

## Prince & Izant Company

12999 Plaza Drive  
Cleveland, Ohio 44130  
T: 216-362-7000  
F: 216-362-7456  
[princeizant.com](http://princeizant.com)



## PAL 36

### TECHNICAL DATA

<b>NOMINAL COMPOSITION</b>	<b>Palladium</b>	36.0% ± 1.0
	<b>Chromium</b>	10.5% ± 1.0
	<b>Boron</b>	2.875% ± 0.375
	<b>Silicon</b>	0.625% ± 0.375
	<b>Nickel</b>	Balance
	<b><u>Vacuum Grade Trace Elements</u></b>	
	<b>Cadmium</b>	0.001% max.
	<b>Zinc</b>	0.001% max.
	<b>Phosphorus</b>	0.002% max.
	<b>Lead</b>	0.002% max.
	<b>Carbon</b>	0.005% max.
	<b>Other volatile elements each*</b>	0.002% max.
	<b>Volatile elements total</b>	0.010% max.
<b>Total non-volatile elements (Grade 1)</b>	0.01% max.	
<b>Total non-volatile elements (Grade 2)</b>	0.05% max.	
<b>PHYSICAL PROPERTIES</b>	<b>Color</b>	Silver Grey
	<b>Solidus</b>	1508°F (820°C)
	<b>Liquidus</b>	1760°F (960°C)
	<b>Recommended Brazing Temperature</b>	1810-1860°F (988-1016°C)
	<b>Density (g/cm<sup>3</sup>)</b>	8.83
<b>USES</b>	PAL 36 can be used on any common molybdenum, tungsten or iron based heat-resistant alloys. The addition of nickel compared to other palladium-based alloys will also allow for adherence to stainless steel, superalloys and cemented carbides.	
	PAL 36 is often used for high-integrity braze joints and TIG welding for aero engine compressor vanes and stators, aerospace fuel-line assemblies, wave guide and klystron assemblies, power supply surge arrestors, and automotive components.	
<b>BRAZING CHARACTERISTICS</b>	PAL 36 has a wide melt range (252°F) and therefore can exhibit liquation during brazing; minimal exposure to temperatures between the solidus and liquidus is recommended. The palladium content in PAL 36 inhibits the potential of stress corrosion cracking in iron-nickel base metals in comparison to standard silver-copper alloys. It also exhibits higher corrosion and oxidation resistance than standard silver-copper alloys and better high-temperature creep resistance than gold-nickel alloys. This alloy composition is ideal for use in applications which require a low volume of volatile constituents.	

**PROPERTIES OF BRAZED JOINTS**

The properties of a brazed joint are dependent upon the base metal, joint design and brazing technique. For controlled atmosphere brazing or vacuum brazing of alloys with a melt range in excess of 200°F a joint clearance of 0.002in – 0.007in (0.00mm – 0.05mm) is recommended.

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**SPECIFICATIONS**

PAL 36 alloy conforms to: N/A

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**AVAILABLE FORMS**

Foil, engineered preforms and specialty preforms per customer specification, powder and paste.

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**SAFETY INFORMATION**

The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting."

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Individuals requiring further information and Engineering Specification Documents may wish to contact the Engineering Society for Advanced Mobility, Land Sea Air and Space, The Society of Automotive Engineers <http://www.sae.org/> (SAE AMS) or The American Welding Society (AWS) <http://aws.org/>

**NOTE:****DISCLAIMER**

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