Overview

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

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

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/Condition</th>
<th>Acceptable Status</th>
</tr>
</thead>
<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>
<td>OK</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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</thead>
<tbody>
<tr>
<td>Urine</td>
<td>Refrigerated (preferred)</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>28 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>28 days</td>
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</tbody>
</table>

**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. An increase in lead excretion rate in the postchelation specimen of up to 6 times the rate in the prechelation specimen is normal. Blood lead is the best clinical correlate of toxicity.

For additional information, see PBDB / Lead with Demographics, Blood.

**Reference Values**

0-17 years: not established
> or =18 years: <1 mcg/24 hour

**Interpretation**

Urinary excretion of less than 125 mcg of lead per 24 hours is not associated with any significant lead exposure.

Urinary excretion of more than 125 mcg of lead per 24 hours is usually associated with pallor, anemia, and other evidence of lead toxicity.

**Cautions**

This test is not a substitute for blood lead screening.

**Clinical Reference**


**Performance**

**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)

**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
Test Definition: PBU
Lead, 24 Hr, U

- 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

<table>
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<tr>
<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>
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<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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<tbody>
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<td>31085</td>
<td>Lead, 24 Hr, U</td>
<td>5677-0</td>
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<tr>
<td>TM83</td>
<td>Collection Duration</td>
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<tr>
<td>VL84</td>
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