

Data Sheet

Nicusil[®] 3

Description:

High-purity silver, copper and nickel alloy for vacuum brazing.

Nominal composition by weight: **71.15% Ag, 28.1% Cu** and **0.75% Ni**

Prime features:

- Better wetting properties than alloys containing only Ag and Cu
- Greater strength than alloys containing only Ag and Cu

Suggested base materials:

- Copper, Nickel, Kovar, Metallized ceramic, Carbon/low alloy & Tool/high speed steel

Typical applications:

- Aero-engines (OEM and repair)
- Aerospace fuel-line assemblies
- Vacuum tubes
- Wave guide and Klystron assemblies
- Power supply surge arrestors
- Automotive components

Physical Properties*

Liquidus Temperature	795 °C
	1463 °F
Solidus Temperature	780 °C
	1436 °F
Coefficient of Thermal Expansion (CTE)	
Thermal Conductivity (Calculated)	223 W/m·K
	129 BTU/ft·h· °F
Density	9.98 Mg/m ³
	0.361 lb/in ³
Yield Strength (0.2% offset)	207 MPa
	33 x 10 ³ lb/in ²
Tensile Strength	330 MPa
	41.9 x 10 ³ lb/in ²
Elongation (2in/50mm gage section)	32%
Electrical Resistivity	34 x 10 ⁻⁹ ohm·m
Electrical Conductivity	29 x 10 ⁶ /ohm·m
Vapor Pressure (Calculated)	
Recommended Brazing Temperatures	815 - 840 °C
Recommended Brazing Atmospheres	10 ⁻⁵ mm Hg, H ₂ , or inert gas

* Please note that all values quoted are based on test pieces and may vary according to component design. These values are not guaranteed in any way and should only be treated as indicative values. They should be used for guidance only and for no other purpose whatsoever.

Impurity Limits

Zn	less than 0.001%
Cd	less than 0.001%
Pb	less than 0.002%
P	less than 0.002%
C	less than 0.01%

All other metallic impurities having a vapor pressure higher than 10⁻⁷ mm Hg at 500 °C are limited to 0.002% each. Impurities having a vapor pressure lower than 10⁻⁷ mm Hg at 500 °C are limited to a total of 0.075%. (This applies to all forms except powder and extrudable paste.)

Supplied as:

- Foil
- Flexibraz
- Wire
- Powder
- Extrudable paste
- Preforms

The determination as to the adaptability of any Wesgo materials to the specific needs of the Buyer is solely the Buyer's prerogative and responsibility. All technical information, data and recommendations are based on tests and accumulated experience data, which Wesgo believed to be reliable. However, the accuracy and completeness thereof are not guaranteed.