

**Reagent kit for quantitative estimation of Chloride in Serum.**

**DIAGNOSTICS SIGNIFICATION:**

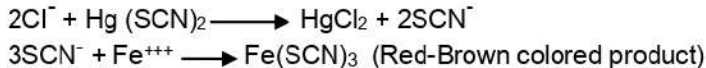
Chloride is a major extracellular anion. It plays a significant role in maintaining water and electrolyte balance in the extra cellular compartment.

Chloride may be lost through sweating and urination. Chloride concentration in body is very well controlled. The losses are made up partly by dietary intake and partly by reabsorption of chloride ions. The excretion in sweating and reabsorption mineral metabolism. In conditions like, chronic pyelonephritis, diabetic acidosis, renal failure and prolonged vomiting due to any cause there is a loss of chloride ions and hence serum chloride level may decrease.

High serum Chloride values may be observed in dehydration, congestive heart failure, renal tubular pathology etc.

**PRINCIPLE:**

Chloride ions in the sample react with Mercuric Thiocyanate to form Mercuric Chloride, an undissociated salt and free Thiocyanate ions. These free Thiocyanate ions react with Ferric ions in the reagent to form red-brown colored Ferric Thiocyanate. The absorbance of Ferric Thiocyanate at 505 nm is proportional to the concentration of chloride in the sample.



**SPECIMEN COLLECTION:**

Fresh, clear serum without hemolysis is necessary.

**KIT PRESENTATION:**

Pack Size	25 Test	50 Test	2 X 50 ml
Chloride Reagent	25 X 1 ml	50 X 1 ml	2 X 50 ml
Chloride Standard	1 X 01 ml	1 X 01 ml	1 X 02 ml

**PRECAUTION:**

All the glassware should be thoroughly washed and made chloride free. Finally, these should be thoroughly rinsed with glass distilled water and dried completely.

**PREPARATION OF WORKING REAGENT:**

Chloride Reagent is Ready-to-use.

**REAGENT STORAGE AND STABILITY:**

Chloride Reagent and Standard are stable at RT until the expiry date indicated on the label.

**ASSAY PARAMETER:**

Reaction	: End point	Sample Volume	: 10 µl
Wavelength	: 505 nm (480-510)	Reagent Volume	: 1.0 ml
Zero Setting	: Reagent Blank	Standard Conc.	: 100 mEq/L
Incub.Temp.	: RT	Linearity	: 150 mEq/L
Incub Time	: 2 minutes	Unit	: mEq/L

**PROCEDURE:**

Pipette into TT	Blank	Standard	Test
Chloride Reagent	1.0 ml	1.0 ml	1.0 ml
Chloride Std (100 mEq/L)	--	10 µl	--
Sample (Test)	--	--	10 µl

Mix and incubate at RT for 2 minutes. Read absorbance of Standard (S) and Test (T) after 2 minutes against reagent blank at 505 nm (480-510 nm or with Blue-Green filter).

**STABILITY OF FINAL REACTION MIXTURE:**

The color of the final reaction mixture is stable for 30 minutes when protected from Light and store at cold place.

**CALCULATION:**

Chloride concentration (mEq/L) =  $\text{Abs T} \div \text{Abs S} \times 100$

Unit Conversion: mEq/L = mmol/L

**NORMAL VALUES:**

Serum Chloride : 98 to 107 mEq/L

**LINEARITY:**

The procedure is linear up to 150 mEq/L. If values exceed this limit, dilute the sample suitably with **Pure Distilled Water** and repeat the assay. Apply dilution factor to obtain the test results.

**REFERENCE:**

1. Tietz NW (Ed) Textbook of Clinical Chemistry) WB Saunders 1986: 1350.
2. Young DS, et al, Clin Chem 1975:21:272DD.

IFU No.: 012/00 Rev. No.: 00/120723

