

1.00858.0001

Spectroquant® Calcium Cell Test

Ca

1. Method

In neutral solution calcium 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
10 - 250 mg/l Ca 14 - 350 mg/l CaO 25 - 624 mg/l CaCO ₃	25

For programming data for selected photometers / spectrophotometers see www.sigmaaldrich.com/photometry.

3. Applications

Sample material:

Groundwater and surface water
Drinking water
Mineral water
Boiler water
Nutrient solutions for fertilization
Soils after appropriate sample pretreatment
This test is **not suited** for seawater.

4. Influence of foreign substances

This was checked individually in solutions containing 125 and 0 mg/l Ca. The determination is not yet interfered with up to the concentrations of foreign substances given in the table. Cumulative effects were not checked; such effects can, however, not be excluded.

Concentrations of foreign substances in mg/l or %							
Al ³⁺	10	Fe ³⁺	50	Ni ²⁺	2,5	EDTA	25
BO ₃ ³⁻	1000	K ⁺	1000	NO ₂ ⁻	1000	Na-acetate	1 %
Cr ³⁺	25	Mg ²⁺	30	PO ₄ ³⁻	500	NaCl	2 %
Cr ₂ O ₇ ²⁻	50	Mn ²⁺	50	Zn ²⁺	100	NaNO ₃	2 %
Cu ²⁺	25	Mo ⁶⁺	25			Na ₂ SO ₄	1 %
F ⁻	500	NH ₄ ⁺	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 Ca-1K
1 bottle of reagent Ca-2K
25 reaction cells
1 sheet of round stickers for numbering the cells

Other reagents and accessories:

MQuant® Universal indicator strips pH 0 - 14, Cat. No. 1.09535
Sodium hydroxide solution 1 mol/l Titripur®, Cat. No. 1.09137
Hydrochloric acid 1 mol/l Titripur®, Cat. No. 1.09057

Pipettes for pipetting volumes of 0.50 and 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 Ca-1K	1.0 ml	Add with pipette and mix.
Leave to stand for exactly 3 min (reaction time).		
Reagent Ca-2K	0.50 ml	Add with pipette, close the cell, and mix.
Measure the sample in the photometer.		

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 Ca-2K.

8. Analytical quality assurance

recommended before each measurement series
To check the photometric measurement system (test reagents, measurement device, handling) and the mode of working, a freshly prepared calcium standard solution containing 125 mg/l Ca (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.

For quality and batch certificates for Spectroquant® test kits see the website, where you will find all data in production control, that are determined in accordance with ISO 8466-1 and DIN 38402 A51.

9. Notes

- Reclose the reagent bottles immediately after use.
- Information on disposal can be obtained at www.disposal-test-kits.com.**

