

CALCIUM

2 x 100 ml

INTENDED USE

Reagent for colorimetric determination of calcium in foodstuff and other sample material.

PRINCIPLE OF THE METHOD

Arsenazo(III) combines with calcium at slight acidic pH to form a blue complex, the absorbance of which is measured at 660 nm. The reaction has high specificity and interference from magnesium is avoided, due to pH. For bichromatic analyzers, the reference wavelength must be set at 700 nm.

KIT COMPONENTS

The components of the kit are stable until expiration date on the label.
Keep away from direct light sources.

CA R1: 2 x 100 ml (liquid) blue cap

Composition: arsenazo(III) 0.2 mM, Good buffer 50 mM pH 6.8, preservatives and stabilizers.

CA BL: 2 x 100 ml (liquid) white cap

Composition: Good buffer 50 mM pH 6.8, preservatives and stabilizers.

Store all components at 15-25°C.

In vitro use only.

MATERIALS REQUIRED BUT NOT SUPPLIED

Current laboratory instrumentation. Spectrophotometer UV/VIS with thermostatic cuvette holder. Automatic micropipettes. Glass or high quality polystyrene cuvettes. Standard solution.
Calcium standard 100 mg/l (code SQPE053231) is available on request. Please contact customer service for further information.

REAGENT PREPARATION

The liquid reagent is ready to use.
Stability: up to expiration date on labels at 15-25°C.
Stability after first opening: preferably within 60 days at 15-25°C away from direct light sources.

Preparation of blank buffer: ready to use.

PRECAUTIONS

CA R1: Warning. Causes serious eye irritation (H319).



Causes skin irritation (H315). Wear protective gloves. Eye protection (P280). IF ON SKIN: Wash with plenty of water (P302+P352). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338). If eye irritation persists: get medical advice (P337+P313).

CA BL: Warning. Causes serious eye irritation (H319).



Causes skin irritation (H315). Wear protective gloves. Eye protection (P280). IF ON SKIN: Wash with plenty of water (P302+P352). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing (P305+P351+P338). If eye irritation persists: get medical advice (P337+P313).

SPECIMEN

Wine or any foodstuff once its utilization has been tested.

PROCEDURE

Wavelength:	660 nm			
Lightpath:	1 cm			
Temperature:	37°C			
dispense:	reagent blank	standard	sample blank	sample
reagent	2 ml	2 ml	-	2 ml
water	50 µl	-	-	-
standard	-	50 µl	-	-
sample	-	-	50 µl	50 µl
blank	-	-	2 ml	-

Mix, incubate at 37°C for 5 minutes.
Read against water the absorbances of standard (As_i), sample (Ac_i), sample blank (Ac_s) and reagent blank (Ar_i).

RESULTS CALCULATION

$$\text{Calcium mg/l} = \frac{(Ac_i - Ar_i) - Ac_s}{As_i - Ar_i} \times \text{standard value}$$

TEST PERFORMANCE

Specificity

The method is specific for calcium ions.

Linearity

The method is linear up to 200 mg/l.
If the limit value is exceeded, it is suggested to dilute the sample 1+4 with distilled water and to repeat the test, multiplying the result by 5.

Precision

White wine

intra-assay (n=10)

	mean (mg/l)	SD (mg/l)	CV%
sample	103.362	0.317	0.306

inter-assay (n=20)

	mean (mg/l)	SD (mg/l)	CV%
sample	106.673	3.810	3.571

Red wine

intra-assay (n=10)

	mean (mg/l)	SD (mg/l)	CV%
sample	128.856	0.690	0.536

inter-assay (n=20)

	mean (mg/l)	SD (mg/l)	CV%
sample	128.081	4.048	3.160

Rose wine

intra-assay (n=10)

	mean (mg/l)	SD (mg/l)	CV%
sample	98.706	1.047	1.061

inter-assay (n=20)

	mean (mg/l)	SD (mg/l)	CV%
sample	96.272	4.252	4.416

WASTE DISPOSAL

This product is made to be used in professional laboratories.
P501: Dispose of contents according to national/international regulations.

REFERENCES

Zak B., Epstein E., Babinski E.S., Review of Calcium Methodologies, Annals of Clinical and Laboratory Science 5, 195-212 (1975).
Tietz Textbook of Clinical Chemistry, Second Edition, Burtis-Ashwood (1994).
Clinical Chemistry, vol. 38 n. 6 - 904-908 - (1992)

MANUFACTURER

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SYMBOLS

	lot of manufacturing
	code number
	storage at temperature interval
	expiration date (year/month)
	warning, read enclosed documents
	read the directions