Tantalum Ta
Sputtering Targets

Applications
- Optical films
- Semiconductor
  - Diffusion barrier layer

Features
- High purity
- Grain refined, engineered microstructure

Manufacturing Process
- Refining
  - Multiple step electron beam melting
- Grain refinement
  - Thermomechanical treatment
- Cleaning and final packaging
  - Cleaned for use in vacuum
  - Protection from environmental contaminants
  - Protection during shipment

Options
- 99.95% minimum purity
- Planar circular targets up to 16" (400 mm) diameter
- Planar tiles up to 60" (1500 mm) X 15.75" (400 mm) for larger target configurations
- Smaller sizes also available for R&D applications
- Sputtering target bonding service

www.lesker.com
Specifications

Typical Analysis - 99.95% (3N5) Purity

Metallic Impurities, ppm by weight

<table>
<thead>
<tr>
<th></th>
<th>Al</th>
<th>Cr</th>
<th>Cu</th>
<th>Fe</th>
<th>Mn</th>
<th>Mo</th>
<th>Nb</th>
<th>Ni</th>
<th>Si</th>
<th>Na</th>
<th>Ti</th>
<th>W</th>
<th>Zr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt;5</td>
<td>&lt;10</td>
<td>&lt;10</td>
<td>&lt;20</td>
<td>&lt;10</td>
<td>&lt;100</td>
<td>&lt;400</td>
<td>&lt;10</td>
<td>&lt;20</td>
<td>&lt;0.5</td>
<td>&lt;5</td>
<td>&lt;300</td>
<td>&lt;10</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>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;50</td>
<td>&lt;10</td>
<td>&lt;100</td>
<td>&lt;50</td>
<td></td>
</tr>
</tbody>
</table>

Theoretical Density 16.6 g/cm³
Relative Density 99% minimum
Average Grain Size 150 µm maximum
Electrical Resistivity 12.5 Ω·cm
Thermal Conductivity 57W/m·K
Thermal Expansion (CTE) 6.3 x 10⁻⁶/°K
Melting Point 3017°C
Appearance Blue-gray, metallic

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