

As Arsenic Test (highly sensitive) Order Code: 400700



1. Method

When zinc powder, a solid acid, and - for the elimination of interfering sulfide ions - an oxidizing agent 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 analytical test strip to form yellow-brown mixed arsenic-mercury halogenides. The concentration of arsenic(III) and arsenic(V) are measured semiquantitatively by visual comparison of the reaction zone of the analytical test strip with the fields of a colour scale.

2. Measuring range and number of determinations

Measuring range / Scale Readings	Quantity of tests
0.005 - 0.01 - 0.025 - 0.05 - 0.1 - 0.25 - 0.5 mg/l As ^{3+/5+}	100

3. Applications

Sample material:

Drinking water, mineral water, and curative water

Spring water and well water

Groundwater and surface water

4. Influence of foreign substances

The concentrations of foreign substances given in the table lie below the limit at which the determination is interfered with.

Concentrations of foreign substances in mg/l or %

Ag ⁺	0.5	F ⁻	100	NO ₂ ⁻	100	EDTA	1000
Al ³⁺	100	Fe ²⁺	500	NO ₃ ⁻	100	NaCl	20 %
Ca ²⁺	1000	Fe ³⁺	500	PO ₄ ³⁻	100		
Cl ⁻	1000	K ⁺	1000	S ²⁻	2		
CN ⁻	500	Mg ²⁺	1000	Sb ³⁺	1		
CO ₃ ²⁻	100	MnO ₄ ⁻	500	SeO ₃ ²⁻	1		
CrO ₄ ²⁻	250	Na ⁺	1000	SO ₃ ²⁻	2		
Cu ²⁺	0.5	Ni ²⁺	1	SO ₄ ²⁻	1000		

5. Reagents and auxiliaries

Please note the warnings on the packaging materials!

The analytical test strips are stable up to the date stated on the pack when stored in the closed tube at +15 to +35 °C.

Package contents:

Tube containing 100 analytical test strips	2 reaction bottle with screw cap
1 bottle of reagent As-1	1 red measuring spoon
1 bottle of reagent As-2	1 green measuring spoon
1 bottle of reagent As-3	1 colour card with handy hints

6. Preparation

Samples containing more than 0.5 mg/l $As^{3+/5+}$ must be diluted with distilled water.

7. Procedure

Pretreated sample	60 ml	Fill the reaction bottle to the mark
Reagent As-1	2 drops	Add and swirl
Reagent As-2	1 level red measuring spoon	Add and swirl, until the reagent is completely dissolved
Reagent As-3	1 level green measuring spoon	Add and immediately reclose the reaction bottle 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 analytical test strip into the opening, reaction zone first, as far as the blue mark and flip down the test strip holder.

Leave to stand for 20 min, swirling two or three times during this period.

Avoid any contact between the test strip and the sample solution!

Remove the test strip, briefly dip into water, shake off excess liquid, and determine with which field of the colour card the colour of the reaction zone coincides most exactly.

Read off the corresponding concentration value in mg/l $As^{3+/5+}$. If an exact colour match cannot be achieved, estimate an intermediate value.

Notes on the measurement:

- The colour 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 colour of the reaction zone is equal to or more intense than the darkest colour on the scale, repeat the measurement using **fresh**, diluted samples until a value of less than 0.5 mg/l $As^{3+/5+}$ is obtained. **This must then be multiplied by the corresponding dilution factor.**

8. Method control

To check analytical test strips, test reagents, and handling:

Dilute arsenic standard solution to 0.1 mg/l $As^{3+/5+}$ and analyze as described in section 7.

9. Note

Reclose the reagent bottles and the tube containing the test strips immediately after use.