

POTASSIUM (2-8°C)

(TETRAPHENYLBORON SINGLE REAGENT)

CATALOGUE NUMBER	KIT SIZE (ML)
MPRKTB1	2x25ml / 1x5ml
MPRKTB2	2x50ml / 1x5ml

Intended Use:

For *In Vitro* Diagnostic Use Only

Potassium single reagent is intended for the quantitative determination of Potassium in serum or plasma.

The product is intended for use by qualified laboratory personnel only.

Clinical Significance:

Potassium is an intracellular cation, helping in the communication between nerves and muscles. It helps in the movement of nutrients into the cells. Low levels of potassium can lead to irregular heartbeat and high levels can cause decreased heart muscle activity.

Test Principle:

Sodium tetraphenylboron reacts with potassium in the sample to produce a fine turbidity of potassium tetraphenylboron. The intensity of turbidity is directly proportional to the concentration of potassium in the sample.

Reagent Composition

REAGENT	COMPONENT	CONCENTRATION
Potassium TPB Reagent	Sodium	0.2 mol/l
	Tetraphenylboron	
	Sodium Hydroxide	2.2 mol/l
	Preservative	0.1%
Potassium Standard	Potassium	5.0 mmol/l

Reagent Preparation and Stability:

R1: Potassium TPB reagent: Ready to use

R2: Potassium Standard: Ready to use

R1 and R2 are stable to the expiry date stated when stored unopened at 2-8°C. Avoid Direct Sunlight.

Exercise the normal precautions associated with the handling of laboratory reagents and dispose of carefully according to local guidelines.

Sample / Sample Preparation / Sample Stability:

Serum or Plasma (Heparin)

Serum Potassium is stable in the sample for 24 hours when stored at 4°C.

For longer storage up to 2 weeks, store at 2-8°C.

Assay Procedure:

WAVELENGTH	630nm (620-650nm)
TEMPERATURE	15 - 30°C
CUVETTE	1cm Path Length
BLANK	Reagent Blank

	Blank	Standard	Sample
Sample	-	-	20 µl
Standard	-	20 µl	-
TPB Reagent	1000 µl	1000 µl	1000 µl
Mix and incubate 5 minutes at assay temperature. Read absorbance of Sample/Standard against the Reagent Blank.			

Calculation:

Potassium Concentration (mmol/l) = $\frac{\Delta \text{Abs Sample}}{\Delta \text{Abs Standard}} \times \text{Conc of Standard}$

Performance Characteristics:

Measuring range:

0.1 – 7.0 mmol/l

Intra-Assay Precision:

Sample	Mean (mmol/l)	SD (mmol/l)	CV %
Pool 1	4.23	0.08	1.89
Pool 2	6.32	0.13	2.05

Inter-Assay Precision:

Sample	Mean (mmol/l)	SD (mmol/l)	CV %
Pool 1	4.32	0.09	2.058
Pool 2	6.41	0.14	2.18

Reference Range:

Serum	3.60 – 5.50 mmol/l
Plasma	4.00 – 4.80 mmol/l

Each laboratory should establish its own mean reference range according to the population.

Quality Control and Calibration Material:

It is recommended that a laboratory uses reference control sera to verify the reagent performance. Results obtained should fall within the specified ranges. If results fall outside these ranges actions should be taken in line with the laboratory's internal quality procedures.

Prestige recommend the following controls

Human Assayed Control Normal: QCCHAN1 / QCCHAN2 / QCCHAN3

Human Assayed Control Elevated: QCCHAE1 / QCCHAE2 / QCCHAE3

Notes:

- Separate red cells from the serum within one to two hours after collection. Red cells contain potassium in very high concentrations and immediate separation will prevent falsely elevated results.

References:

1. Hillman G, Beyer G, Z. Clin Biochem. 5, 93.
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 Edition.1976.

REF	Catalog number	LOT	Temperature limitation
IF	Consult instructions for use	LOT	Batch code
IVD	In vitro diagnostic medical device	LOT	Use by
MA	Manufacturer		