

## Data Sheet

# Gemco<sup>®</sup>

### Description:

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

Nominal composition by weight: **87.75% Cu**, **12% Ge** and **0.25% Ni**

### Prime Features:

- Economical high temperature hermetic bonding

### Suggested base materials:

- Copper, Kovar, Nickel, Carbon/ low alloy & Tool/high speed steel, Stainless steel, Ni-super alloys

### Physical Properties\*

Liquidus Temperature	975 °C
	1787 °F
Solidus Temperature	880 °C
	1616 °F
Coefficient of Thermal Expansion (CTE)	
Thermal Conductivity (Calculated)	24.3 W/m·K
	14 BTU/ft·h· °F
Density	8.82 Mg/m <sup>3</sup>
	0.318 lb/in <sup>3</sup>
Yield Strength (0.2% offset)	117 MPa
	17.0 x 10 <sup>3</sup> lb/in <sup>2</sup>
Tensile Strength	306 MPa
	44.4 x 10 <sup>3</sup> lb/in <sup>2</sup>
Elongation (2in/50mm gage section)	45%
Electrical Resistivity	311 x 10 <sup>-9</sup> ohm·m
Electrical Conductivity	3.22 x 10 <sup>6</sup> /ohm·m
Vapor Pressure (Calculated)	
Recommended Brazing Temperatures	1000 – 1025 °C
Recommended Brazing Atmospheres	10 <sup>-5</sup> mm Hg

\* 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<sup>-7</sup> mm Hg at 500 °C are limited to 0.002% each. Impurities having a vapor pressure lower than 10<sup>-7</sup> 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
- 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.