



15 Mercedes Drive
Montvale, NJ 07645 U.S.A.
Telephone: 201.791.4020
Fax: 201.791.1637
www.coininginc.com



ELECTRONIC COMPONENTS
AND PACKAGING

65 Silver - 20 Copper-15 Palladium

Physical Properties of Bulk Solder

Solder Alloy Composition	65Ag20Cu15Pd (weight per cent)
Solidus temperature	850°C (1562°F)
Liquidus temperature	900°C (1652°F)
Density	10.33 kg/l
Yield strength	379 MPa
Tensile strength	448 MPa
Elongation	23%
Thermal conductivity	98 W/(m.K)
Thermal Coefficient of Expansion	$19 \times 10^{-6} K^{-1}$ (estimate)
Electrical Conductivity	$13 \times 10^6 / \Omega m$
Electrical Resistivity	7.8 $\mu\Omega cm$

Typical impurity levels for electronic grade/ vacuum tube grade are less than:

Pb: 0.002 Zn: 0.002 P : 0.020

Cd: 0.002 C : 0.005

Volatile elements each 0.002 % max.

Other elements each 0.005% max.

Total other elements 0.010% max.

AgCu-alloys are generally used to join, silver, copper and nickel base alloys in reducing or inert atmospheres or vacuum. They are also widely used to join metalized ceramics to metals in vacuum. This assumes reasonably-clean brazing surfaces or controlled atmosphere during the brazing cycle. If and when the components are slightly oxidized, a combination with higher temperatures and/or longer brazing temperatures is required.

Joint clearance is recommended at 0.002" - .005" (50-127 μm).

During remelting joints on either copper- or silver-base alloys, the braze exhibits decreased fluidity and an increased remelt temperature, due to the solution of either silver or copper in the eutectic. Brazing time and temperature should be minimized to prevent excessive diffusion and erosion of the base metal.

AgCu-based filler materials have limited wetting ability on iron and/or nickel base alloys. The wetting it does have is derived primarily from its copper and palladium content. Both nickel and iron have practically no solubility in silver. The addition of palladium to the AgCu-alloy enables good wetting to Ni and Ni-alloys, Kovar, (low-) alloyed steels, tool steels and Stainless steels. It further prevents intermetallic building in the joint area

The information contained herein is based on data considered accurate and is offered at no charge. No warranty is expressed or implied regarding the accuracy of this data. Liability is expressly disclaimed for any loss or injury arising out of the use of this information or the use of any materials designated.