

# POTASSIUM

METHOD – COLORIMETRIC  
PRODUCT CODE – LP02



## INSTRUCTIONS FOR USE

**INTENDED USE: Test for quantitative determination of Potassium ion in human serum and plasma samples.**

### SUMMARY

Potassium (K+) is the major positive ion within cells and is particularly important for maintaining the electric charge on the cell membrane. This charge allows nerves and muscles to communicate and is necessary for transporting nutrients into cells and waste products out of the cell. The concentration of potassium inside cells is about 30 times that in the blood and other fluids outside of cells. Potassium levels are mainly controlled by the steroid hormone aldosterone. Aldosterone is secreted from the adrenal gland when levels of potassium increase. Aldosterone, in turn, causes the body to rid itself of the excess potassium. Metabolic acidosis (for example, caused by uncontrolled diabetes) or alkalosis (for example, caused by excess vomiting) can affect blood potassium. In normal people, taking potassium supplements or potassium-containing drugs is of no consequences, because the kidneys efficiently dispose of excess potassium.

### PRINCIPLE

Potassium ions in a protein-free alkaline medium react with sodium tetraphenylboron to produce a finely dispersed turbid suspension of potassium tetraphenylboron. The turbidity produced is proportional to the potassium concentration and read photometrically.

### REAGENT COMPOSITION

Reagent I - Potassium Reagent  
Standard - Potassium Standard (5 mEq/L).

### PREPARATION, STORAGE & STABILITY

The reagent provided in the kit is in **single ready-to-use** format. The reagents are stable until the expiry date as indicated on the bottle label at room temperature (15-30 °C).

### SPECIMEN COLLECTION & PRESERVATION

Freshly drawn non haemolysed serum or heparinised plasma is the specimen of choice. Serum and plasma samples are stable for at least 24 HRS at room temperature (18-25 °C) and for at least two weeks at 2-8 °C.

### TEST PARAMETERS

Name	Potassium	Reagent 1 Vol	1000 µl
Reaction Type	End Point	Sample Volume	20 µl
Wavelength Primary	630 nm	Incubation Temp.	R.T.
Flow Cell Temp.	37 °C	Incubation Time	5 mins
Blank setting	Reagent	Standard Conc.	5 mEq/L
Blank Abs Limit	< 0.100	Linearity	7 mEq/L

### ASSAY PROCEDURE

	Blank	Standard	Test
Reagent	1000 µl	1000 µl	1000 µl
Standard	NA	20 µl	NA
Sample	NA	NA	20 µl

Mix the reagent and sample/standard in the above mentioned ratio.

Incubate the assay mixture for 5 mins at R.T. and record the absorbance at 630 nm.

### CALCULATION

$$\text{Potassium (mEq/L)} = \frac{\text{Abs. of sample} \times \text{Conc of Standard}}{\text{Abs. of standard}}$$

### REFERENCE VALUES FOR NORMAL PEOPLE

Serum - 3.6 to 5.5 mEq/L.

Plasma - 4.0 to 4.8 mEq/L.

### NOTES

1. K-p CAL: Proceed carefully with this product because due its nature it can get contaminated easily.
2. As red blood cells contain about 25 times the amount of potassium, they have to be separated from the serum within one hour after blood collection. Otherwise, falsely elevated potassium concentrations will be found.
3. Traces of detergents produce turbidity which leads to falsely elevated potassium concentrations. They therefore have to be avoided.
4. Calibration with the aqueous standard may cause a systematic error in automatic procedures. In these cases, it is recommended to use a serum Calibrator.

### QUALITY CONTROL

Inclusion of a normal value and abnormal value control serum in each test run ensures optimum quality control. Consistent use of same type and methodology of control serum provides between run precision and accuracy data for Potassium. We recommend to produce such data on daily basis for greater accuracy in assay system which include reagents, instrument, apparatus and operator.

### BIBLIOGRAPHY

1. Hillmann, G., Beyer, G., Z. Klin. Chem. Klin. Biochem. 5, 93 (1967).
2. Henry, R.J., Clin. Chem., Harper & Row, New York, Sec. Edit. 646 (1974).
3. Tietz, N.W., Fundamentals of Clinical Chemistry, Saunders, Philadelphia, Sec. Edit., 876 (1976).

### SYMBOLS:



Read Instruction for use



In Vitro Diagnostic Use Only



Manufactured by



Expiry Date



Storage Temperature

ANAMOL LABORATORIES PVT. LTD.

61, Genesis Industrial Township, Kolgaon,  
Palghar - 401 404, India.

Customer Care & WhatsApp: +91-9823388695.

admin@anamollabs.com

exports@anamollabs.com

www.anamollabs.com

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