REF 918126

Test 1-26 01.23
NANOCOLOR® Manganese LR

Method:
Photometric determination of the manganese content using the TMB method according to Serrat.

Rectangular cuvette	**50 mm**	**10 mm**
Measuring range (mg/L Mn)	**0.005–0.700**	**0.10–3.00**
Measuring wavelength (HW = 5–12 nm)	**450 nm / 436 nm**	
Reaction time	**5+1 min (360 s)**	
Reaction temperature	**20–25 °C**	

Contents of reagent set
52 mL manganese LR R1
102 mL manganese LR R2
204 mL manganese LR R3

Hazard warnings:
Information on hazards can be found on the outer label and on the safety data sheet. The safety data sheet can be downloaded from ***www.mn-net.com/SDS***.

Interferences:
To verify the absence of interfering complexing agents, we recommend *NANOCOLOR*® organic complexing agents 10 (REF 985052) as a pre-test.
The following will not interfere: 1200 mg/L Cl^-; 1000 mg/L Ca^{2+}; 500 mg/L Mg^{2+}, SO_4^{2-}; 200 mg/L NO_3^-; 100 mg/L NH_4^+, PO_4^{3-}, SiO_4^{2-}; 10 mg/L F^-, Fe^{3+}; 4 mg/L Zn^{2+}; 2 mg/L Al^{3+}, Cu^{2+}.

Procedure:
Required accessories: Volumetric flask 25 mL (REF 91661), 10 mm and 50 mm rectangular cuvettes (REF 91933 and 91935), piston pipettes with tips

Sample	**Zero value**
In a 25 mL volumetric flask, place: **20 mL** sample solution (the pH of the sample must be between pH = 2 and pH = 10) Add **0.5 mL** R1, mix Add **1.0 mL** R2, mix Wait for 5 min Slowly **form a layer under** the solution with **2.0 mL** R3	In a 25 mL volumetric flask, place: **20 mL** distilled water Add **0.5 mL** R1, mix Add **1.0 mL** R2, mix Wait for 5 min Slowly **form a layer under** the solution with **2.0 mL** R3
Fill up sample and zero value with distilled water to 25 mL and mix. After 1 min, pour into the cuvettes, clean the outside of the cuvettes and measure.	

Measurement:
For MACHEREY-NAGEL photometers see manual, test 1-26. Photometers of other manufacturers: Check the factor for each type of device by measuring standard solutions.

Analytical quality assurance:
Multistandard Drinking Water (REF 925018)

Decreasing volume of analytical preparation:
To increase the number of determinations, 10 mL can be prepared in volumetric flasks: 8 mL sample solution + 0.2 mL R1 + 0.4 mL R2 + 0.8 mL R3. The evaluation is then performed in a semi-micro cuvette (REF 91950).

Disposal:
Information about disposal can be found on the safety data sheet. The safety data sheet can be downloaded from ***www.mn-net.com/SDS***.

CTL SCIENTIFIC SUPPLY CORP. 1016-3 Grand Boulevard, Deer Park, NY 11729
Tel: **631-242-4249**
Web: **www.ctlscientific.com**

Manufacturer: **Macherey-Nagel GMbH & Co. KG**

REV: 2025-09