

1.10080.0001

MQuant™

Manganese Test

Mn

1. Method

Manganese(II) ions are oxidized to manganese(IV) oxide, which transforms an organic redox indicator into a colored oxidation product. The manganese concentration is measured **semiquantitatively** by visual comparison of the reaction zone of the test strip with the fields of a color scale.

2. Measuring range and number of determinations

Measuring range / color-scale graduation	Number of determinations
2 - 5 - 20 - 50 - 100 mg/l Mn	100

3. Applications

Sample material:

Groundwater and drinking water
Industrial water
Wastewater

Quality control (e. g. in the tanning and textile industry)

4. Influence of foreign substances

This was checked in solutions with 50 mg/l Mn. The determination is not yet interfered with up to the concentrations of foreign substances given in the table.

Concentrations of foreign substances in mg/l			
Ag ⁺	25	Cu ²⁺	100
Al ³⁺	1000	Fe ²⁺	25
Ca ²⁺	1000	Fe ³⁺	10
Cd ²⁺	1000	K ⁺	1000
Cl ⁻	1000	Mg ²⁺	1000
CN ⁻	1000	Na ⁺	1000
Co ²⁺	50	NH ₄ ⁺	1000
Cr ³⁺	0.05	Ni ²⁺	1000
		NO ₃ ⁻	1000
		Pb ²⁺	1000
		PO ₄ ³⁻	1000
		S ²⁻	10
		Sn ²⁺	25
		SO ₃ ²⁻	100
		SO ₄ ²⁻	1000
		Zn ²⁺	1000

Oxidizing cations and anions interfere with the determination (see section 7, "Notes on the measurement").

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

The test strips and test reagents are stable up to the date stated on the pack when stored closed at +15 to +25 °C.

Package contents:

Tube containing 100 test strips
1 bottle of reagent Mn-1
1 bottle of reagent Mn-2

Other reagents:

MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072
Manganese standard solution CertiPUR®, 1000 mg/l Mn²⁺, Cat. No. 119789

6. Preparation

- Samples containing more than 100 mg/l Mn must be diluted with distilled water.
- **The pH must be within the range 1 - 7.** Adjust, if necessary, with sulfuric acid.

7. Procedure

Immerse the reaction zone of the test strip in the pre-treated sample (15 - 25 °C) for **1 sec.**

Shake off excess liquid from the strip.

Reagent Mn-1	1 drop ¹⁾	Place on the reaction zone of the test strip and allow to react for 15 sec.
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Shake off excess liquid from the strip.
Wait **15 sec.**

Reagent Mn-2	1 drop ¹⁾	Place on the reaction zone of the test strip and allow to react for 1 min.
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Shake off excess liquid from the strip and determine with which color field on the label the color of the reaction zone coincides most exactly.

Read off the corresponding result in mg/l Mn.

¹⁾ Hold the bottle vertically while adding the reagent!

Notes on the measurement:

- In samples containing oxidizing cations or anions, the reaction zone turns green in color even **before** the addition of the reagents.
 - The color of the reaction zone may continue to change after the specified reaction time has elapsed. This must not be considered in the measurement.
 - If the color of the reaction zone is equal to or more intense than the darkest color on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 100 mg/l Mn is obtained.
- Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

Result of analysis = measurement value x dilution factor

8. Method control

To check test strips, test reagents, and handling: Dilute the manganese standard solution with distilled water to 50 mg/l Mn²⁺ and analyze as described in section 7.

Additional notes see under www.qa-test-kits.com.

9. Note

Reclose the reagent bottles and **the tube containing the test strips immediately after use.**

