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PAL 10 (BVAg-31) TECHNICAL DATA

NOMINAL COMPOSITION	Silver	58.0% ± 1.0
	Copper	32.0% ± 1.0
	Palladium	10.0% ± 0.5
	<u>Vacuum Grade Trace Elements</u>	
	Cadmium	0.001% max.
	Zinc	0.001% max.
	Phosphorus	0.002% max.
	Lead	0.002% max.
	Carbon	0.005% max.
	Other volatile elements each*	0.002% max.
	Volatile elements total	0.010% max.

*Elements with a vapor pressure higher than 10^{-7} 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.

PHYSICAL PROPERTIES	Color	Silver White
	Solidus	1515°F (823°C)
	Liquidus	1565°F (851°C)
	Recommended Brazing Temperature	1615-1665°F (879-907°C)
	Density (Toz/in³)	5.30
	Specific Gravity	10.1
	CTE (x10⁻⁶/°C)	18.5
	Thermal Conductivity (W/(m•K))	145
	Electrical Conductivity (x10⁶/(ohm•m))	18.9
	Electrical Resistivity (x10⁻⁹ ohm•m)	53
	Yield Strength (MPa)	327
	Tensile Strength (MPa)	374
	Elongation (%)	18

USES

PAL 10 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 10 is suitable for use in all vacuum applications such as electronic valve construction and vacuum tube construction in the electronics industry. This alloy is often used in brazing of metallized ceramics to nickel-cobalt-iron assemblies. In the aerospace industry, PAL 10 can be used in the brazing of fuel line assemblies and aero-engine components.

**BRAZING
CHARACTERISTICS**

The palladium content in PAL 10 inhibits the potential of stress corrosion cracking in iron-nickel base metals in comparison to standard silver-copper alloys. PAL 10 exhibits high corrosion and oxidation resistance.

**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 the recommended radial joint clearance for silver base alloys falls within 0.000in – 0.002in (0.00mm – 0.05mm) range.

SPECIFICATIONS

PAL 10 alloy conforms to: Unified Numbering System (UNS) P07587 and American Welding Society (AWS) A5.8/A5.8M BVAg-31 Grade 1 and Grade 2.

AVAILABLE FORMS

Wire, strip, engineered preforms and specialty preforms per customer specification, powder and paste.

**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."

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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