

BioMed-Chloride



REF: CL132100 (2x50)
CL1322004 (2x100)

INTENDED FOR USE:

For the quantitative determination of chloride in serum and urine .

Principle :

Chloride ions react with mercury ions releasing an equivalent quantity of thiocyanate ions , which form with trivalent ions a red colour ion-thiocyanate complex .

The intensity of the colour is proportional to the chloride concentrations in the sample.

SPECIMEN :

Non hemolized fresh serum, plasma (heparin) , CSF . Urine 24/h diluted 1:2 with distilled water and acidified with 2/3 drops of HCl 23%.

Notes:

Serum should be separated from the clot as soon as possible chloride in serum are reported stable up to 24 hours at room temperature and up to 3 months if stored in refrigerator at -20°C and protected against evaporation. Sweat and saliva contain chloride. Do not pipette by mouth and avoid any hand contact with tubes and droppers .

Shake and bring the samples at room temperature (+15-25°C) before using.

REAGENTS COMPOSITION:

Reagent(2) Cl Liquid	Mercuric thiocyanate Mercuric chloride Iron Ntrate Nitric Acid	< 0.1% < 0.1% 20 mmol/L 25 mmol/L
Standard (1) Cl	Sodium chloride	100 mEq/L (584 mg/dL)

PACKAGE : Collection & Storage .

Store at (+15-25°C).

Stable until the expiration date reported upon the package.

After the unsealing and the taking of the reagent , it is advised to close up the bottle immediately in order to avoid evaporation , direct light exposure and bacteric contamination .

PRECAUTION / DANGER SYMBOLES

Avoid pipette by mouth .

The preparation , according to current regulation . is classified as not dangerous.

The total concentration of non active components (preservatives , detergents ,stabilizers) is below the minimum required for citation .

Anyway handle with care , avoid ingestion , avoid contact with eyes , skin and mucous membranes

The samples must be handle as potentially infected from HIV or Hepatitis .

REAGENT PREPARATION AND STABILITY :

Ready to use liquid reagent, Stable until the date reported on the label .

The Reagent is limpid and colourless .

REQUIRED MATERIALS NOT PROVIDED :

General Laboratory Equipment and instrumentations .

PROCEDURE :

Wavelength : 492 nm (450-500)
Optical path : 1 cm
Temperature : +25/30/37°C
Reading : Against blank reagent
Assay tipe : End Point
Sample/Reagent/Ratio : 1/100

Pipetting in cuvette :

	BLANK	STANDARD	SAMPLE
Reagent (2)	1000 µL	1000 µL	1000 µL
Standard		10 µL	
Sample			10 µL

Mix, incubate for 5 min at 37°C or (+15-25°C) ; Read sample and standard extinction .
Colour is stable at least 15 min at room temperature.

Volumes can be proportionally modified.

This methodology describes the manual procedure to use the kit.

For automated procedure, ask for specific application.

Calibration with watery standard may cause a systematic error when using automatic instrumentations.

CALCULATION:

Serum:

$$\text{Chloride mEq/L} = \frac{\text{(A) Sample}}{\text{(A)Standard}} \times 100 \text{ (standard value)}$$

Urine 24/h:

$$\text{Cl mEq/L} = \frac{\text{(A) Sample}}{\text{(A) Standard}} \times 100 \times 2(\text{Dil , Faact.}) \times \text{Vol. Urine 24/h (dL)}$$

Conversion factor from mEq/L to mg/dL

EXPECTED VALUES :

Serum :	98-110 mEq/L	573-643 mg/dL
Urine 24/h :	160-250 mEq/L	935-1461 mg/dL
Liquor(CSF) :	119-130 mEq/L	695-760 mg/dL
Sweat :	4-60 mEq/L	23.4-351 mg/dL

the above mentioned values are to be considered as a reference.

It is strongly recommended that each laboratory establish its own normal range

WASTE DISPOSAL :

The disposal of the product must be in accordance with local regulation concerning waste disposal .

QUALITY CONTROL :

It is recommended to execute the quality control at every kit utilization to verify that values are within the reference range indicated by the methodology.

PERFORMANCE :	
MEASURE INTERVAL / LINEARITY :	3.25-170 mEq/L
DETECTION(2DS):	3.25 mEq/L
SENSITIVITY :	1 mEq/L = 0.00293A a 492 nm

INTRA-ASSAY PRECISION : n=20

LOW LEVEL	M = 45.77 mEq/L	C.V = 1.86%
MEDIUM LEVEL	M = 82.37 mEq/L	C.V = 1.48%
HIGH LEVEL	M = 110.59 mEq/L	C.V = 3.82%

INTER-ASSAY PRECISION : n=20

LOW LEVEL	M = 45.82 mEq/L	C.V = 0.11%
MEDIUM LEVEL	M = 79.92 mEq/L	C.V = 3.02%
HIGH LEVEL	M = 108.46 mEq/L	C.V = 1.94%
CORELATION	r = 0.991	n= 60
LIN. REGRESSION	y = 1.01 x + 0.11	n= 60

INTERFERENCE:

Interferences are negligible up to :			
Hemoglobin	500 mg/dL	Albumin	150 g/L
Triglycerides	6000 mg/dL	Bilirubin	120 mg/dL

METHOD LIMITATIONS:

For concentration higher than 170 mEq/L, repeat the measure on a sample diluted 1:2 with saline solution e multiply the result x 2 .

Bromides and Fluorides may cause falsely high chloride level.

Anticoagulants such as oxalates and EDTA cannot be used .

Lipemic or icteric serums do not interfere with reaction .

Highly hemolyzed serums may cause falsely high chloride level .

Prepare a blank sample with distilled water .

for a thorough evaluation of the interfering substances , consult: Young , D . S , et al , Clin , Chem , 21:1D (1975) .

REFERENCES :

Feldikamp C . DS. Et al , : Zklin , Biochem , 12 ,146 ,(1974) .

Fried R et al : Z . K lin , Biochem , 10 , 280 (1972) .