High Purity Aluminum Al Sputtering Targets

Applications
- Electronics
- Semiconductor
- Flat panel displays

Features
- Competitive pricing
- High purity
- Grain refined, engineered microstructure
- Semiconductor grade

Manufacturing Process
- Refining
  - Three-layer electrolytic process
- Melting and casting
  - Electrical resistance furnace
  - Semi-continuous casting
- Grain refinement
  - Thermomechanical treatment
- Cleaning and final packaging
  - Cleaned for use in vacuum
  - Protection from environmental contaminants
  - Protection during shipment

Options
- 99.999% minimum purity
- Semiconductor grade aluminum alloys available
  - Al/Si, Al/Cu, Al/Cu/Si
- Planar circular targets up to 18" (457mm) diameter
- Planar tiles up to 48" (1200mm) X 15.75" (400mm) for larger target configurations
- Smaller sizes also available for R&D applications
- Sputtering target bonding service

www.lesker.com
Specifications

Typical Analysis - 99.999% (5N) Purity
Metallic Impurities, ppm by weight

<table>
<thead>
<tr>
<th></th>
<th>Ag</th>
<th>Ca</th>
<th>Cr</th>
<th>Cs</th>
<th>Cu</th>
<th>Fe</th>
<th>K</th>
<th>Li</th>
<th>Mg</th>
<th>Na</th>
<th>Ni</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;0.5</td>
<td>&lt;1</td>
<td>&lt;2</td>
<td>&lt;1</td>
<td>&lt;3</td>
<td>&lt;3</td>
<td>&lt;0.4</td>
<td>&lt;0.1</td>
<td>&lt;2</td>
<td>&lt;0.5</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Si</th>
<th>Th</th>
<th>Ti</th>
<th>U</th>
<th>V</th>
<th>Zn</th>
<th>Na+K+Li</th>
<th>Th+U</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;0.5</td>
<td>&lt;0.01</td>
<td>&lt;2</td>
<td>&lt;0.01</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;0.02</td>
<td>&lt;= 5ppm</td>
</tr>
</tbody>
</table>

Non-Metallic Impurities, ppm by weight

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>H</th>
<th>O</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;20</td>
<td>&lt;10</td>
<td>&lt;30</td>
<td>&lt;10</td>
<td>&lt;10</td>
</tr>
</tbody>
</table>

Density 2.7 g/cm³
Grain Size 300 µm average, 400 µm maximum
Electrical Resistivity 2.8 x 10⁻⁸ Ω·m
Thermal Conductivity 235 W/m·K
Melting Point 660°C
Appearance Silvery, metallic

Kurt J. Lesker Company (KJLC®) specifications and/or test data may not be copied, reproduced or referenced without express written permission of KJLC.