

Questions from NEMI Pb-Free Presentation

APEX - 17 Jan 01

E. Benedetto

Carol H.

- When will the alloy team s data be available? (*approximately April*)¹
- What is the acceptable level of Pb contamination in no-lead? (*0.2%*)
- Is there a second phase planned for study of additional Pb-free alloys? (*no*)

Jasbir B.

- Are there plans to test boards assembled in air, or is nitrogen mandatory? (*need more data*)
- Explain the issue seen regarding stencil life.
- Why was there a volume difference between SnPb and SnAgCu? (*using non-optimized formulations*)
- Why is there an increase in voids w/ SnAgCu? (*likely due to the fact that SnAgCu has higher surface tension than SnPb*)
- During BGA rework, was any effort made to look at temperature of adjacent components? (*test boards were not designed for close proximity*)
- Did you reflow the SnPb paste at higher Temp to determine whether higher Temp increased voiding? (*no*)

John S.

- Are the temperature regions you have chosen correct for relaxation of SnAgCu? (*IBM has shown that these temperatures are appropriate*)
- Can you compare these tests with other tests having dwell times of 10-12 minutes? (*no*)
- Have you checked for warpage of FR4 material? (*component group should be looking at that*)
- Have you characterized the thermal expansion of the components and PCBs at these elevated temperatures? (*no, but we should*)

Rich P.

- What is the targeted timeline for ITRI s report on FR4 substrates? (*don t know*)
- Are you going to push for standardization on a specific Pb-free finish/plating? (*no*)
- Where was temperature measured? (*at the joint*)
- Where is the thermal profile published? (*NEMI website*)
- Is there a universal bake time/temp needed to eliminate moisture issues? (*standard 24-48 hours at 125C*)
- Is ITRI also looking at flex and polyimide substrates? (*don t think so*)

Edwin B.

- How should we change our current processes to include Pb-free finish with standard SnPb solder? (*shouldn t need to change current process with current solder — finish should be compatible*)
- What is the effect of Pb contamination on Pb-free wave pot, what is the pickup rate, and how often will we need to empty pot because we ve exceeded 0.2% Pb? (*no data at this time*)
- What is the plan to model the data? (*will be discussed at TMS New Orleans meeting*)
- Has NEMI looked at Pb-free replacements for high temperature or low temperature alloys? (*no — however, HDPUG looking at SnBi*)
- Wave soldering is a major concern due to fillet tearing/lifting.
- Is anyone looking at conductive polymers? (*do not appear to have needed strength*)
- According to JEIDA, Japan has gone to SnAgCu. Does NEMI plan to discuss data with JEIDA? (*NEMI is being open with data*)

¹ Answers are in parenthetical blue italics