

REF 985 058

en

Test 0-58

03.16

NANOCOLOR® Manganese 10**Method:**

Photometric determination of total manganese with formaldoxime

	Tube test	Semi-micro cuvette 50 mm
Range:	0.1–10.0 mg/L Mn	0.02–2.00 mg/L Mn
Wavelength (HW = 5–12 nm):	470 nm	
Reaction time:	5 min (300 s)	
Reaction temperature:	20–25 °C	

Contents of reagent set:

- 20 test tubes Manganese 10
- 1 test tube with 11 mL Manganese 10 R2
- 1 bottle with 1.5 g Manganese 10 R3
- 1 measuring spoon 70 mm

Hazard warning:

Test tubes contain paraformaldehyde 1–10 % and hydroxylammonium chloride 5–10 %, reagent R2 contains ammonia 5–10 %.

H314, H317, H351 Causes severe skin burns and eye damage. May cause an allergic skin reaction. Suspected of causing cancer.

P201, P202, P260, P261, P272, P280, P301+330+331, P302+352, P303+361+353, P304+340, P305+351+338, P308+313, P333+313, P363, P405, P501 Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe vapors. Avoid breathing dust. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/eye protection. IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of water / ... IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice / attention. If skin irritation or rash occurs: Get medical advice / attention. Wash contaminated clothing before reuse. Store locked up. Dispose of contents / container to regulated waste treatment. For further information ask for a safety data sheet.

Interferences:

The following ions will not interfere:

- ≤ 1000 mg/L Pb, Ca, Mg, Cl⁻, SO₄²⁻
- ≤ 100 mg/L Cu, Zn, PO₄³⁻
- ≤ 50 mg/L Al
- ≤ 10 mg/L Fe
- ≤ 1 mg/L Cr, Co, Ni

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

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 2 and 6*), close and mix.
- Add
- 500 µL** (= 0.5 mL) R2, close and mix. Wait **1 min**.
- Add
- 1 level measuring spoonful** of R3, close and shake well.
- Clean outside of test tube and measure after 5 min.

Lower manganese concentrations (0.02–2.00 mg/L Mn) can be determined by using semi-micro cuvettes 50 mm (REF 919 50):

Test sample	Blank value
Open test tube, add	Open test tube, add
4.0 mL test sample (<i>the pH value of the sample must be between pH 2 and 6</i>), close and mix.	4.0 mL distilled water, close and mix.
Add	Add
500 µL (= 0.5 mL) R2, close and mix. Wait 1 min .	500 µL (= 0.5 mL) R2, close and mix. Wait 1 min .
Add	Add
1 level measuring spoonful of R3, close and shake well.	1 level measuring spoonful of R3, close and shake well.

Pour the contents of test tubes into semi-micro cuvettes 50 mm and measure after 5 min [method 1581].

Measurement:

For **NANOCOLOR®** photometers and PF-12 see manual, test 0-58.

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:

NANOCONTROL Multistandard Drinking water (REF 925 018)

MACHEREY-NAGEL GmbH & Co. KG · Neumann-Neander-Str. 6–8 · 52355 Düren · Germany

Tel.: +49 24 21 969-0 · Fax: +49 24 21 969-199 · info@mn-net.com · www.mn-net.com