

VACUBRAZE 721

NOMINAL COMPOSITION

	<u>Grade 2</u>
Silver	72.0% ±1.0%
Copper	Remainder
Cadmium	0.002% Max
Zinc	0.002% Max
Phosphorous	0.02% Max
Carbon	0.005% Max
Lead	0.002% Max
Other volatile elements ⁽¹⁾	0.002% Max
Volatile elements total (incl. Cd, Zn, Pb)	0.010% Max
Total non-volatile elements	0.05% Max

⁽¹⁾ Elements with a vapor pressure higher than 10⁻⁷ torr at 932°F (500°C) such as Mg, Sb, K, Na, Li, Ti, S, Cs, Rb, Se, Te, Sr, and Ca

Titanium is added to the Silvaloy 721 in Vacubraze 721 to make this paste active. The titanium content in the Vacubraze 721 paste is 5.00%.

PHYSICAL PROPERTIES

Color ⁽²⁾	White
Melting Point (Solidus) ⁽²⁾	1435°F (780°C)
Flow Point (Liquidus) ⁽²⁾	1435°F (780°C)
Brazing Temperature Range	1650°F – 1750°F (900°C - 950°C)
Specific Gravity ⁽²⁾	10.01
Density (Troy oz/in ³) ⁽²⁾	5.27
Electrical Conductivity (%IACS) ⁽³⁾	87.0
Electrical Resistivity (Microhm-cm)	2.00

⁽²⁾ Braze 721 Filler Metal Only

⁽³⁾ IACS = International Annealed Copper Standard

PRODUCT USES

VACUBRAZE 721 is a powdered active metal vacuum grade silver alloy used for joining hard to wet materials by the fluxless vacuum brazing process.

Vacubraze 721 will join diamonds, ceramic, carbide, sapphire, graphite, alumina, zirconium and beryllium to common substrates such as stainless steel, kovar and others without the need for molybdenum-manganese metallizing or other metallizing procedures.

Vacubraze 721 is easily dispensable using automated dispensing equipment. A minimum vacuum of 3x10⁻⁵ torr or better is recommended.

Typical Brazing Cycle*

1. 20⁰F per minute to 1400⁰F
2. Hold for five minutes
3. 20⁰F per minute to 1660⁰F
4. Hold for 6 minutes

*cycle will vary according to furnace dimension and load.

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. Joint clearances of 0.000 in. - 0.002 in. per side are optimum for achieving highest joint strength in a furnace. Joints with increased clearances can still produce adequate joint strengths depending on final operating conditions.

WARRANTY & STORAGE

Lucas-Milhaupt, Inc. warrants their Brazing and Soldering Paste products for 90 days from the date of shipment if stored in the original unopened container. Optimal storage conditions would be 65°F (18°C) - 75°F (24°C), clean and dry. It is recommended that the paste products are stored away from direct heat. Paste may require mixing to regain a homogenous mixture before application.

The 90 day warranty should not be interpreted as the shelf or useful life of the product. The paste products may be used well beyond the 90 day warranty, unless customer testing or production results indicate unsatisfactory performance of the product.

AVAILABLE PACKAGING

Vacubraze 721 is available in various size syringes, jars and cartridges.

SPECIFICATIONS

Vacubraze 721 powder chemistry is manufactured in accordance to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BVAg-8 Grade 2

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 84-375/40-085/90B1

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". For more complete information refer to the Material Safety Data Sheet for *Vacubraze 721*.

WARRANTY CLAUSE

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