

REF 91860

en

Test 1-60

04.18

NANOCOLOR® Manganese**Method:**

Photometric determination of total manganese with formaldoxime

Cuvette rectangular:	50 mm	10 mm
Range (mg/L Mn):	0.01–2.00	0.1–10.0
Wavelength (HW = 5–12 nm):	470 nm	
Reaction time:	5 min (300 s)	
Reaction temperature:	20–25 °C	

Contents of reagent set:

100 mL Manganese R1

100 mL Manganese R2

100 mL Manganese R3

Hazard warning:

Reagent R1 contains paraformaldehyde 1–3% and hydroxylammonium chloride 5–10%, reagent R2 contains ammonia 16–25%, reagent R3 contains hydroxylammonium chloride 10–25% and methanol 3–10%. H314, H317, H351 Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing cancer.

P201, P260sh, P280sh, P303+361+353, P305+351+338, P310

Obtain special instructions before use. Do not breathe dust/vapors. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. For further information ask for a safety data sheet.

Interferences:

The following quantities of ions will not interfere: < 1000 mg/L Mg²⁺, Zn²⁺, PO₄³⁻; < 500 mg/L Ca²⁺; < 100 mg/L Cu²⁺; < 20 mg/L Fe³⁺, PO₄³⁻ when Ca²⁺ ions (10 mg/L) are present too; < 10 mg/L Ni²⁺; < 1 mg/L Co²⁺; < 0.1 mg/L Cr(III)

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

Notes:

- For the determination of lowest manganese concentrations (< 0.05 mg/L Mn), the sample or standard solution must be stabilized with hydrochloric acid.
- Please contact MACHEREY-NAGEL for special working instructions concerning a simplified procedure in a beaker (without filling up) an evaluation in 50 mm cuvette.

Procedure:

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

Pour into two separate volumetric flasks 25 mL:

Test sample	Blank value
20 mL test sample (the pH value of the sample must be between pH 1 and 13)	20 mL test sample (the pH value of the sample must be between pH 1 and 13)
1 mL R1, mix	–
1 mL R2, mix, wait 1 min	–
1 mL R3, mix	–

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 1-60.

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

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 Multistandard Drinking Water (REF 925018)

Decreasing volume of analytical preparation:

In order to increase the number of determinations, you can work with volumetric flasks of 10 mL: 8 mL test sample + 0.4 mL R1 + 0.4 mL R2 + 0.4 mL R3, semi-micro cuvette (REF 91950).

Disposal:

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