

Prince & Izant Company

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



SILVERBRAZE 72 (BAg-8/BVAg-8) TECHNICAL DATA

NOMINAL COMPOSITION

Silver	72.0% ± 1.0
Copper	Remaining
Other Elements Total	0.15%
<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*	0.001% 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	White
Solidus	1435°F (779°C)
Liquidus	1435°F (779°C)
Recommended Brazing Temperature	1435-1535°F (779-835°C)
Density (Troy oz/in ³)	5.25
Specific Gravity	10.01
Young's Modulus (GPa)	83
Yield Strength (MPa)	272
Tensile Strength (MPa)	372
Elongation (%)	19
Hardness (KHN)	101
CTE ($\times 10^6$ / (ohm·m))	19.6
Electrical Conductivity (%IACS)	87.0
Electrical Resistivity (Microhm-cm)	2.00

USES

Silver Braze 72 is generally used to join silver, copper and nickel base alloys in reducing or inert atmospheres or vacuum. It is also widely used to join metallized ceramics to metals in vacuum. The VTG version of Silver Braze 72, is designed for all types of moderate temperature vacuum systems and particularly where maximum precautions must be taken to insure the presence of only a minimum amount of detrimental volatile impurities.

BRAZING CHARACTERISTICS

Silver Braze 72 (& VTG) is the silver-copper eutectic composition and in melting it acts like a metallic element, i.e. it melts completely at a single temperature, thus it will quickly flow into long narrow joints. On either silver base or copper base alloys, Silver Braze 72 (& VTG) exhibits a decreased fluidity and an increased re-melt temperature due to the solution of either silver or copper in the eutectic. Brazing time and temperature should be minimized to prevent excessive diffusion and erosion of the base metal.

This filler metal has limited wetting ability on iron and on nickel base alloys. The wetting ability it does have is derived from its copper content. Both iron and nickel have practically no solubility in silver, while nickel is readily soluble in copper and the solubility of iron in copper is sufficient to provide wetting. It is an observed fact that the wetting obtained in good hydrogen atmospheres is superior to that derived from flux protection.

PROPERTIES OF BRAZED JOINTS

The properties of a brazed joint are dependent upon numerous factors including base metal properties, joint design, metallurgical interaction between the base metal and the filler metal. The results listed below were generated from brazed butt joints which were tested under standard room temperature conditions:

	<u>Tensile Strength (lbs/in²)</u>
Copper	30,000-35,000
Brass	35,000-50,000
Nickel-Silver	35,000-40,000

SPECIFICATIONS

Silver Braze 72 conforms to: Unified Numbering System (UNS) P07720 and American Welding Society (AWS) A5.8/A5.8M BAg-8, VTG version Grades 1 and 2 conform to BVAg-8

AVAILABLE FORMS

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

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.