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Data Sheet: 92.5 Lead - 5In - 2.5 Silver

Physical Properties of Bulk Solder

Solder Alloy Composition	92.5Pb-2.5Ag-5In (weight per cent)
Melting point	300°C
Density	8.50 Mg/m³
Thermal conductivity	0.25 W/cm K^{-1}
Electrical conductivity	5.5% IACS
Coefficient of Thermal Expansion	25.0 x 10^{-6} K^{-1}
Tensile strength	31.4 GNm^{-2}
Bonding strength	19.5 GNm^{-2}

Typical impurity levels for electronic grade are less then:

Au: 0.05	Cu: 0.08	Ni: 0.01	Al: 0.005
Bi: 0.10	Fe: 0.02	Zn: 0.003	As: 0.03
Cd: 0.002	Sn: 0.10		

Application: In comparison with conventional tin-lead solders, the indium-lead based solders have improved thermal fatigue characteristics, and they greatly reduce the scavenging of gold surfaces. The temperature range is wide enough to permit two-or even three-step soldering. The 5% In solder is a high-temperature silver-bearing solder with good thermal fatigue properties. It is used extensively in the assembly of diodes and rectifiers.
For assuring good soldering/wetting the temperature profile must be extended with longer time-above melting point (TAM) and maximal soldering temperature (Tmax) than usual for high-Pb alloys. Typical data are:
Light components: TAM 1.5-2 minutes, Tmax 355 °C
Heavy components: TAM 3-4 minutes, Tmax365°C.
When a lower Tmax is used, which should be 340°C minimal, a TAM of up to 5 minutes must be used.

Due to the alloying element indium, the parts of this alloy need careful packaging and storage. Packaging should be done in either glass vials or Al-lined plastic bags with inert gas filling, desiccant and air-tight sealing. The alloy is sensitive to oxidation and high-humidity conditions.