**Sputtering Targets**

- Purity up to 99.999+%  
- Target sizes from 1” dia. to 8” dia.  
- Thickness from 1/8” to 1/4”  
- Custom sizes/shapes available  
- High quality at lower prices  
- OFHC copper backing plates  
- Target bonding (solder, epoxy, diffusion)  
- Analysis provided

- Aluminum, Al  
- Antimony, Sb  
- Barium, Ba  
- Bismuth, Bi  
- Boron, B  
- Cadmium, Cd  
- Carbon Graphite, C  
- Cerium, Ce  
- Chromium, Cr  
- Cobalt, Co  
- Copper, Cu  
- Dysprosium, Dy  
- Erbium, Er  
- Europium, Eu  
- Gadolinium, Gd  
- Germanium, Ge  
- Gold, Au  
- Hafnium, Hf  
- Holmium, Ho  
- Indium, In  
- Iridium, Ir  
- Iron, Fe  
- Lanthanum, La  
- Lead, Pb  
- Magnesium, Mg  
- Manganese, Mn  
- Molybdenum, Mo  
- Neodymium, Nd  
- Nickel, Ni  
- Niobium, Nb  
- Palladium, Pd  
- Platinum, Pt  
- Praseodymium, Pr  
- Rhenium, Re  
- Ruthenium, Ru  
- Samarium, Sm  
- Selenium, Se  
- Silicon, Si  
- Silver, Ag  
- Strontium, Sr  
- Tantalum, Ta  
- Tellurium, Te  
- Terbium, Tb  
- Thallium, Tl  
- Thulium, Tm  
- Tin, Sn  
- Titanium, Ti  
- Tungsten, W  
- Vanadium, V  
- Ytterbium, Yb  
- Yttrium, Y  
- Zinc, Zn  
- Zirconium, Zr

Fritz Glass  
Iron Oxide, Fe$_2$O$_3$  
Indium Tin Oxide, ITO  
Lead Oxide, PbO  
Lithium Niobate, LiNbO$_3$  
Nickel Oxide, NiO  
Silicon Dioxide, SiO$_2$  
Tantalum Nitride, TaN  
Vanadium Dioxide, VO$_2$  
Zinc Oxide, ZnO

Please enquire for any other material

- Titanium Target (99.99%)  
  8” dia x 5mm thick  
  Bonded to Cu Backing Plate

- MnNiCoO Target (99.96+)  
  100mm dia x 6mm thick  
  Bonded to Cu Backing Plate

- Hafnium Oxide (HfO$_2$)  
  8” dia Target  
  (99.995%)  

- ZnO + 2% Ag Target (99.99%)  
  400mm x 100mm x 3mm thick  
  Bonded to Cu Backing Plate

- Silver (Ag), 99.99%  
  4” dia x 6mm Target  
  (Diffusion bonded)

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Bonded Targets:

It is highly recommended that all oxide/nitride/sulfide based sputtering targets use a bonded copper backing plate. This will avoid any cracking of targets due to improper clamping and under high power applications.

**Indium-Alloy Solder Bonding:**

It is recommended due to uniform bond-line thickness and covering almost 100% of the surface area. It offers excellent thermal and electrical conductivity and is compatible with RF/DC applications. Maximum Operating Temperature is 150°C.

**Silver-filled Epoxy Bonding:**

Silver-filled, low-outgassing, electrically and thermally conductive, 2-part epoxy is quite popular in bonding the target. Care should be taken to thoroughly mix the epoxy/resin and making sure that the bond-line thickness is quite uniform thus avoiding any air pockets. It is also compatible with RF/DC applications.

Precious Metal Targets Weight Chart:

The Table below shows approximate weight of various diameter/thickness sputtering targets fabricated from Gold, and Platinum metal. The bare target price consists of the metal weight, and the fabrication cost.

<table>
<thead>
<tr>
<th>Target</th>
<th>Dia.</th>
<th>Thickness</th>
<th>Weight (gms)</th>
<th>Weight (Oz)</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold (Au)</td>
<td>2.00”</td>
<td>0.125”</td>
<td>125</td>
<td>4.03</td>
<td>Gold density = 19.3 gm/cm³ = 316.27 gm/in³ 1 troy oz = 31 gms</td>
</tr>
<tr>
<td></td>
<td>2.00”</td>
<td>0.250”</td>
<td>249</td>
<td>8.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>0.125”</td>
<td>280</td>
<td>9.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>0.250”</td>
<td>560</td>
<td>18.06</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>1mm</td>
<td>88</td>
<td>2.84</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>2mm</td>
<td>177</td>
<td>5.70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.00”</td>
<td>0.125”</td>
<td>497</td>
<td>16.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.00”</td>
<td>0.250”</td>
<td>995</td>
<td>32.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.00”</td>
<td>3mm</td>
<td>470</td>
<td>15.16</td>
<td></td>
</tr>
<tr>
<td>Platinum (Pt)</td>
<td>2.00”</td>
<td>0.125”</td>
<td>138</td>
<td>4.45</td>
<td>Platinum density = 21.45 gm/cm³ = 351.50 gm/in³ 1 troy oz = 31 gms</td>
</tr>
<tr>
<td></td>
<td>2.00”</td>
<td>0.250”</td>
<td>276</td>
<td>8.91</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>0.125”</td>
<td>311</td>
<td>10.02</td>
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<tr>
<td></td>
<td>3.00”</td>
<td>0.250”</td>
<td>621</td>
<td>20.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.00”</td>
<td>1mm</td>
<td>98</td>
<td>3.16</td>
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<tr>
<td></td>
<td>3.00”</td>
<td>2mm</td>
<td>196</td>
<td>6.32</td>
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</tr>
<tr>
<td></td>
<td>4.00”</td>
<td>0.125”</td>
<td>552</td>
<td>17.81</td>
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</tr>
<tr>
<td></td>
<td>4.00”</td>
<td>0.250”</td>
<td>1,104</td>
<td>35.62</td>
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<tr>
<td></td>
<td>4.00”</td>
<td>3mm</td>
<td>522</td>
<td>16.83</td>
<td></td>
</tr>
</tbody>
</table>

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