CHLORIDE in milk

PRINCIPLE

Chloride ions react with Mercury thiocyanate and form thiocyanate ions. These ions form an orange colored complex when treated with a iron (III) nitrate solution; the intensity of the color, read at 505 nm, is proportional to the chloride concentration in the sample.

REAGENTS

Reagent R1 (ready in cuvette): Mercury (II) thiocyanate
Reagent R2: Fe(III) nitrate

REAGENTS PREPARATION

Reagent **R1** ready to use.
Reagent **R2** ready to use.

STABILITY

Reagents are stable up label expiration date. Store at room temperature.

SAMPLE

Whole, skim and pasteurized milk.
It's very important to mix well the milk bottle before sampling.

REACTION CONDITION (Edit)

Chan:	505 nm	Timer BLK:	5 min
K factor:		Timer SMP:	0 min
Q sign:	-	Temperature:	37°C
Q offset:		Mode:	END POINT
Decimal:	0	Sample:	20 µL
Anl/Std:	ANL (for testing) - STD (standardization)		

OPERATING PROCEDURE

Select the test 1: Chloride whole milk or 2: Chloride skim milk on well 2:
Chloride on DISPLAY appears Timeout 5 min

Put **20 µL** of sample into cuvette with reagent **R1,** mix IMMEDIATELY and put it into the incubation cell. Do it for every sample to test. A session of analysis permits to test until to 14 samples. At the end, press "**Enter**" for the countdown. 5 minutes later press:
ENTER on DISPLAY appears Insert blank

Mix well and put the cuvette, just incubated at 37°C (R1 + sample), into the reading cell with the green light. Press "**Enter**" immediately. Do it for every sample to test. Press "**STOP**" with the "arrow up" for reading the samples:
on DISPLAY appears Insert sample

Add **50 µL** of Reagent **R2** into the cuvette and mix well. Put the cuvette into the reading cell with the green light and press "**Enter**" immediately. Do it for every sample to test. At the end of the session of analysis, results appear as mg/dL of Chloride.

STANDARDIZATION PROCEDURE

Select in EDIT the function **"STD"**. Select the test 1: Chloride whole milk or 2: Chloride skim milk on well 2:
Chloride on DISPLAY appears Insert Conc. 1, 2, 3 ...
< 0.00>
Insert the standards concentration and confirm with "**Enter**". Minimum number accepted: 3 standards. At the end, press "**STOP**" for reading the standards. Follow the same procedure described for testing the samples. At the end, on the display appears the "K factor", the "q offset" and the "r^2" of the linear regression. Press "**MEMO**" : the values are stored in "Edit" in automatic mode.

LINEARITY

This method is linear up to 300 mg/dL. Samples with higher concentration should be diluted 1:2 with distilled water. Multiply result by diluted factor. The sensitivity is 50 mg/dL.

NORMAL VALUES

< 190 mg/dL

NOTES

1. **CAUTION!** It's very important to mix the milk bottle well before testing. The sample must be homogeneous.
2. Clin the tip with adsorbent paper without suck the milk inside.
3. Put the milk into the cuvette and mix it immediately.
4. Mix the cuvette before reading the blank and the sample.
5. After incubation, the stability of blank signal is 30 minutes and the stability of colour signal is 30 minutes.
6. The working solution can be opalescence. This is indifferent for the good execution of the test.
7. Avoid to contaminate the reagents and the sample with hands

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