

# CHLORIDE (MTC)

## SAFETY PRECAUTIONS AND WARNINGS:

This reagent is for *In vitro* diagnostic use only.

## INTENDED USE:

This reagent kit is intended for "*in vitro*" quantitative determination of CHLORIDE concentration in serum, serum, urine and cerebrospinal fluid.

## CLINICAL SIGNIFICANCE:

Chloride ion represents that anion of the salt and water household which is present in the highest concentrations in the body. It is primarily found as NaCl in the extracellular compartment and as HCl in the gastrointestinal tract. Low chloride concentrations are associated with severe vomiting, diarrhoea, colitis ulcerosa, diabetic acidosis, Addison's disease. Decreased chloride concentrations are found also in cases when drugs that need chloride ions for their absorption are taken for prolonged time. Increased levels are observed in cases of dehydration, congestive heart failure, Cushing's syndrome, hyperventilation, anaemia, nephritis and renal obstruction.

## PRINCIPE:

Chloride ion in acidic environment in presence of ferric nitrate forms a colored complex with mercuric thiocyanate. Intensity of the developed colour is proportional to the chloride ion concentration in the sample.

## REAGENT COMPOSITION:

Reagent 1: Chloride Reagent  
 Chloride standard: 100 mEq/L

## MATERIALS REQUIRED BUT NOT PROVIDED:

- Clean & Dry Glassware.
- Micropipettes & Tips.
- Colorimeter or Bio-Chemistry Analyzer.

## SAMPLES:

Serum free of hemolysis, urine, cerebrospinal fluid.

## STABILITY OF REAGENT:

When Stored tightly closed at 2 to 8°C temperature protected from light and contaminations prevented during their use; reagents are stable up to the expiry date stated on the label.

## WORKING REAGENT:

The Reagent is ready for use.

## GENERAL SYSTEM PARAMETERS:

Reaction type	End Point (Increasing)
Wave length	510 nm
Light Path	1 Cm
Reaction Temperature	37°C
Blank/Zero Setting	Reagent
Reagent Volume	1 ml
Sample Volume	10 µl
Incubation Time	1 Minutes
Standard Concentration	100 mEq/L
Low Normal	98 mEq/L
High Normal	104 mEq/L
Linearity	120 mEq/L

## ASSAY PROCEDURE:

	Blank	Standard	Sample
Reagent	1ml	1ml	1ml
Standard		10 µl	
Sample			10 µl

Mix and read the optical density (A) after a 1-minute incubation at 37°C.

## CALCULATIONS:

$$\text{Calcium Conc. (mEq/L)} = \frac{\text{OD of Sample}}{\text{OD of Standard}} \times \text{Conc. of Standard}$$

## LINEARITY:

Reagent is Linear up to 120 mEq/L.  
 Dilute the sample appropriately and re-assay if Chloride concentration exceeds 120 mEq/L. multiply result with dilution factor.

## REFERENCE NORMAL VALUE:

98-104 mEq/L

## QUALITY CONTROL:

For accuracy it is necessary to run known controls with every assay.

## LIMITATION & PRECAUTIONS:

1. Storage conditions as mentioned on the kit to be adhered.
2. Do not freeze or expose the reagents to higher temperature as it may affect the performance of the kit.
3. Before the assay bring all the reagents to room temperature.
4. Avoid contamination of the reagent during assay process.
5. Use clean glassware free from dust or debris.

## BIBLIOGRAPHY:

Schoenfeld, R. G., et al.: Clin. Chem. 10; 533, (1964)