Converting solder baths containing popular SnCu alloys (including SN100C) to ALPHA SnCX™ Plus 07

Alpha Americas

Alpha is regularly asked by electronics assemblers for guidance on converting their current SnCu alloy solder bath to ALPHA SnCX™Plus 07. While there are many different assembly processes in use, this document has been prepared to provide a general method for performing this conversion. Note that if the assembler is experiencing significant process, soldering performance or reliability issues with their current SnCu alloy they should consider converting to one of Alpha's silver (Ag) bearing, SACX Plus, alloys.

The following recommendation assumes that the assemblers process is under control and that the alloy currently in the bath is within its original manufacturers specification.

There are two ways to convert a SnCu solder bath to bath to ALPHA SnCX™Plus 07.

1 - Pot Swap
This is the preferred and by far the simplest method of converting the solder bath quickly to ALPHA SnCX™Plus 07 and there is no financial loss involved as the reclaim material credit will offset the purchase cost of the ALPHA SnCX™Plus 07. To perform the Pot Swap:

1. Receive a Quote for the ALPHA SnCX™Plus 07 solder.
2. Place order for sufficient quantity of solder required to fill the intended solder bath and to replace the current stock level of the SnCu alloy in use.
3. A Return Material Authorization will be provided for the same quantity of solder as listed on the order and credit will be offered for the solder drained from the solder bath and for stock quantity level. This material is to be returned to Alpha and the total weight will be confirmed and the credit provided.

2 – Gradual Conversion of the Solder Bath

Following this method, the assembler simply replaces their current stock of the SnCu alloy being used with ALPHA SnCX™Plus 07. As with the Pot Swap procedure, the assembler will receive a credit for this material which can be applied toward the purchase cost of their initial order(s) of ALPHA SnCX™Plus 07. After this, the assembler simply begins by using the ALPHA SnCX™Plus 07 alloy to replenish their solder bath as solder is consumed.

- It is recommended that an initial assay be performed on the alloy in the solder bath. If found to contain high levels of copper (Cu), replenishment using ALPHA SnCX™Plus 00 may be recommended until Cu levels drop to acceptable levels.
- During the conversion period, it is recommended that regular solder assays be performed to ensure that Cu and antioxidant (AO) levels stay in spec.

Under this conversion program, Alpha will provide a sufficient number of free solder assays, as well as, remote and on-site applications engineering support as needed to ensure a smooth transition to ALPHA SnCX™Plus 07.

It is important to note that, while many current users of ALPHA SnCX™Plus 07 followed the gradual conversion method without experiencing any issues, Alpha has no data to help predict the performance of the multiple different alloy compositions that form when combining two different SnCu alloys which may contain different micro additives. Because of this, Alpha assumes no liability for issues which may occur as a result of following the gradual method of conversion.