



FOODLAB

PURPOSE OF THE TEST

The chloride test enables to identify the presence of salted water in milk, an adulteration that cannot generally be detected with a standard microscopic test. The test also enables to quantify the concentration of salt in products like cheese, vegetable mashes and sauces, and in the processing and preservative liquids of milk derivatives. www.cdr-mediated.com/chloride-milk-dairy-products

REAGENTS

R1 (pre-vial in cuvette): Mercury thiocyanate.
R2 (in vial): Ferric nitrate.

METHODOLOGY

Test type: End Point.
Color reading at 505 nm.
Testing time: 5 minutes.
It is possible to carry out test sessions with several samples, up to a maximum of 14.
Calibration can be attained by aligning test and reference values.

TEST PRINCIPLE

Chloride ions react with mercury thiocyanate releasing thiocyanate ions. Thiocyanate ions react with Fe(III) forming an orange compound with an intensity that is directly proportional to the concentration of chlorides in the sample, when measured at 505 nm.

CDR's innovative method simplifies and accelerates the official procedure and enables to test milk as is without preventive treatment. The preparation of solid samples is simpler as compared to the official method (FIL-IDF 17A).

SAMPLE

Milk as is.
Aqueous solution as is.
Homogenized samples in diluted soda solution: cheese, sauces, vegetable mashes and brine.

KIT



Pre-vial disposable test tube.

KIT CODE	SAMPLE VOLUME	RANGE
*300104 (10 tests) *300100 (100 tests)	20 µL of milk as is	50 - 400 mg/dL
*300028 (10 tests) *300025 (100 tests)	5 µL of aqueous solutions	0,01 - 50 g/dL
*300204 (10 tests) *300200 (100 tests)	20 - 25 µL of homogenized samples	0,02 - 7 g%

The sample volume and linearity range vary according to the selected calibration curve.

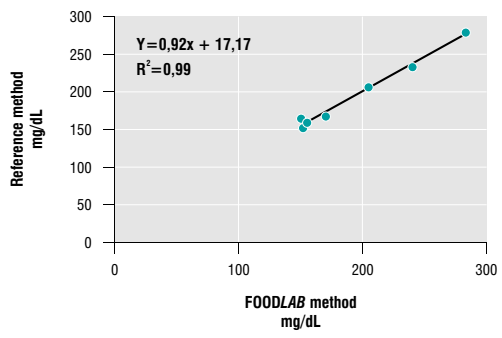




COMPARATIVE TESTS

Tests on whole samples were carried out by a SINAL accredited test laboratory in order to compare the reference method (Volhard's method) with FOODLAB's method.

FOODLAB method mg/dL	Reference method mg/dL
170	166
205	207
240	233
283	280
152	152
153	158
149	164



Tests on soft cheese samples were carried out by a leading milk manufacturer in order to compare the reference method (Mohr's method) with FOODLAB's method. The correlation was very good.

Sample	FOODLAB method %	Reference method %
Stracchino	0,67	0,76
Stracchino	0,62	0,79
Organic stracchino	0,92	0,97
Organic stracchino	0,88	0,73
Caciotta	1,42	1,43
Caciotta	1,93	1,93
Mozzarella	0,38	0,41
Mozzarella	0,28	0,2
Organic mozzarella	0,28	0,38

REPEATABILITY TESTS

Repeatability tests carried out on samples of milk, cheese and sauce.

Test	Whole milk mg/dL	Soft cheese %	Tomato sauce %
1	202	1,15	0,85
2	214	1,10	0,87
3	203	1,12	0,80
4	209	1,08	0,82
5	202	1,13	0,85
AVERAGE	206	1,116	0,84
DS	5,34	0,03	0,03
CV	2,6%	2,4%	3,3%

SUMMARIZED TABLE

SAMPLE	LINEARITY	ACCURACY	REPEATABILITY	CORRELATION COEFFICIENT	SENSITIVITY	TOTAL TESTING TIME	TEST/HOUR	UNIT OF MEASUREMENT
Milk	400 mg/dL	+/- 2%	CV <3%	R >0,99	50 mg/dL	5 min	70	mg/dL
Aqueous solutions	50 g/dL	+/- 5%	CV <6%	R >0,99	0,01 g/dL	5 min	70	g/dL
Cheese	7 g%	+/- 5%	CV <5%	R >0,97	0,2 %	5 min	70	%