1.10023.0001

MQuant™

Ascorbic Acid Test

1. Method

Ascorbic acid reduces yellow molybdophosphoric acid to phosphomolybdenum blue. The ascorbic acid 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
50 - 100 - 200 - 300 - 500 - 700 - 1000 - **2000 mg/l ascorbic acid**	100

3. Applications

The determination can be performed not only in liquid samples, but also on moist surfaces of e. g. freshly cut fruit and vegetables (see section 7).

Sample material:
Beverages, e. g. fruit and vegetable juices, refreshment drinks, beer, wine
Food and preserves

4. Influence of foreign substances

This was checked in solutions with 500 and 0 mg/l ascorbic acid. 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			
Citrate	1000	Oxalate	1000
Fe^{2+}	**10**	SO_3^{2-}	100
Fe^{3+}	**10**	Tartrate	1000

Reducing agents interfere with the determination.

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 and accessories:
Cellulose microcrystalline, Cat. No. 102330 or Cat. No. 102331
MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535
Sodium hydroxide solution 1 mol/l TitriPUR®, Cat. No. 109137
Sulfuric acid 0.5 mol/l TitriPUR®, Cat. No. 109072
Blank Strips (visual test strips - 100 pcs), Cat. No. 111860
L(+)-Ascorbic acid for analysis EMSURE®, Cat. No. 100468

6. Preparation

- Samples containing more than 2000 mg/l ascorbic acid must be diluted with distilled water.
- Strongly colored samples must be decolorized prior to the determination, e. g. with microcrystalline cellulose. When other decolorizing agents are used, it should first be checked whether they oxidize ascorbic acid, as this would falsify the measurement result.
  Activated charcoal is not suited for decolorizing.
- **The pH must be within the range 2 - 7.**
  Adjust, if necessary, with sodium hydroxide solution or sulfuric acid.

7. Procedure

Immerse the reaction zone of the test strip in the pretreated sample (**5 - 30 °C**) **for 1 sec**.

Shake off excess liquid from the strip and **after 10 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 ascorbic acid.

Determination on vegetable surfaces:

Cut plant material (e. g. fruit, vegetables, potatoes) with a knife, lightly press the reaction zone of the test strip on the moist surface **for 1 - 10 sec**, and **after 10 sec** compare with the color scale.

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 2000 mg/l ascorbic acid 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

- The ascorbic acid content in colored solutions can be estimated using the blank strips: Immerse the paper zone of a blank strip in the colored sample and compare the resultant colour with the reaction color of the ascorbic acid test strip. If there is no difference, no ascorbic acid is present in the sample. In the presence of ascorbic acid a mixed color consisting of the corresponding tone of the color scale and the color of the blank strip is obtained.
- **It is recommended to treat the measurement results obtained on moist surfaces only as guideline values.**

8. Method control

To check test strips and handling:
Dissolve 0.10 g of L(+)-ascorbic acid in distilled water, make up to 200 ml with distilled water, and mix. Ascorbic acid content: 500 mg/l.
Analyze this standard solution as described in section 7.
Use only freshly prepared solutions.
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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