

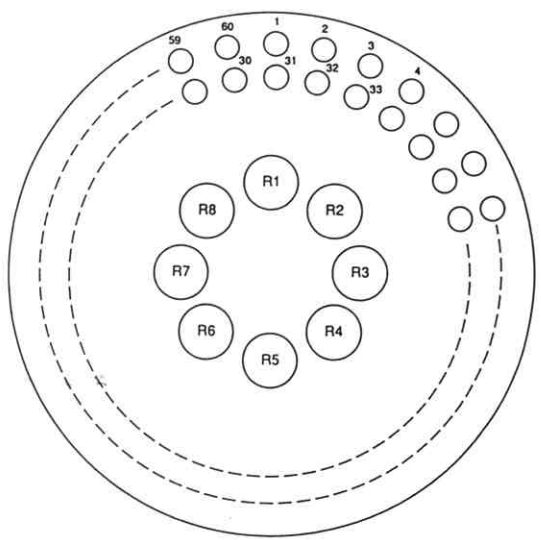
SPECTROPHOTOMETRIC ANALYSIS No. A249

Measurement of Ca and Mg Using the Microsampling Method

The automatic AA system, model AA-6501, realizes full automation of sample dilution, reagent addition and other operations. With this system, automatic measurement using a microsampling method is enabled. The microsampling method is a technique of flame atomic absorption analysis requiring only a small volume of sample (10 to 100 μl). Because of this, burner clogging does not occur even with a sample of high salt concentration. Besides, the small sample volume means a great shortening of the pretreatment time required for heating and concentration.

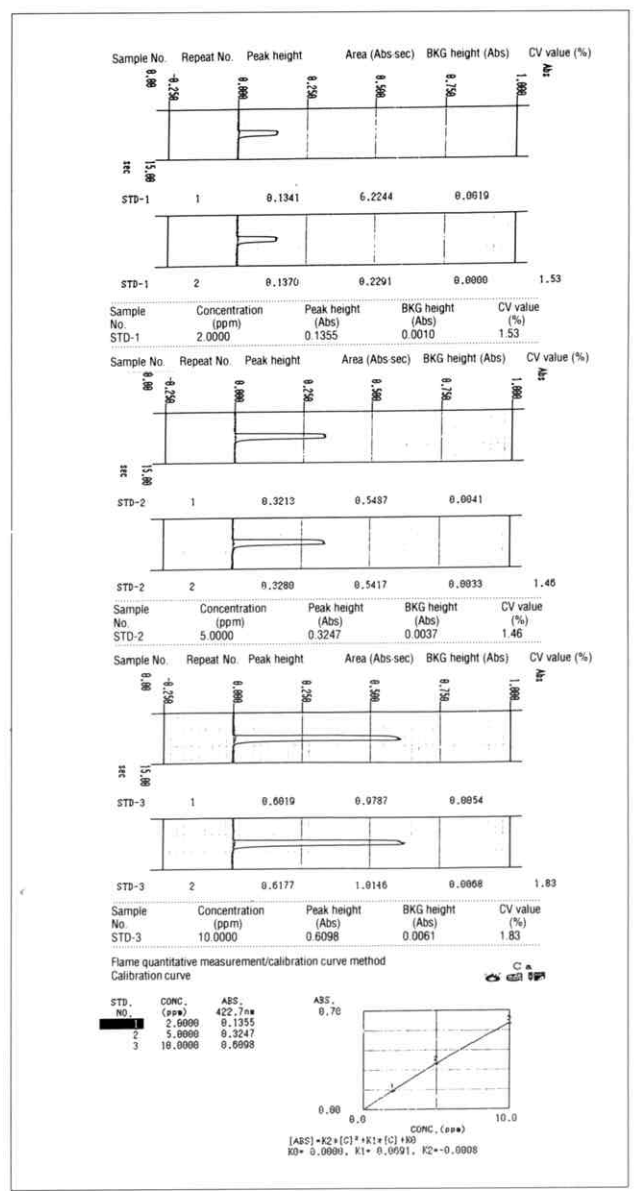
Using the AA-6501 automatic AA system with the microsampling method, examples of measurement of Ca and Mg in cereal hydrolysates are shown. The analysis is fully automatic from preparation of standard sample solutions to addition of 2000 ppm of La as an interference suppressing agent.

■ Arrangement of the Turntable



Beaker	R1	Blank
	R2	La 2% solution
	R3	Ca 20 ppm solution
Vial	1	Acid decomposed cereal solution
	2	Acid decomposed cereal solution

■ Working Curve for Ca



■ Final Result for Ca

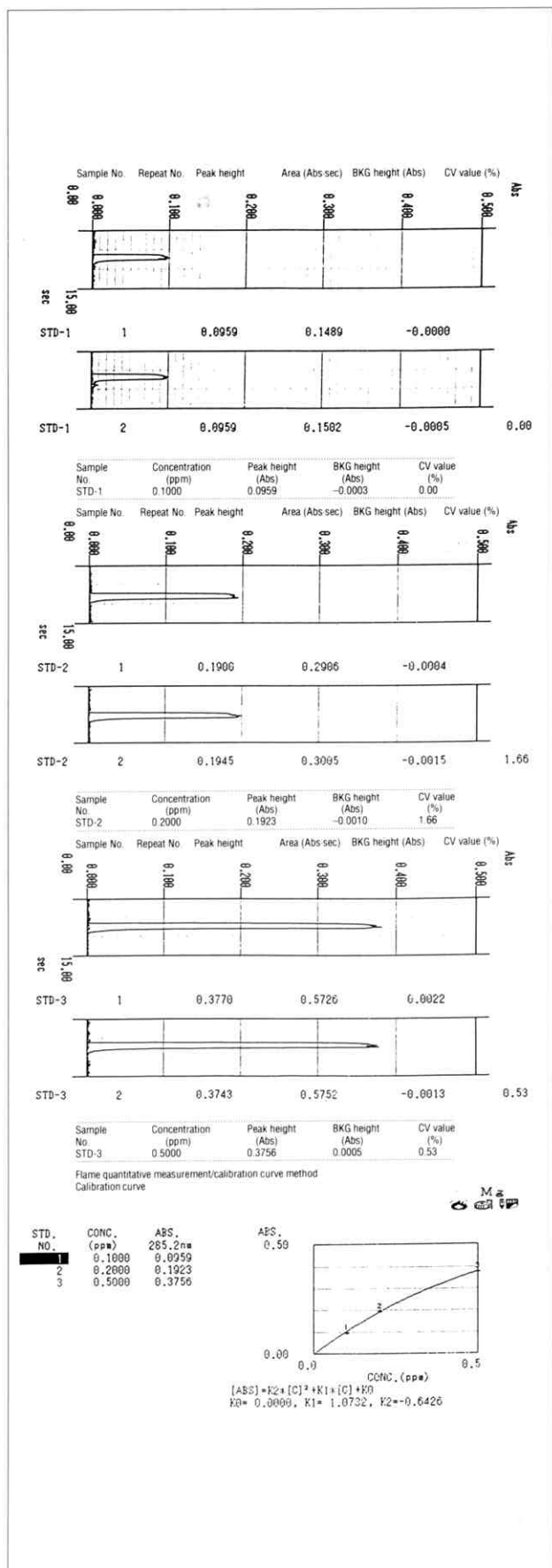
*****Flame quantitative measurement (single drop method)*****

Element name : Ca
Wavelength : 422.7 nm

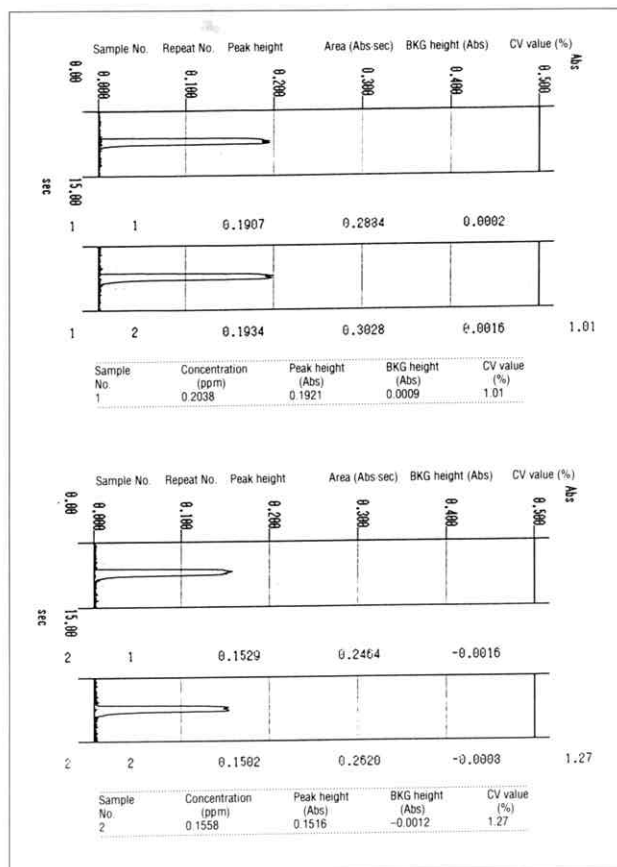
Method of concentration calculation : Calibration curve method
Analyzed by :
Remarks :

SAMPLE NO.	SAMPLE NAME	CONC. (ppm)	ABS. (422.7nm)	WEIGHT (g)	VOLUME (ml)	DILUTION RATIO	ACTUAL CONC. (ppm)	FACTOR
1		4.9281	0.3207	1.00	1.00	2.00	9.80 (ppm)	1.00
2		2.1844	0.1478	1.00	1.00	2.00	4.37 (ppm)	1.00

Working Curve for Mg



Determination of Mg



Analytical Conditions for Mg

**** Flame quantitative measurement (single drop method) parameters **** 1991/11/25 19:08:53 ****

Lighting conditions:	Lighting	Mg #2	Current	8 mA / 0 mA	Wavelength	285.2 nm	Burner height	6 mm	Slit width	0.5 nm	Fuel gas flow rate	1.6 l/min	Lighting mode	BGC-D2	Additive gas type	air
Waveform display response	DIRECT	Unit of concentration	ppm													
Repeat conditions	Repeats	Max. repeats	CV value limit													
Blank measurement	1 times	1 times	99.9%													
Standard sample measurement (standard addition method)	2	2	99.9													
Unknown sample measurement (simplified standard addition method)	2	2	99.9													
Drift correction measurement	1	1	99.9													
ASC parameters	Automatic dilution re-measurement	OFF	Blank Measurement alternative	OFF												
1) First reagent position	R1	2) Second reagent position	R2	3) Third reagent position		4) Fourth reagent position										
Mixing	ON	Blended sample injection volume	100 μl	Inspection speed	25 μl/sec	Suction, discharge times	5 times	Suction speed	130 μl/sec	Discharge speed	330 μl/sec					
STD No.	Concentration (ppm)	Standard sample position	Sample amount (μl)	R1 amount (μl)	R2 amount (μl)	Total (μl)										
1	0.1000	R3	10	350	40	400										
2	0.2000	R3	20	340	40	400										
3	0.5000	R3	40	320	40	400										



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