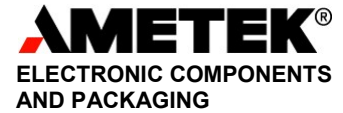




15 Mercedes Drive
Montvale, NJ 07645 U.S.A.
Telephone: 201.791.4020
Fax: 201.791.1637
www.coininginc.com



ELECTRONIC COMPONENTS
AND PACKAGING

93.5 Lead-1.5 Silver-5Tin

Physical Properties of Bulk Solder

Solder Alloy Composition	93.5Pb-1.5Ag-5Sn (weight per cent)
Melting range	296-301°C
Density	11.10 Mg/m ³
Thermal conductivity	0.22 W/cm K ⁻¹
Electrical conductivity	5.2% IACS
Coefficient of Thermal Expansion	25.0 x 10 ⁻⁶ K ⁻¹
Tensile strength (est.)	30 GNm ⁻²
Bonding strength	18 GNm ⁻²

Typical impurity levels for electronic grade are less then:

Au: 0.05	Cu: 0.08	Ni: 0.01	Al: 0.0005
Bi: 0.001	Fe: 0.02	Zn: 0.0003	As: 0.0003
Cd: 0.002	In: 0.10		

Application: The 93.5Pb1.5Ag5Sn-alloy is used for the manufacture of semiconductor components. It combines a higher melting range, with good mechanical strength and thermal fatigue properties. The 5% tin and the 1.5 Ag additions assure a good wetting to copper leads and Au-flash coated Si-chips in die-attach applications. The melting temperature range is wide enough to permit two-or even three-step soldering. The higher melting range makes the alloy also very suitable for fluxless soldering in an inert or reducing atmosphere.

The 5% Sn solder is a high-temperature silver-bearing solder with good thermal fatigue properties. It is used in the assembly of diodes and rectifiers in belt furnaces with a forming gas mixture (N₂, H₂) or cracked anhydrous ammonia (75%H₂, 25%N₂).

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.