LucasMilhaupt®
A Handy & Harman Company
Global Brazing Solutions®

Technical Data Sheet

SILVALOY® 716 VTG(1)

(BRAZE™ 716 VTG(1), SILVALOY® B72NV)

NOMINAL COMPOSITION

Silver	71.5% ± 1.0%
Copper	Remainder
Nickel	0.5% ± 0.2%
Zinc	0.002% Max
Cadmium	0.002% Max
Lead	0.002% Max
Phosphorus	0.020% Max
Carbon	0.005% Max
Other high vapor pressure elements each (1)	0.002% Max
Total all high vapor pressure elements (Including zinc, cadmium, and lead)	0.010% Max
Total all other impurity elements	0.05% Max

(1) Elements with a vapor pressure higher than 10^{-7} Torr (1.3×10^{-5} Pa) at 932ºF (500ºC)

PHYSICAL PROPERTIES

Color	Silver White
Melting Point (Solidus)	1435ºF (780ºC)
Flow Point (Liquidus)	1465ºF (795ºC)
Brazing Temperature Range	1465º F - 1650ºF (795ºC - 900ºC)
Specific Gravity	10.0
Density (Troy oz/in^3)	5.27
Electrical Conductivity (%IACS) (2)	78.8
Electrical Resistivity (Microhm-cm)	2.19

(2) IACS = International Annealed Copper Standard

PRODUCT USES

Silvaloy 716 (VTG) can be used in all types of moderate temperature vacuum systems in particular brazing of the electronic vacuum tube assemblies.

BRAZING CHARACTERISTICS

Silvaloy 716 (VTG) is a modified silver-copper eutectic filler metals with small additions of nickel. The addition of nickel renders this alloy somewhat more sluggish flow characteristics than the eutectic composition but improves the wettability of Silvaloy 716 (VTG) on ferrous base alloys. On silver, nickel, or copper base alloys, Silvaloy 716 (VTG) may exhibit a decrease in fluidity and an increase in re-melt temperature, after brazing if some solution of base metal occurs in the filler metal.

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. Butt joints have been brazed and tested for tensile strength at room temperature, on the listed metals, with the following typical results:

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PROPERTIES OF BRAZED JOINTS (CONT.)

	Tensile Strength (lbs/in^2)	Elongation (% in 2 in.)
Copper	30,000 - 35,000	10.0 - 19.0
Brass	35,000 - 50,000	13.0 - 25.0
Nickel-Silver	35,000 - 40,000	2.00 - 3.00
1020 Steel	45,000 - 55,000	8.00 - 12.0

AVAILABLE FORMS

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

SPECIFICATIONS

Silvaloy 716 (VTG) alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8M/A5.8 BVAg-8b Grade 2
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BVAg-8b Grade 2

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for Silvaloy 716 (VTG) Grade 2: A00000052, Legacy Codes: 32-716, 24794.

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 Safety Data Sheet for Silvaloy 716 (VTG).

WARRANTY CLAUSE

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