

## Prince & Izant Company

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## PAL 25 (BVAg-32) TECHNICAL DATA

<b>NOMINAL COMPOSITION</b>	<b>Silver</b>	54.0% ± 1.0
	<b>Copper</b>	21.0% ± 1.0
	<b>Palladium</b>	25.0% ± 0.5
	<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.
<p>*Elements with a vapor pressure higher than <math>10^{-7}</math> torr at 932°F (such as Mg, Sb, K, Li, Tl, S, Cs, Rb, Se, Te, Sr, and Ca) are limited to 0.001% each for Grade 1 and 0.002% for Grade 2.</p>		
<b>PHYSICAL PROPERTIES</b>	<b>Color</b>	Silver White
	<b>Solidus</b>	1650°F (900°C)
	<b>Liquidus</b>	1740°F (950°C)
	<b>Recommended Brazing Temperature</b>	1790-1840°F (977-1004°C)
	<b>Density (Toz/in<sup>3</sup>)</b>	5.51
	<b>Specific Gravity</b>	10.5
	<b>Electrical Conductivity (%IACS)</b>	15.0
<b>Electrical Resistivity (Microhm-cm)</b>	11.5	
<b>USES</b>	<p>PAL 25 can be used on any of the common ferrous and non-ferrous alloys. Due to its low vapor pressure compared to standard silver base filler metals, PAL 25 is suitable for use in all vacuum applications such as electronic valve construction and vacuum tube construction in the electronics industry. PAL 25 offers slow penetration of the substrates; therefore it is often recommended in brazing of thin wall assemblies such as honeycomb structures and heat exchangers. This alloy is often use in brazing of compressor stator assemblies.</p>	
<b>BRAZING CHARACTERISTICS</b>	<p>The palladium content in PAL 25 inhibits the potential of stress corrosion cracking in iron-nickel base metals in comparison to standard silver-copper alloys. PAL 25 exhibits high corrosion and oxidation resistance.</p>	
<b>PROPERTIES OF BRAZED JOINTS</b>	<p>The properties of a brazed joint are dependent upon the base metal, joint design and brazing technique. For controlled atmosphere brazing or vacuum brazing the recommended radial joint clearance for silver base alloys falls within 0.000in – 0.002in (0.00mm – 0.05mm) range.</p>	

<b>SPECIFICATIONS</b>	PAL 25 alloy conforms to: Unified Numbering System (UNS) P07547 and American Welding Society (AWS) A5.8/A5.8M BVAg-32 Grade 1 and Grade 2.
<b>AVAILABLE FORMS</b>	Wire, strip, engineered preforms and specialty preforms per customer specification, powder and paste.
<b>SAFETY INFORMATION</b>	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."

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:**

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