



PRINCIPLE

In organic phosphorus reacts with ammonium molybdate in an acid medium to form a phosphomolybdate complex that absorbs light at 340nm. The absorbance at this wavelength is directly proportional to the amount of inorganic phosphorus present in the sample.

In organic + H₂SO₄ + Ammonium → Unreduced Phosphomolybdate Phosphorus Molybdate Complex.

CLINICAL SIGNIFICANCE

Phosphorus is present in all body cells as a component of nucleic acids, phospholipids and phosphoproteins. Phosphorus is essential for intracellular storage and conversion of energy (ATP, creatine phosphate) and participates in carbohydrates metabolism. In the blood phosphorus is present as a mixture of inorganic phosphates HPO₄⁻ and H₂PO₄⁻. Besides phosphorus and calcium constitute mineral portion of bone. Continuous flux of phosphorus in organism is controlled by parathyroid hormone (PTH), vitamin D and calcitonin. Phosphorus serum level abnormalities are caused usually by disorders of vitamin D metabolism or parathyroid and kidney diseases.

SAMPLE COLLECTION & STORAGE

1. Unhemolysed serum is specimen of choice.
2. Plasma should not be used since anticoagulants may produce falsely Low values .12
3. Hemolysed sample may give falsely high values.
4. Serum should be removed from the red cell clot as soon as possible.
5. Serum inorganic phosphorus is stable for one week refrigerated and for Three weeks. frozen .13, 14

PRECAUTIONS

1. This reagent IS for in vitro diagnostic use only
2. This reagent is an acid and t8 caustic. Avoid contact with skin. Flush With plenty of water if contact occurs. DO NOT PIPETTE BY MOUTH.

KIT CONTENTS	50x I ML	10x1 ML
Phosphorus Reagent	10 x 1 ml	
Standard (5 mg/dl)	1 ml	

REAGENTS PREPARATION

All Reagent are ready to use.

REAGENT STORAGE

All reagents are to be Stored at 2-8⁰ C and stable till expiry date mentioned on the table.

SYSTEM PARAMETERS

Reaction type	:	End point
Reagent volume	:	1000 U/I
Sample volume	:	10 µl
Wave length	:	340 nm
Standard Conc	:	5
Flow cell temp	:	37 ⁰ C
Units	:	mg / dl
Low normal	:	2.0
High normal	:	5.5
Incubation	:	5 min
Blank	:	Reagent
Linearity	:	25mg/dl

PROCEDURE

The reagent may be used both for manual assays and in several automatic analyzers.

Pipette in to the tubes:

	Blank (B)	Standard(S)	Test (T)
Phosphorus reagent	1000 µl	1000 µl	1000 µl
Standard	-	10 µl	-
Sample	-	-	10 µl

Mix well and keep at 37°C for 5 minutes then read at 340 nm

CALCULATION

Abs. =Absorbance

(Abs of Test/Abs. of Standard) x Concentration of Inorganic Phosphorus mg/dl

Example:

Abs. of Unknown = 0.20; Abs. of Standard = 0.29;

Conc. of Standard=5mg/dl

Then $(0.20/0.29) \times 5 = 3.4$ mg/dl

LINEARITY

The Linearity of this Kit up to 25 mg / dl

NORMAL RANGE

Serum-Plasma	mg/dl	mmol/l
Age: 0-10d	4.5-9.0	1.45-2.91
10d-24 mo	4.5-6.7	1.45-2.16
24 mo – 12y	4.5-5.5	1.45-1.78
12-60y	2.1 -5.5	0.61-1.78
>60 y males	2.3-3.7	0.74-1.20
>60 y males	2.8-4.1	0.90-1.32
24 – hours urine	g/24h	Mmol/24h
	0.4-1.3	12.9-42.0

it is recommended that each laboratory should establish their own normal range

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