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**Lab Dept:** Chemistry

**Test Name:** ALUMINUM

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***General Information***

**Lab Order Codes:** ALM

**Synonyms:** Al, Serum

**CPT Codes:** 82108 - Aluminum

**Test Includes:** Serum aluminum level in ng/mL

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***Logistics***

**Test Indications:** Preferred monitoring for aluminum toxicity in patients undergoing dialysis. Preferred testing for routine aluminum screening. Monitoring metallic prosthetic implant wear.

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Clinic Laboratories (Mayo Test: AL)

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 2 - 7 days, test performed on Tuesdays

**Special Instructions:** Special tube required. Contact the laboratory. See [Container](#)

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***Specimen***

**Specimen Type:** Blood

**Container:** **Dark Blue top with Red Stripe** [Metal Free Navy (No additive) tube] – available from the laboratory)

This special tube is **required** for this testing.

**Draw Volume:** 6 mL (Minimum: 1.5 mL) blood

**Processed Volume:** 1.2 mL (Minimum: 0.3 mL) serum

<b>Collection:</b>	Routine venipuncture
<b>Special Processing:</b>	<p>Lab Staff: See Mayo's <a href="#">Metals Analysis Collection, Processing and Transport Guide</a>.</p> <p>Allow specimen to clot for 30 minutes, centrifuge to separate serum. Remove stopper and carefully pour the serum into a 7.0 mL Mayo <b>metal-free</b>, screw-capped, polypropylene vial, avoiding the transfer of any cellular products. Do not insert a pipette into the serum to accomplish the transfer. Do not ream the specimen with a wooden stick. Close the cap. Refrigerate specimen. Forward promptly.</p> <p>Metal-free serum specimen stable for 7 days refrigerated (preferred), ambient or frozen.</p>
<b>Patient Preparation:</b>	High concentrations of gadolinium and iodine are known to interfere with most metal tests. If either gadolinium- or iodine-containing contrast media has been administered, <b>a specimen should not be collected for 96 hours.</b>
<b>Sample Rejection:</b>	Mislabeled or unlabeled specimens; specimen drawn into the wrong collection container.

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### ***Interpretive***

<b>Reference Range:</b>	<p>All ages: &lt;7 ng/mL</p> <p>Dialysis patients: &lt;60 ng/mL</p>
<b>Critical Values:</b>	N/A
<b>Limitations:</b>	<p>Failure to pay attention to proper specimen collection procedures can cause abnormal results due to specimen contamination, which can lead to misinterpretation and misdiagnosis:</p> <ul style="list-style-type: none"><li>• Most common evacuated blood collection devices used have stoppers that are comprised of aluminum-silicate. Simple puncture of the rubber stopper for blood collection is sufficient to contaminate the specimen with aluminum. Typically, blood drawn in standard evacuated blood tubes will be contaminated by 20 to 60 ng/mL aluminum.</li><li>• The use of wooden applicator sticks or pipette tips during specimen aliquoting can cause abnormal results due to contamination.</li></ul>
<b>Methodology:</b>	Dynamic Reaction Cell-Inductively Coupled Plasma-Mass Spectrometry (DRC-ICP-MS)
<b>References:</b>	<a href="#">Mayo Clinic Laboratories</a> April 2024

**Updates:**

7/12/2005: Method changed at MML, previously listed as Flameless Atomic Absorption Spectrometry.

4/15/2013: Days performed update.

10/28/2013: Method update, ref range update, tube type update.

2/14/2017: Tube update

4/25/2024: Added Patient preparation, specimen stability, link to Mayo's Metals processing guide. Updated specimen volume and turnaround time.