Wettability Study Of Lead Free Solder Paste And Its Effect Towards Multiple Reflow

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ABSTRACT
Nowadays, wafer bumping using solder paste has come into focus as it provides a low cost method. However, since the industries are moving towards lead-free electronic packaging, a new type of no-clean flux was produced specifically for lead-free solder paste. Therefore, this study is used to evaluate the wettability of two different types of no-clean flux onto copper substrate. Besides, its effect towards multiple reflow was also studied. Reflow soldering was conducted for both types of solder paste that contained different type of no-clean flux for up to double reflow. Two different reflow profile was used. The results showed that the Flux A exhibit better soldering performance after first and second reflow soldering. In addition, type of intermetallic compound (IMC) found after first reflow remain the same even after second reflow which was Cu-Sn based. This is shows that Flux A manage to control the diffusion process which will finally leads to a better solder joint performance. Nevertheless, mechanical testing should be carried out in order to evaluate the solder joint strength.

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