of ions do not interfere:

< 5000 mg/L Ca²⁺; < 1000 mg/L SO₄²⁻; < 500 mg/L Cr(VI);
< 250 mg/L Mg²⁺; < 50 mg/L PO₄³⁻; < 10 mg/L Al³⁺, Ni²⁺;
< 5 mg/L Cr(III), Cu²⁺, Fe³⁺; < 0,5 mg/L Cd²⁺; < 0,1 mg/L Mn

For higher manganese concentrations contact MACHEREY-NAGEL for special working instructions. Refer to **NANOCOLOR® NanOx Metal** (REF 918 978) or Crack Set (REF 918 08) for sample pretreatment. Generally, the determination should be performed against a decomposed blank solution.

The method can be applied also for the analysis of sea water after dilution (1+1).

Procedure:

Requisite accessories: piston pipette with tips

Open test tube, add
4.0 mL test sample (*the pH value of the sample must be between pH 3 and 10*) and dissolve reagents completely. Add
200 µL (= 0.2 mL) R2, close and mix.
Clean outside of test tube and measure after 1 min.

Measurement:

For MACHEREY-NAGEL photometers see manual, test 0-96.

Measurement when samples are colored or turbid:

For all **NANOCOLOR®** photometers see manual, use key for correction value.

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:

NANOCNTROL Multistandard Metals 1 (REF 925 015)

Disposal:

After measurement, add 1 spoon of Zinc 4 R3 to each test tube for detoxification.

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