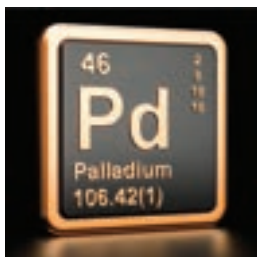
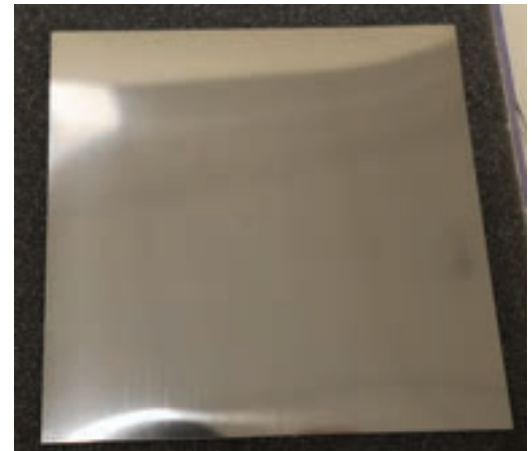


## High Performance Precious Metal Alloys for Semiconductor Wafer Test Systems

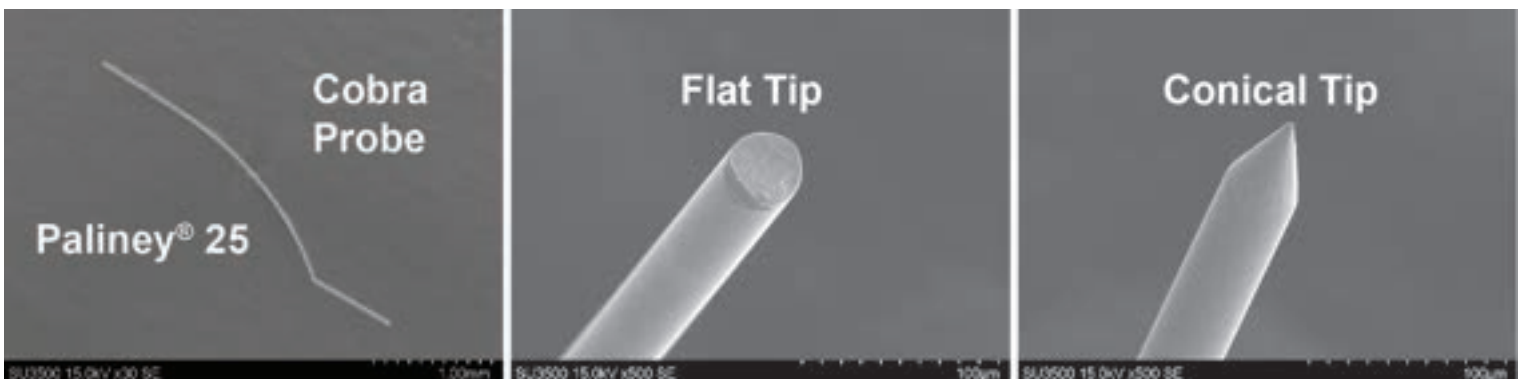
Application-Specific Precious Metal Alloys Developed for...

- Buckling Beam Probes
- Cantilever Probes
- Straight Needles
- Cobra Probes
- Pogo Pin Tips
- Vertical Probes
- Foil Probes for Laser Fabrication



**PALINEY®**  
Palladium Alloys

Standard Foil  
Sizes Available:  
10cm x 10cm and 5cm x 5cm  
Thicknesses Range from:  
16 $\mu$  - 100 $\mu$



Deringer-Ney's semiconductor alloys and manufacturing techniques are continually evolving to meet the increased demands for smaller component sizes. Pictured above is a cobra probe and two tip configurations commonly used in semiconductor wafer test probe cards.



## ROD Straight Lengths

1.5 mm to 7mm dia  
(0.060 in to 0.275 in)

## WIRE Spooled

20 um to 1.45 mm dia  
(0.0008 in to 0.57 in)

## STRIP & Ribbon Spooled

50 um to 380 um thick  
(0.002 in to 0.015 in)  
2 mm to 89mm wide  
(0.080 in to 3.50 in)

**Note: Please consult factory for specific material availability and temper, or custom requirements.**

Alloy Property	Paliney® 7	Paliney® H3C	Paliney® C	Paliney® 25	Paliney® 23
Solidus °C	1,080	956	925	1,090	1,085
Density g/cm <sup>3</sup>	11.8	10.4	10.4	10.5	10.6
Electrical Resistivity μΩ-cm @ 20°C	31.6	12.3	10.1	6.35	7.18
CTE 1/K	13.5 x 10 <sup>-6</sup>	13.9 x 10 <sup>-6</sup>	14.4 x 10 <sup>-6</sup>	12.7 x 10 <sup>-6</sup>	12.7 x 10 <sup>-6</sup>
Knoop Hardness heat treated HK	350	450	350	400	460
Yield Strength MPa	1,103	1,620	1,135	1,035	1,190
Total Elongation %	5	2.5	2	10	4
Elastic Modulus GPa	123	122	117	135	135
Alloy Configuration	Age Hardenable Pd-Ag-Cu Alloy				
Conductivity	5.5% IACS	14% IACS	17% IACS	28% IACS	24% IACS
Advantages	tarnish resistant good nobility	very high hardness and conductivity tarnish resistant, but less noble than Paliney 7	similar tarnish resistance and conductivity as H3C better cold forming ability than H3C	better tarnish resistance than H3C excellent formability best conductivity of all the Pd based alloys	excellent tarnish resistance low adhesion to debris high hardness
Typical Applications	test probes - cantilever, cobra, vertical probe pins electrodes for corrosive environments potentiometers	test probes - cantilever, cobra; widely used for pogo pin tips	test probes - cantilever, cobra, vertical probe pins	test probes - cantilever, cobra, vertical probe pins, foil probes	

CONTACT US at (860) 286-6101 or [www.deringerney.com](http://www.deringerney.com)

Regional Sales Manager (Asia) Mr. Philip Hsia at [phsia@deringerney.com](mailto:phsia@deringerney.com)

