



SN100CL Lead Free HASL

DESCRIPTION

The transition to lead free solder in the assembly industry has forced many to seriously look into their PCB final finish. One of the most popular final finishes is known as Hot Air Surface Leveling otherwise known as HASL. We at Florida CirTech, in collaboration with Nihon Superior, have established a viable lead free HASL process utilizing the Nihon Superior SN100CL lead free solder alloy. Testing to date has shown that the SN100CL lead free HASL process offers superior solderability to the final finishes on the market today (1).

All of the final finishes available on the market today have both their merits and demerits. Many in the board industry are concerned about switching from HASL to a less forgiving final finish as they transition to the up and coming lead free era. Our process should ease these concerns. This process is also directed towards those who are not completely satisfied with their current final finish.

There are two major lead free solder alloys on the market today: SN100CL and the SAC alloy.

The SN100CL nominal composition is a stabilized eutectic tin/nickel/copper.

The SAC 305 alloy consists of tin, copper and 3% silver.

The advantages of SN100CL lead free HASL are summarized below:

- A robust process
- Improved shelf life compared to 63/37 (2)
- Minimal temperature increase in the solder pot (Solder pot temp est. 485-500oF)
- No copper attack (e.g., copper traces, holes on circuit board).
- Minimal stainless steel attack. SAC 305 alloy rapidly attacks Stainless Steel
- Superior wetting yielding a more uniform and flat surface
- Capable of handling very fine pitch due to excellent wetting
- Compatible with both conventional 63/37 and lead free final assembly
- More economical (No Silver)

We now have many vertical machines in operation. Samples are available upon request. We would also be very happy to coat a small number of boards so you can see the superior coating this process offers. If you have an interest, please contact you local FCT salesperson or representative and they will be happy to assist you. You can also contact Glenn Sikorcin as he is the head person in charge of this project. He can be reached at 847-812- 5800 or via email at glenn@floridacirtech.com.





(1) Solderability of Sn/Cu Lead-Free Solder as a HASL Bare Board Final Finish, Proceedings at the IPC surface finishes meeting held in Minneapolis MN, Oct 2003. Authored by Tony Lentz and Thomas Scimeca, Ph.D.

(2) Based on solderability testing of heat aged boards

This figure below shows the greater uniformity of the SN100CL HASL versus 63/37 HASL

