

1.00815.0001

# Spectroquant® Magnesium Cell Test

Mg

## 1. Method

In neutral solution magnesium ions react with phthalein purple to form a violet dye that is determined photometrically.

## 2. Measuring range and number of determinations

Measuring range	Number of determinations
5.0 - 75.0 mg/l Mg	25

For programming data for selected photometers / spectrophotometers see [www.service-test-kits.com](http://www.service-test-kits.com).

## 3. Applications

### Sample material:

Groundwater and surface water  
Seawater (after sufficient dilution)  
Drinking water and mineral water  
Boiler water  
Nutrient solutions for fertilization  
Soils after appropriate sample pretreatment

## 4. Influence of foreign substances

This was checked in solutions containing 40 and 0 mg/l Mg. 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 %							
Al <sup>3+</sup>	10	F <sup>-</sup>	500	Ni <sup>2+</sup>	2.5	EDTA	25
BO <sub>3</sub> <sup>3-</sup>	1000	Fe <sup>3+</sup>	50	NO <sub>2</sub> <sup>-</sup>	1000	Na-acetate	1 %
Ca <sup>2+</sup>	150	K <sup>+</sup>	1000	PO <sub>4</sub> <sup>3-</sup>	500	NaCl	2 %
Cr <sup>3+</sup>	25	Mn <sup>2+</sup>	50	Zn <sup>2+</sup>	100	NaNO <sub>3</sub>	2 %
Cr <sub>2</sub> O <sub>7</sub> <sup>2-</sup>	50	Mo <sup>6+</sup>	25			Na <sub>2</sub> SO <sub>4</sub>	1 %
Cu <sup>2+</sup>	25	NH <sub>4</sub> <sup>+</sup>	1000				

## 5. Reagents and auxiliaries

### Please note the warnings on the packaging materials!

The test reagents are stable up to the date stated on the pack when stored closed at +15 to +25 °C.

### Package contents:

1 bottle of reagent Mg-1K  
1 bottle of reagent Mg-2K  
25 reaction cells  
1 sheet of round stickers for numbering the cells

### Other reagents and accessories:

MColorpHast™ Universal indicator strips pH 0 - 14, Cat. No. 109535  
Sodium hydroxide solution 1 mol/l TitriPUR®, Cat. No. 109137  
Hydrochloric acid 1 mol/l TitriPUR®, Cat. No. 109057  
Magnesium nitrate hexahydrate for analysis EMSURE®, Cat. No. 105853  
Pipette for a pipetting volume of 1.0 ml

## 6. Preparation

- Analyze immediately after sampling.
- The pH must be within the range 3 - 9.**  
Adjust, if necessary, with sodium hydroxide solution or hydrochloric acid.
- Filter turbid samples.

## 7. Procedure

Pretreated sample (20 - 30 °C)	1.0 ml	Pipette into a reaction cell, close the cell, and mix.
Reagent Mg-1K	1.0 ml	Add with pipette and mix.
<b>Leave to stand for exactly 3 min (reaction time).</b>		
Reagent Mg-2K	3 drops <sup>1)</sup>	Add, close the cell, and mix.
Measure the sample in the photometer.		

<sup>1)</sup> Hold the bottle vertically while adding the reagent!

## Notes on the measurement:

- For photometric measurement the cells must be clean. Wipe, if necessary, with a clean dry cloth.
- Measurement of turbid solutions yields false-high readings.
- The pH of the measurement solution must be approx. 7.5.
- The color of the measurement solution remains stable for at least 60 min after the addition of reagent Mg-2K.

## 8. Analytical quality assurance

To check the photometric measurement system (test reagent, measurement device, handling) and the mode of working, a freshly prepared magnesium standard solution containing 40.0 mg/l Mg (application see the website) can be used. Sample-dependent interferences (matrix effects) can be determined by means of standard addition.

Additional notes see under [www.qa-test-kits.com](http://www.qa-test-kits.com).

### Characteristic quality data:

In the production control, the following data were determined in accordance with ISO 8466-1 and DIN 38402 A51:

Standard deviation of the method (mg/l Mg)	± 0.64
Coefficient of variation of the method (%)	± 1.6
Confidence interval (mg/l Mg)	± 1.5
Number of lots	22

### Characteristic data of the procedure:

Sensitivity: Absorbance 0.010 A corresponds to (mg/l Mg)	1.6
Accuracy of a measurement value (mg/l Mg)	max. ± 4.0

For quality and batch certificates for Spectroquant® test kits see the website.

## 9. Notes

- Reclose the reagent bottles immediately after use.
- Information on disposal can be obtained at [www.disposal-test-kits.com](http://www.disposal-test-kits.com).**

