

## Data Sheet

# Nicoro<sup>®</sup> (BAu-3)

### Description:

High-purity gold, copper and nickel alloy for vacuum brazing.  
Nominal composition by weight: **35% Au, 62% Cu and 3% Ni**

### Prime features:

- Low penetration
- Excellent wetting on surfaces of nickel, molybdenum, stainless steel, and Kovar (Ni-Co-Fe alloy)
- Widely used for brazing ceramic components that have been moly-manganese metallized

### 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	1030 °C 1886 °F
Solidus Temperature	1000 °C 1832 °F
Coefficient of Thermal Expansion (CTE)	17.8 x 10 <sup>-6</sup> /C, for 20 – 500 °C 9.89 x 10 <sup>-6</sup> /°F, for 68 – 932 °F
Thermal Conductivity (Calculated)	70.0 W/m·K 40.4 BTU/ft·h· °F
Density	10.9 Mg/m <sup>3</sup> 0.394 lb/in <sup>3</sup>
Yield Strength (0.2% offset)	185 MPa 26.8 x 10 <sup>3</sup> lb/in <sup>2</sup>
Tensile Strength	427 MPa 62.0 x 10 <sup>3</sup> lb/in <sup>2</sup>
Elongation (2in/50mm gage section)	27.5%
Electrical Resistivity	110 x 10 <sup>-9</sup> ohm·m
Electrical Conductivity	9.1 x 10 <sup>6</sup> /ohm·m
Vapor Pressure (Calculated)	2 x 10 <sup>-9</sup> mm Hg @ 700 °C, 1292 °F 3 x 10 <sup>-6</sup> mm Hg @ 900 °C, 1652 °F
Recommended Brazing Temperatures	
Recommended Brazing Atmospheres	10 <sup>-5</sup> mm Hg, H <sub>2</sub> , 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<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
- 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.

