1.17953.0001

MQuant™ Zinc Test

Zn

1. Method

In alkaline solution zinc ions react with dithizone to form a red complex. The zinc 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
4 - 10 - 20 - **50 mg/l Zn**	100

3. Applications

Sample material:
Wastewater
Etching baths
Liquids for canned preserves

4. Influence of foreign substances

This was checked in solutions containing 10 and 0 mg/l Zn. 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^{+}	**2.5**	CrO_4^{2-}	1000	NO_2^{-}	1000
Al^{3+}	1000	**Cu^{2+}**	**0.5**	NO_3^{-}	1000
Ba^{2+}	1000	Fe^{2+}	50	Pb^{2+}	250
Bi^{3+}	1000	Fe^{3+}	50	PO_4^{3-}	1000
Ca^{2+}	250	**Hg^{2+}**	**1**	S^{2-}	50
Cd^{2+}	**0.5**	**Mg^{2+}**	**1**	SO_3^{2-}	1000
Cl^{-}	1000	Mn^{2+}	100	SO_4^{2-}	1000
CN^{-}	**1**	MnO_4^{-}	50	Sn	250
Co^{2+}	**1**	NH_4^{+}	1000		
Cr^{3+}	500	**Ni^{2+}**	**5**		

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

The test strips and the test reagent 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
2 bottles of reagent Zn-1
1 test vessel

Other reagents:
MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium hydroxide solution about 32 % for analysis EMSURE®, Cat. No. 105590
Nitric acid Titrisol® for 1 mol/l, Cat. No. 109966
Zinc standard solution CertiPUR®, 1000 mg/l Zn, Cat. No. 119806

6. Preparation

- Samples containing more than 50 mg/l Zn must be diluted with distilled water.
- **The pH must be above 4.**
  Adjust, if necessary, with sodium hydroxide solution.

7. Procedure

Rinse the test vessel several times with the pretreated sample.

Pretreated sample (**15 - 30 °C**)	5 ml	Fill the test vessel to the 5-ml mark.
Reagent Zn-1	10 drops [1]	Add and mix **carefully** (**sodium hydroxide solution!**).

Immerse the reaction zone of the test strip in the measurement sample **for 1 sec**.

Allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel and **after 15 sec** 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 Zn.

[1] **Hold the bottle vertically while adding the reagent!**

Notes on the measurement:

- The reaction zone of the unused strip is orange in color. The color to be compared with the color scale does not appear until the analysis described above has been completed.
- 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 50 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

- If the test is performed without the addition of reagent Zn-1 in the pH range 1 - 5, the reaction zone of the test strip responds also to other heavy metals, turning pink to brown in color in the process. In this case the total content of all heavy metals is at least approx. 10 mg/l or, if only cadmium, cobalt, and lead are present, approx. 5 mg/l.

8. Method control

To check test strips, test reagent, and handling: Mix 1.0 ml of the zinc standard solution with 50 ml of nitric acid 1 mol/l, make up to 100 ml with distilled water, and mix anew. Zinc content: 10 mg/l. Analyze this standard solution as described in section 7.
Additional notes see under **www.qa-test-kits.com**.

9. Notes

- **Reclose** the reagent bottle and **the tube containing the test strips immediately after use**.
- Rinse the test vessel **with distilled water only**.

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