

**Quantitative determination of Chloride in serum/plasma
Only for *In Vitro* Diagnostic use**

ORDER INFORMATION

REF	Cont.
CHLO 100	2 X 50 ML
CHLOM 50	50 X 1 ML
CHLO 200	2 X 100 ml

CLINICAL SIGNIFICANCE

It is important clinically the determination of chloride due regulation of osmotic pressure of extra cellular fluid and to its significant role in acid-base balance. Increases in chloride ion concentration may be found in severe dehydration, 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

Chloride ions react with mercurous thiocyanate to form mercury per chlorate and thiocyanate. Thiocyanate forms a red complex with ferric ions in the presence of nitric acid.

REAGENT COMPONENT

Reagent I : Chloride reagent
Chloride standard : 100 mEq/L

SAMPLE COLLECTION AND PRESERVATION

Serum: unhemolysed
Plasma: heparinised
CSF, sweat and other body fluids. oxalate or EDTA are not acceptable they will interfere with results.
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).
Stability of the sample: 1 week at room temperature (15- 30°C), in refrigerator (2-8°C) or frozen (-20°C) temperatures.

REAGENT PREPARATION

All reagents are ready to use.

REAGENT STORAGE AND STABILITY

When stored at Room temperature reagent is stable until the expiration date stated on the bottle and kit box label

NOTES

1. Proceed carefully with this product because due to its nature it can get contaminated easily.
2. It is recommended to use disposable material. If glassware is used the Contamination of glassware with calcium will affect the test. Use H₂SO₄ - K₂Cr₂O₇ Solution washed glassware or plastic tubes.
3. Most of the detergents and water softening products used in the laboratories contains chelating agents. A defective rinsing will invalidate the procedure.
4. Use clean disposable pipette tips for its dispensation.
5. CHLOM 50 are specially treated monovials with 1ml pre-dispensed reagent. Just add 10 µl sample / std., Incubate at R. T. for 5 min. & aspirate. Use the same programme as below.

AUTOMATED PARAMETERS	
Wavelength	505 nm
Cuvette	1 cm
Reaction Temperature	Room Temperature
Measurement	Against reagent blank
Reaction Type	End point
Sample Volume	10 µl
Reagent Volume	1000 µl
Incubation	5 minutes
Blank Absorbance limit	≤ 0.3
Low Normal	95 mEq/l
High Normal	115 mEq/l
Linearity	130 mEq/l

MANUAL PROCEDURE

PIPETTE INTO TEST TUBES

	BLANK	STD	SAMPLE
SAMPLE	-	-	10 µl
STANDARD	-	10 µl	-
REAGENT	1000 µl	1000 µl	1000 µl

Mix & Incubate for 5 min. at RT. Measure absorbance of Sample (AT) and Standard (AS) against Reagent Blank at 505 nm. The colour is stable for 30 min. at R.T.

CALCULATION

Chloride (mEq/l)	= AT/AS x Conc of Standard
Chloride in Urine (mEq/l)	= AT/AS x Conc of Standard x2

LINEARITY

The method is linear upto a concentration of 130 mEq/l.

REFERENCE VALUES

Serum or plasma: 95 – 115 mmol/L	CSF: 95 - 110 mmol/L
Urine : 110 - 250 mmol/24h	Sweat: Up to 60 mmol/L

QUALITY CONTROL

It is recommended to run a normal and a pathological control serum which is commercially available to verify the performance of the measured procedure. The value of controls should fall within the established limit.

BIBLIOGRAPHY

Tietz N.W., White, W.L. Mosby, CO St.Louis, P.Young.D.S, Henry, R.J., Chem. (1964), 10, 533.