GENESIS

Instructions For Use

Chloride (Single Reagent)

Cat no.	size
1309 101	2*25
1309 102	4*25

INTENDED USE

Quantitative determination of chloride ion in human serum and urine .

DIAGNOSTIC CHARACTERISTICS

It is important clinically the determination of chloride due regulation of osmotic pressure of extra cellular fluid and to its significant role in acidbase balance. Increases in chloride ion concentration may be found in severe dehydratation, excessive intake of chloride, severe renal tubular damage and in patients with cystic fibrosis. Decrease in chloride ion concentration may be found in metabolic acidosis, loss from prolonged vomiting and chronic pyelonephritis. Clinical diagnosis should not be made on a single test result; it should integrate clinical and other laboratory data.

PRINCIPLE OF THE METHOD

Thiocyanate-Hg Colorimetric method .

The quantitative displacement of thiocyanate by chloride from mercuric thiocyanate and subsequent formation of a red ferric thiocyanate complex is measured colorimetrically:

$2\ Cl^- + Hg(SCN)_2 \rightarrow HgCl_2 + 2\ SCN$

$SCN^- + Fe^{+++} \rightarrow FeSCN^{++}$

The intensity of the color formed is proportional to the chloride ion concentration in the sample

COMPOSITION

Chloride Reagent	Mercuric thiocyanate	4.4 mmol/L
	Mercuric nitrate	2.2 mmol/L
	Nitric acid	49 mmol/L
	Ferric nitrate	44 mmol/L
Standard (Std.)		100 mmol/L

STORAGE.

Store at 2-8ºC.

Reagents and Standard are stable until the expiry date shown on the Vial label when stored tightly closed and if contaminations are prevented during their use.

ADDITIONAL EQUIPMENT

− Analyzer, spectrophotometer able to read at 500 nm

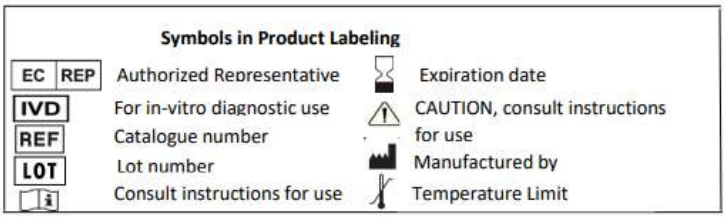
SPECIMEN

1. Serum or plasma free of hemolysis and separated from cells as rapidly as possible

2.ion Chloride in serum is stable 1 week at room temperature (15-25ºC), in refrigerator (2-8ºC) or frozen (-20ºC) temperatures.

3.Anticoagulants other than heparin should not be used they will interfere with results.

4. Urine : Collect 24-hour urine specimen in chloride free containers. Dilute a sample 1/2 in distilled water. Mix. Multiply results by 2 (dilution factor)



PROCEDURE

1. Pipette into labeled test tubes:

	Blank	Standard	Sample
Reagent	1.0 mL	1.0 mL	1.0 mL
Standard (S)	-	10 µL	-
Sample	-	-	10 µL

2. Mix thoroughly and incubate the tubes for **5 minutes** at room temperature.

3. Measure the absorbance (A) of the Standard and Sample at 500 nm against the blank.

CALCULATIONS

The concentration in the sample is calculated using the following general formula:

$$\frac{\text{A Sample}}{\text{A Standard}} \times 100 = \text{mmol/L}$$

REFERENCE VALUES

Serum	95 - 115 mmol/L
Urine:	110 - 250 mmol/24h

QUALITY CONTROL

It is recommended to use the Control Serum level I and II to verify the performance of the measurement procedure.

Each laboratory should establish its own internal Quality Control .

METROLOGICAL CHARACTERISTICS

Detection limit 1 mmol/L

Linearity limit: 190 mmol/L

For higher values dilute sample **1/2** with distilled water and repeat measurement.

Precision

− **Repeatability (within run):**

Mean Concentration	cv	n
84 mmol/L	1.7 %	20
116 mmol/L	1.4 %	20

− **Reproducibility (run to run):**

Mean Concentration	cv	n
83.5 mmol/L	2.2 %	20
117.2 mmol/L	1.6 %	20

INTERFERENCES

Interferences: Bromide and Fluoride They can cause falsely elevated chloride values.

BIBLIOGRAPHY

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