

## Data Sheet

# Incusil<sup>®</sup> 10

### Description:

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

Nominal composition by weight: **63% Ag, 27% Cu and 10% In**

### Prime features:

- Low melting, low vapor pressure silver braze
- Step braze with Cusil

### Typical Applications:

- Hermetic windows and assemblies
- Heat exchanger

### Suggested base materials:

- Copper, Nickel, Kovar, Metallized ceramic

### Physical Properties\*

Liquidus Temperature	730 °C 1346 °F
Solidus Temperature	685 °C 1265 °F
Coefficient of Thermal Expansion (CTE)	19.58 x 10 <sup>-6</sup> /C, for 20 – 500 °C 11.0 x 10 <sup>-6</sup> /°F, for 68 – 932 °F
Thermal Conductivity (Calculated)	85 W/m·K 49 BTU/ft·h· °F
Density	9.84 Mg/m <sup>3</sup> 0.355 lb/in <sup>3</sup>
Yield Strength (0.2% offset)	345 MPa 50 x 10 <sup>3</sup> lb/in <sup>2</sup>
Tensile Strength	420 MPa 61 x 10 <sup>3</sup> lb/in <sup>2</sup>
Elongation (2in/50mm gage section)	19%
Electrical Resistivity	90 x 10 <sup>-9</sup> ohm·m
Electrical Conductivity	11.1 x 10 <sup>6</sup> /ohm·m
Vapor Pressure (Calculated)	1.6 x 10 <sup>-9</sup> mm Hg @ 500 °C, 932 °F 1.2 x 10 <sup>-7</sup> mm Hg @ 700 °C, 1292 °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
- Flexibraze
- 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.

