

1.17917.0001

MQuant™ Arsenic Test

As

1. Method

When zinc and a solid acid are added to compounds of arsenic(III) and arsenic(V), arsenic hydride is liberated, which in turn reacts with mercury(II) bromide contained in the reaction zone of the test strip to form yellow-brown mixed arsenic mercury halogenides. The concentration of arsenic(III) and arsenic(V) 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 mg/l As	Number of determinations
0.02 - 0.05 - 0.1 - 0.2 - 0.5	100
0.1 - 0.5 - 1.0 - 1.7 - 3.0	

3. Applications

This test measures trivalent and pentavalent arsenic.

Sample material:

Drinking water and mineral water
Spring water and well water
Groundwater and surface water

4. Influence of foreign substances

This was checked in solutions with 0.05 and 0 mg/l As. 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 or %							
Ag ⁺	1	Ni ²⁺	10	Sb ³⁺	1	MgSO ₄	1 %
Co ²⁺	5	NO ₂ ⁻	100	SeO ₄ ²⁻	1	NaCl	1 %
Cu ²⁺	0.5	NO ₃ ⁻	100	SO ₃ ²⁻	1	Na ₂ SO ₄	1 %
Fe ²⁺	1000	PO ₄ ³⁻	100	S ₂ O ₃ ²⁻	0.5		
Fe ³⁺	1000	S ²⁻	0.5				

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
2 bottles of reagent As-1
1 bottle of reagent As-2
1 graduated 5-ml plastic syringe
1 red dosing spoon
2 reaction tubes with screw caps

Other reagents:

Arsenic standard Titrisol® for 1000 mg/l As, Cat. No. 109939

6. Preparation

- Samples containing more than 3.0 mg/l As must be diluted with distilled water.



Before the first use **necessarily** rinse the reaction tube several times with the pretreated sample!

7. Procedure

7.1 Measuring range 0.02 - 0.5 mg/l As

Rinse the reaction tube several times with the pretreated sample.		
Pretreated sample (15 - 25 °C)	10 ml	Inject into the reaction tube with the syringe.
Reagent As-1	1 level orange-colored micro-spoon (in the cap of the As-1 bottle)	Add and swirl until the reagent is completely dissolved .
Reagent As-2	2 level red dosing spoons	Add and immediately reclose the reaction tube with the screw cap.
Flip up the black test strip holder integrated in the screw cap, with the white dot facing you. Immediately insert the test strip into the opening, reaction zone first, as far as the mark and flip the test strip holder down completely. Leave to stand for 20 min , swirling two or three times during this period. Avoid any contact between the test strip and the solution! Remove the strip, briefly dip into distilled water, shake off excess liquid, 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 As.		

7.2 Measuring range 0.1 - 3.0 mg/l As

Rinse the reaction tube several times with the pretreated sample.		
Pretreated sample (15 - 25 °C)	5 ml	Inject into the reaction tube with the syringe.
Reagent As-1	1 level orange-colored micro-spoon (in the cap of the As-1 bottle)	Add and swirl until the reagent is completely dissolved .
Reagent As-2	1 level red dosing spoon	Add and immediately reclose the reaction tube with the screw cap.
Flip up the black test strip holder integrated in the screw cap, with the white dot facing you. Immediately insert the test strip into the opening, reaction zone first, as far as the mark and flip the test strip holder down completely. Leave to stand for 20 min , swirling two or three times during this period. Avoid any contact between the test strip and the solution! Remove the strip, briefly dip into distilled water, shake off excess liquid, 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 As.		

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, the following procedure must be adhered to:
If the test was carried out as per section 7.1, repeat the analysis as per section 7.2.
If the test was carried out as per section 7.2, repeat the measurement using **fresh**, diluted samples until a value of less than 3.0 mg/l As is obtained. Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

$$\text{Result of analysis} = \text{measurement value} \times \text{dilution factor}$$

8. Method control

To check test strips, test reagents, and handling:
Dilute the arsenic standard with distilled water to 0.1 mg/l As 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 reaction tubes and the syringe **with distilled water only**.
- The quantities of the reagents have been calculated to suffice for 100 determinations acc. to section 7.1. When proceeding acc. to section 7.2, a remainder of reagent As-2 is left over.

