

## Overview

### Useful For

Evaluation of hypo- or hyper-phosphatemic states

Evaluation of patients with nephrolithiasis

### Special Instructions

- [Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens](#)

### Method Name

Molybdic Acid

### NY State Available

Yes

## Specimen

### Specimen Type

Urine

### Necessary Information

[24-Hour volume \(in milliliters\) is required.](#)

### Specimen Required

**Supplies:** Sarstedt 5 mL Aliquot Tube (T914)

**Collection Container/Tube:** 24-Hour graduated urine container with no metal cap or glued insert

**Submission Container/Tube:** Plastic, 5 mL tube or a clean, plastic aliquot container with no metal cap or glued insert

**Specimen Volume:** 4 mL

#### Collection Instructions:

1. Collect urine for 24 hours.
2. Refrigerate specimen within 4 hours of completion of 24-hour collection.

**Additional Information:** See [Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens](#) for multiple collections.

### Forms

If not ordering electronically, complete, print, and send a [Renal Diagnostics Test Request](#) (T830) with the specimen.

### Urine Preservative Collection Options

**Note:** The addition of preservative or application of temperature controls **must occur within 4 hours of completion** of the collection.

Ambient	OK
Refrigerate	Preferred
Frozen	OK
50% Acetic Acid	OK
Boric Acid	OK
Diazolidinyl Urea	OK
6M Hydrochloric Acid	OK
6M Nitric Acid	No
Sodium Carbonate	No
Thymol	OK
Toluene	No

### Specimen Minimum Volume

1 mL

### Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

### Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	14 days	
	Ambient	7 days	
	Frozen	30 days	

### Clinical & Interpretive

#### Clinical Information

Approximately 80% of filtered phosphorus is reabsorbed by renal proximal tubule cells. The regulation of urinary phosphorus excretion is principally dependent on regulation of proximal tubule phosphorus reabsorption. A variety of factors influence renal tubular phosphate reabsorption and consequent urine excretion. Factors that increase urinary phosphorus excretion include high phosphorus diet, parathyroid hormone, extracellular volume expansion, low dietary potassium intake, and proximal tubule defects (eg, Fanconi Syndrome, X-linked hypophosphatemic Rickets, tumor-induced osteomalacia). Factors that decrease, or are associated with decreases in, urinary phosphorus excretion include low dietary phosphorus intake, insulin, high dietary potassium intake, and decreased intestinal absorption of phosphorus (eg, phosphate-binding antacids, vitamin D deficiency, malabsorption states).

A renal leak of phosphate has also been implicated as contributing to kidney stone formation in some patients.

#### Reference Values

> or =18 years: 226-1,797 mg/24 hours

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Reference values have not been established for patients who are less than 18 years of age.

**Interpretation**

Interpretation of urinary phosphorus excretion is dependent upon the clinical situation, and should be interpreted in conjunction with the serum phosphorus concentration.

**Cautions**

No significant cautionary statements

**Clinical Reference**

1. Delaney MP, Lamb EJ: Kidney disease. In: Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:1280-1283
2. Agarwal R, Knochel JP: Hypophosphatemia and hyperphosphatemia. In: Brenner BM, ed. The Kidney. 6th ed. WB Saunders Company; 2000:1071-1125

**Performance****Method Description**

Inorganic phosphorus reacts with ammonium molybdate in an acidic solution to form ammonium phosphomolybdate. The ammonium phosphomolybdate is quantified in the ultraviolet range (340 nm). (Package insert: Roche Phosphorus. Roche Diagnostics; V9.0 12/2019)

**PDF Report**

No

**Day(s) Performed**

Monday through Sunday

**Report Available**

1 to 3 days

**Specimen Retention Time**

7 days

**Performing Laboratory Location**

Mayo Clinic Laboratories - Rochester Main Campus

**Fees & Codes****Fees**

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

**Test Classification**

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**

84105

**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
POU	Phosphorus, 24 HR, U	2779-7

Result ID	Test Result Name	Result LOINC® Value
POUU	Phosphorus, 24 HR, U	2779-7
TM12	Collection Duration	13362-9
VL10	Urine Volume	3167-4
PHOCN	Phosphorus Concentration	21458-5