

Prince & Izant Company

12999 Plaza Drive
Cleveland, Ohio 44130
T: 216-362-7000
F: 216-362-7456
princeizant.com



SILVERBRAZE 99.95 (BVAg-0)

TECHNICAL DATA

NOMINAL COMPOSITION	Silver	99.95% min.
	Copper	0.05% max.
	<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.
	Total non-volatile elements (Grade 1)	0.01% max.
	Total non-volatile elements (Grade 2)	0.05% 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
	Melting Point	1761°F (962°C)
	Recommended Brazing Temperature	1811-1861°F (988-1016°C)
	Density (Toz/in³)	5.53
	CTE (x10⁻⁶/°C)	20.6
	Thermal Conductivity (W/(m•K))	418.7
	Electrical Conductivity (x10⁶/(ohm•m))	0.6
	Electrical Resistivity (x10⁻⁹ ohm•m)	1770
	Young's Modulus (GPa)	71
	Yield Strength (MPa)	54
	Tensile Strength (MPa)	125
	Hardness (KHN)	25

USES

BVAg-0 has a higher level of Ag than commercially pure fine silver, which by definition contains a minimum of 99.9% versus at least 99.95% Ag in BVAg-0. It is widely used in the electrical and electronics industries as contacts and conductors and in the chemical industry as linings for reactors and process/storage vessels, particularly caustic evaporators and crystallizers. BVAg-0 provides strong, ductile joints with good corrosion resistance.

BRAZING CHARACTERISTICS

BVAg-0 is not an alloy – so it has a specific melt temperature, allowing it to easily fill tight joint clearances. It wets to most ferrous and nonferrous metals. It can have a tendency to flash across the base parts if left at braze temperature for too long.

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

Silverbraz 99.95 conforms to: Unified Numbering System (UNS) P07017 and American Welding Society (AWS) A5.8/A5.8M BVAg-0 Grade 1 and Grade 2.

AVAILABLE FORMS

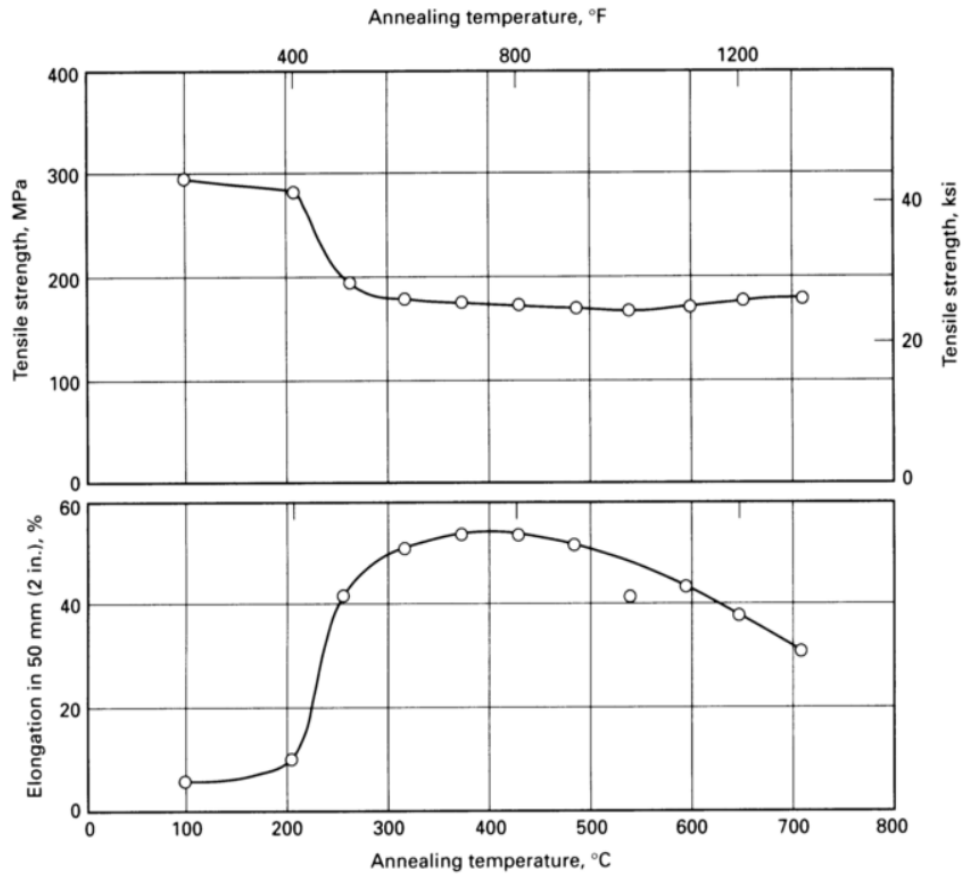
Wire, strip, engineered preforms and specialty preforms per customer specification, powder and paste.

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."

MECHANICAL PROPERTIES BY TEMPER

Form	Temper	Approx. Reduction (% in area)	Tensile Strength (lbs/in ²)	Min. Elongation (% in 2")
Wire	Soft	0	24,000-30,000	25
	¼ Hard	21	30,000-37,000	4
	½ Hard	37	39,000-46,000	4
	Hard	60	42,000-49,000	2
	Extra Hard	75	46,000-53,000	2
	Spring	84	47,000-54,000	1
	Extra Spring	90	48,000-55,000	1
Strip	Soft	0	24,000-30,000	25
	¼ Hard	11	26,000-33,000	18
	½ Hard	21	30,000-37,000	8
	Hard	37	37,000-44,000	3
	Extra Hard	50	41,000-47,000	2
	Spring	60	44,000-51,000	1
	Extra Spring	69	48,000-55,000	1



Tensile properties of commercial pure fine silver (.091 in.) diameter wire

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

The information and recommendations contained in this publication have been provided without charge & compiled from sources believed to be reliable and to represent the best information available on the subject at the time of issue. No warranty, guarantee, or representation is made by the Prince and Izant Company, Inc. as to the absolute correctness or sufficiency of any representation contained in this and other publications; Prince and Izant Company, Inc. assumes no responsibility in connection therewith; nor can it be assumed that all acceptable safety measures are contained in this (and other publications, or that other or additional measures may not be required under particular or exceptional conditions or circumstances.