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MQuant™ Copper Test

Cu

1. Method

Copper(II) ions are reduced to copper(I) ions by a reducing-agent mixture. The copper(I) ions react with 2,2'-biquinoline (cuproin) to form a violet complex. The copper concentration is measured **semi-quantitatively** 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
10 - 30 - 100 - **300 mg/l Cu**	100

3. Applications

This test measures both copper(II) and copper(I) ions. It is also suited for the detection of copper in metallic materials and surfaces (see section 7).

Sample material:
Drinking water
Swimming-pool water
Wastewater, especially from the electroplating and printing industries
Alloys
Wine

4. Influence of foreign substances

This was checked in solutions with 30 and 0 mg/l Cu. 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^{+}	1000	Fe^{2+}	1000	NH_4^{+}	1000
Al^{3+}	1000	Fe^{3+}	1000	Ni^{2+}	1000
Ba^{2+}	1000	**$[Fe(CN)_6]^{4-}$**	**1**	NO_2^{-}	1000
Ca^{2+}	1000	**$[Fe(CN)_6]^{3-}$**	**1**	NO_3^{-}	1000
Cd^{2+}	1000	I^{-}	250	Pb^{2+}	1000
Cl^{-}	1000	K^{+}	1000	PO_4^{3-}	1000
CN^{-}	**1**	Mg^{2+}	1000	SO_3^{2-}	1000
Co^{2+}	1000	MnO_4^{-}	1000	SO_4^{2-}	1000
CrO_4^{2-}	500	Na^{+}	1000	Zn^{2+}	1000

5. Reagents and auxiliaries

The test strips 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

Other reagents:
MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium acetate anhydrous for analysis EMSURE®, Cat. No. 106268
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072
Copper standard solution CertiPUR®, 1000 mg/l Cu, Cat. No. 119786

6. Preparation

- Samples containing more than 300 mg/l Cu must be diluted with distilled water.
- **The pH must be within the range 2 - 6.** If necessary, buffer the sample with sodium acetate or, respectively, adjust the pH 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 and **after 30 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 Cu.

Notes on the measurement:

- 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 300 mg/l Cu 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

Determination on metallic surfaces:

Moisten the reaction zone of the test strip with water and lightly press it on the surface to be tested (e. g. that of a coin) for approx. 10 - 30 sec. The obtained measurement results are only guideline values. A violet color is produced by an amount of copper as low as 0.5 µg.

8. Method control

To check test strips and handling:
Dilute the copper standard solution with distilled water to 100 mg/l Cu and analyze as described in section 7.
Additional notes see under **www.qa-test-kits.com**.

9. Note

Reclose the tube containing the test strips immediately after use.

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