

1.10015.0001

MQuant™ Aluminium Test AI

1. Method

Aluminium ions are transformed into aluminate, which reacts with aurin tricarboxylic acid to form a red complex. The aluminium 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
10 - 25 - 50 - 100 - 250 mg/l Al	100

3. Applications

Sample material:

Industrial water
Wastewater
Beverages, e. g. wine, beer
Food after appropriate sample pretreatment

4. Influence of foreign substances

This was checked in solutions with 50 and 0 mg/l Al. 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 ³⁺	50
As ⁵⁺	1000	[Fe(CN) ₆] ⁴⁻	1000
Ca ²⁺	1000	[Fe(CN) ₆] ³⁻	1000
Ca ²⁺	1000	Hg ⁺	1000
Cl ⁻	1000	Hg ²⁺	1000
CN ⁻	500	Mg ²⁺	1000
Co ²⁺	1000	Mn ²⁺	1000
Cr ³⁺	1000	MnO ₄ ⁻	100
CrO ₄ ²⁻	500	N ₃ ⁻	250
Cu ²⁺	10	NH ₄ ⁺	1000
F ⁻	250	NO ₂ ⁻	1000
Fe ²⁺	50	NO ₃ ⁻	1000
		OCN ⁻	500
		Pb ²⁺	1000
		PO ₄ ³⁻	100
		S ²⁻	100
		SCN ⁻	1000
		Sn ²⁺	1000
		SO ₃ ²⁻	100
		SO ₄ ²⁻	1000
		S ₂ O ₃ ²⁻	1000
		VO ₃ ⁻	500
		WO ₄ ²⁻	250
		Zn ²⁺	1000

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 Al-1
1 bottle of reagent Al-2
1 test vessel

Other reagents:

MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Potassium hydroxide solution 1 mol/l TitriPUR®, Cat. No. 109108
Hydrochloric acid 1 mol/l TitriPUR®, Cat. No. 109057
Aluminium standard Titrisol® for 1000 mg/l Al, Cat. No. 109967

6. Preparation

- Samples containing more than 250 mg/l Al must be diluted with distilled water.
- **The pH must be within the range 3 - 8.** Adjust, if necessary, with potassium hydroxide solution or hydrochloric acid.

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. Add until the pH of the solution reaches 13. Check with universal indicator strips.
Reagent Al-1	dropwise ¹⁾	

Filter off any resultant precipitate.

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

Allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel.

Reagent Al-2	1 drop ¹⁾	Place on the reaction zone of the test strip and allow to react for 1 min.
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Allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel and **after 1 min** 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 Al.

¹⁾ **Hold the bottle vertically while adding the reagent!**

Notes on the measurement:

- The reaction zone of the unused strip is red 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 250 mg/l Al 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 aluminium standard solution with distilled water to 100 mg/l Al and analyze as described in section 7.

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

9. Notes

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

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