

1.14780.0001

1.14780.0007

MQuant®

Zinc Test**Zn****1. Method****Determination with color-disk comparator**

In sulfuric solution zinc ions react with thiocyanate ions and brilliant green to form a blue-green complex. The zinc concentration is measured **semi-quantitatively** by visual comparison of the color of the measurement solution with the color fields of a color disk.

2. Measuring range and number of determinations

Measuring range / color-scale graduation	Number of determinations
0.1 - 0.2 - 0.3 - 0.4 - 0.5 - 0.7 - 1 - 2 - 5 mg/l Zn	120

3. Applications

This test measures only zinc ions.

Sample material:

Groundwater and surface water
Drinking water and mineral water
Beverages
Industrial water
Boiler water
Wastewater and percolating water
Electroplating wastewater
This test is **not suited** for seawater.

4. Influence of foreign substances

This was checked individually in solutions containing 1 and 0 mg/l Zn. The determination is not yet interfered with up to the concentrations of foreign substances given in the table. Cumulative effects were not checked; such effects can, however, not be excluded.

Concentrations of foreign substances in mg/l or %					
Al ³⁺	1000	Cu ²⁺	100	Ni ²⁺	100
Ca ²⁺	1000	F ⁻	1000	NO ₂ ⁻	1000
Cd ²⁺	1000	Fe ³⁺	100	Pb ²⁺	100
CN ⁻	1000	Hg ²⁺	1000	PO ₄ ³⁻	1000
CO ₃ ²⁻	1000	Mg ²⁺	1000	SCN ⁻	1000
Cr ³⁺	500	Mn ²⁺	1000	SiO ₃ ²⁻	100
CrO ₄ ²⁻	100	NH ₄ ⁺	1000	SO ₃ ²⁻	1000

5. Reagents and auxiliaries**Please note the warnings on the packaging materials!**

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

Package contents:

1 bottle of reagent Zn-1
1 bottle of reagent Zn-2
1 bottle of reagent Zn-3
1 bottle of reagent Zn-4
1 graduated 5-ml plastic syringe
1 grey dosing spoon
2 test tubes with screw caps
1 color-disk comparator

Other reagents and accessories:

Nitric acid 65 % for analysis EMSURE®, Cat. No. 100456
MQuant® Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium hydroxide solution 1 mol/l Titripur®, Cat. No. 109137
Sulfuric acid 0.5 mol/l Titripur®, Cat. No. 109072
Zinc standard solution Certipur®, 1000 mg/l Zn, Cat. No. 119806

MQuant® Flat-bottomed tubes with screw caps for MQuant® tests with color disk comparator (12 pcs), Cat. No. 117988

Refill pack:**Cat. No. 114782**

Zinc Test

Refill pack for 114780 and 114412

(Reagents **without technical accessories** for the number of determinations stated in section 2)

6. Preparation

- Analyze immediately after sampling. Otherwise preserve with nitric acid 65 % (1 ml nitric acid per 1 l of sample solution).
- The pH must be within the range 1 - 10.**
Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.
- Filter strongly turbid samples.

7. Procedure

	Measurement sample right-hand tube (A) behind the color disk	Blank left-hand tube (B) behind the color disk	
Pretreated sample (20 - 25 °C)	5 ml 4 drops ¹⁾	5 ml -	Inject into the test tube with the syringe. The pH must be within the range 0.9 - 1.0. Adjust the pH, if necessary, with reagent Zn-1.
Reagent Zn-2	1 level grey dosing spoon	-	Add, close the tube, and shake vigorously until the reagent is completely dissolved.
Reagent Zn-3	1 level grey microspoon (in the cap of the Zn-3 bottle)	-	Add, close the tube, and shake vigorously until the reagent is completely dissolved.
Leave to stand for exactly 5 min (reaction time).			
Reagent Zn-4	4 drops ¹⁾	-	Add, close the tube, and mix.
Immediately hold the comparator to the light, keeping it upright, and rotate the disk until the closest possible color match is achieved between the two large windows. Read off the result in mg/l Zn shown in the small window.			

1) Hold the bottle vertically while adding the reagent!

Notes on the measurement:

- The color of the measurement solution remains stable for only a short time.**
- Turbidity in the measurement solution makes the color comparison more difficult.
- If the color of the measurement solution 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 5 mg/l Zn 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 reagents, measurement device, and handling:
Dilute the zinc standard solution with distilled water to 0.5 mg/l Zn and analyze as described in section 7.

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

9. Notes

- Reclose the reagent bottles immediately after use.
- Rinse the test tubes and the syringe **with distilled water only**.
- Information on disposal can be obtained at** www.disposal-test-kits.com.

