



SODIUM

(Colorimetric Method)
Liquid Reagent

INTENDED USE:

This reagent kit is used for *in-vitro* quantitative determination of Sodium in human serum.

TEST PRINCIPLE:

The method is based on reaction of sodium with a selective Chromogen producing a chromophore whose absorbance varies directly as the concentration of sodium in the test specimen.

KIT CONTENTS:

Reagent 1: Sodium Reagent

Reagent 2: Sodium Standard (150 mmol/L)

Product Insert : 01 No.

PREPARATION OF THE WORKING REAGENT:

All the reagents are ready to use.

STORAGE AND STABILITY:

All the reagent should be stored in Room Temperature and are stable till the expiry date mentioned in the labels. Protect from direct Sunlight.

SPECIMEN COLLECTION AND STORAGE:

Unhemolysed serum is recommended.

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. After use store the kit contents immediately as 2-8°C.
5. Avoid contamination of the reagents during assay process.
6. Use clean glassware and plastic ware free from dust or debris.

TEST PRECEDURE (Automated): 📖

Refer to specific instrument application instructions.

TEST PRECEDURE (Manual): 📖

Labelled tubes Blank (B), Standard (S) and Test (T) on the pre-dispensed reagent-1 tubes as follows:

Wavelength : 630 nm

Temperature : 37°C

Cuvette : 1 cm

Pipette into Pre-dispensed Reagent-1	Blank	Standard	Test
Sodium Reagent-1	Pre-dispensed	Pre-dispensed	Pre-dispensed
Standard	-	10 µl	-
Sample	-	-	10 µl

Mix well and incubate for 5 minutes at 37°C.

Read the absorbance of Standard (A_s), and Tests (A_t) against Blank (A_b) at 630 nm.

CALCULATIONS:

Sodium in mmol/L

$$\frac{\text{Abs of } A_t - A_b}{\text{Abs of } A_s - A_b} \times 150 \text{ (Conc. of Standard)}$$

NORMAL VALUES*:

135 – 155 mmol/L

*It is recommended that each laboratory should establish its own range representing its patient population.

PERFORMANCE:

Linearity: 180 mmol/L

CLINICAL SIGNIFICANCE:

Sodium is clinically significant because it is an essential electrolyte vital for maintaining fluid balance, regulating acid-base balance, and supporting nerve and muscle function, including the heart. Clinically, abnormal sodium levels (hyponatremia, or low sodium; hypernatremia, or high sodium) can lead to serious health problems such as high blood pressure, heart disease, stroke, and neurological issues, with severe hyponatremia causing confusion, seizures, coma, and even death.

AUTOMATED APPLICATIONS:

Sodium reagent can be used in several automated analyzers. Application sheets for use on specific semiautomatic/automatic analyzers are available on request.

Input parameters for semiautomatic/automatic analyzers are given below:

INPUT PARAMETERS	VALUES
Type of reaction	End Point
Wavelength	630 nm
Incubation time	5 minutes
Standard Concentration	150 mmol/L
Units	mmol/L
Upper Normal Value	155 mmol/L
Lower Normal Value	135 mmol/L
Linearity	180 mmol/L
Reagent volume	1.0 ml
Sample/Standard volume	10 µl
Reaction Slope	Increasing

QUALITY CONTROL:

For accuracy, it is necessary to run known serum controls with each assay.

REFERENCES:

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