Overview

Useful For
Detecting clinically significant lead exposure in 24-hour specimens

This test is not a substitute for blood lead screening.

Special Instructions
- Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens
- Trace Metals Analysis Specimen Collection and Transport

Method Name
Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

NY State Available
Yes

Specimen

Specimen Type
Urine

Advisory Information
The CDC recommends venous blood collection for lead testing; see PBDV / Lead, Venous, with Demographics, Blood

Necessary Information
24 Hour volume is required.

Specimen Required

Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Supplies: Urine Tubes, 10 mL (T068)

Collection Container/Tube: Clean, plastic urine container with no metal cap or glued insert

Submission Container/Tube: Plastic, 10-mL urine tube or a clean, plastic aliquot container with no metal cap or glued insert

Specimen Volume: 10 mL

Collection Instructions:

1. Collect urine for 24 hours.
2. Refrigerate specimen within 4 hours of completion of 24-hour collection.
3. See Trace Metals Analysis Specimen Collection and Transport in Special Instructions for complete instructions.

Additional Information: See Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens in Special Instructions for multiple collections.

Urine Preservative Collection Options

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

<table>
<thead>
<tr>
<th>Preservative</th>
<th>Acceptable</th>
</tr>
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<tbody>
<tr>
<td>Ambient</td>
<td>OK</td>
</tr>
<tr>
<td>Refrigerate</td>
<td>Preferred</td>
</tr>
<tr>
<td>Frozen</td>
<td>OK</td>
</tr>
<tr>
<td>50% Acetic Acid</td>
<td>OK</td>
</tr>
<tr>
<td>Boric Acid</td>
<td>No</td>
</tr>
<tr>
<td>Diazolidinyl Urea</td>
<td>No</td>
</tr>
<tr>
<td>6M Hydrochloric Acid</td>
<td>OK</td>
</tr>
<tr>
<td>6M Nitric Acid</td>
<td>OK</td>
</tr>
<tr>
<td>Sodium Carbonate</td>
<td>No</td>
</tr>
<tr>
<td>Thymol</td>
<td>No</td>
</tr>
<tr>
<td>Toluene</td>
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</table>

Specimen Minimum Volume
2 mL

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

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Urine</td>
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<td>28 days</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
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Clinical and Interpretive

Clinical Information
Increased urine lead excretion rate indicates significant lead exposure. Measurement of urine lead excretion rate before and after chelation therapy has been used as an indicator of lead exposure. However, the American College of Medical Toxicology (ACMT 2010) position statement on post-chelator challenge urinary metal testing states that
"post-challenge urinary metal testing has not been scientifically validated, has no demonstrated benefit, and may be harmful when applied in the assessment and treatment of patients in whom there is concern for metal poisoning."

For additional information, see PBDV/ Lead, Venous, with Demographics, Blood.

**Reference Values**

0-17 years: not established

> or =18 years: <2 mcg/24 hour

**Interpretation**

Measurements of urinary lead (Pb) levels have been used to assess lead exposure. However, like lead blood, urinary lead excretion mainly reflects recent exposure and thus shares many of the same limitations for assessing Pb body burden or long-term exposure.\(^1\)\(^,\)\(^2\)

Urinary lead concentration increases exponentially with blood lead and can exhibit relatively high intra-individual variability, even at similar blood lead concentrations.\(^3\)\(^,\)\(^4\)

**Cautions**

No significant cautionary statements.

**Clinical Reference**


**Method Description**

Lead (Pb) in urine is analyzed by Inductively coupled plasma-mass spectrometry (ICP-MS) in kinetic energy discrimination (KED) mode using gallium (Ga), rhodium (Rh), and iridium (Ir) as internal standards and a 5% nitric acid salt matrix calibration. (Unpublished Mayo method)
Test Definition: PBU
Lead, 24 Hr, U

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Saturday; 7 p.m.

Analytic Time
1 day

Maximum Laboratory Time
4 days

Specimen Retention Time
14 days

Performing Laboratory Location
Rochester

Fees and 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 Regional Manager. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
83655

LOINC® Information

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<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>PBU</td>
<td>Lead, 24 Hr, U</td>
<td>5677-0</td>
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<table>
<thead>
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<td>VL84</td>
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