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Lead Free Alloys in SolderQuik™ BGA Preforms

Application Notes

Winslow Automation's SolderQuik™ BGA Reballing Preforms are available in a Lead Free version that utilizes spheres composed of Sn96.5(Tin)-Ag3.0(Silver)-Cu0.5(Copper) alloy. The highlighted **S**, **A** and **C** are the root of the popular SAC acronym used by many to differentiate between copper and non-copper bearing Tin-rich lead free alloys.

The selection of this alloy as Winslow Automation's choice for inclusion in this product line was driven by three factors: the vast majority of our lead free customers requested this alloy, it is approved by the National Electronics Manufacturing Initiative for SMT reflow and has the smallest plasticity range of the copper bearing lead free alloys (217-220° C).

We receive many requests for lead free alloy spheres that are similar to but not an exact match with the Sn96.5-Ag3.0-Cu0.5 alloy that we stock.

As specified in J-STD-006 section 3.2 the nominal mass percentage of the component elements shall not deviate by more than 0.20% when their nominal percentage is equal to or less than 0.50% or by more than 0.50% when their nominal percentage is equal to or less than 5.0%.

As demonstrated by the standard a difference of 1 or 2 tenths of a percentage point in an elements mass not only meet the standard but also is not likely to affect the performance characteristics of the alloy.

Winslow Automation is committed to complying with customer call-outs whenever possible. Due to minimum buy quantities and shelf life issues it is not possible for us to stock every alloy offering. We recommend that applications of this nature be reviewed for compatibility with common, popular alloys whenever possible.

As always, Winslow Automation, Inc. will quote the use of custom alloys in its products with the stipulation that additional charges may be incurred and lead times can increase. It is our policy that orders involving custom alloys cannot be canceled.