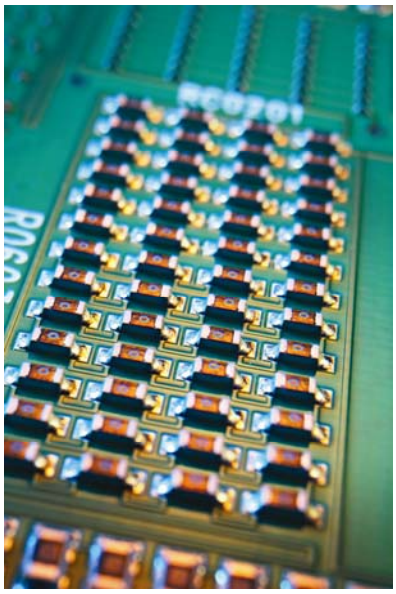
Pushing Beyond the Status Quo

New Lead-Free Solder Paste offers the Ultimate in Performance and Versatility

by Mark Currie, Ph.D., Henkel Corporation

Though much of the chatter about the lead-free transition has quieted as the electronics industry seems to have settled into the new manufacturing requirements, that's doesn't mean lead-free innovation has followed suit. In fact, nothing could be further from the truth – at least as far as some materials suppliers are concerned. There are still countless applications where traditional SAC formulations simply don't deliver. These include the automotive sector that requires supreme reliability; the packaging market where board-level SAC alloys don't do the trick for package-level needs; and, power devices that require die attach solders with outstanding performance. Indeed, these applications dictate Pb-formulations different than those used for mainstream SMT processes and new materials --- such as the Innolot alloy for automotive -- have been and are being developed to address these unique market sectors.



But, these aren't the only areas where advances have been made. The PCB assembly market, though more mature than others in relation to lead-free, could still do with some innovative improvements when it comes to Pb-free. Henkel has recognized this for some time and continues to push the envelope when it comes to lead-free materials development. Though many successful materials have been launched, Henkel isn't content to rest on our laurels, which is why we've engineered Multicore LF620: a halide-free, no-clean, lead-free solder paste which builds on the Pb-free evolution and offers manufacturers a single solution for a variety of requirements.

For one, Multicore LF620 is ideal for multi-national firms who wish to deploy a single material worldwide. With its consistent performance in even in regions where temperatures are upwards of 30°C (86°F) with relative humidity as high as 80%, Multicore LF620 still delivers superior prints. What's more, this adaptability doesn't mean you have to compromise on process, as the material has been proven for stencil printing down to 0.4mm pitch QFPs, 0.4mm CSPs and is extremely effective on a wide range of surface finishes including Ni/Au, Immersion Sn, Immersion Ag and OSP Copper.

One of the more well-publicized challenges with older-generation lead-free solder pastes is increased voiding as compared to tin-lead alloys. Henkel solved this dilemma

through the use of flux chemistry expertise to reduce volatile compound formation and this know-how has also been applied to Multicore LF620. This material has been proven to deliver very low void instances in CSP via-in-pad joints, which ultimately improves reliability and in-field performance.

But the list of advantages offered with Multicore LF620 doesn't stop there. Its many benefits include high tack force for resistance to component movement during high-speed placement, long printer abandon and work-life times of up to four hours and 24 hours respectively, extremely low hot slump, excellent wetting and more. Multicore LF620 really does have it all for any assembly specialist that requires excellent printability at low or high speeds, brick-like print definition and high throughput operations where yield consistency on print deposits is critical.

Though suitable for just about any end-use application, Multicore LF620 has also successfully tackled the challenges associated with multi-functional, complex boards and smaller hand-held device PCBs that require finer-pitches, reduced board sizes and higher functionality. These demands have been met with Multicore LF620. And, for applications such as automotive that need a larger reflow process window and a more robust flux system, this latest Henkel lead-free solder paste also fits the bill.

So, while the PCB assembly market has certainly come a long way with lead-free, Henkel is confident that Multicore LF620 pushes us down the high reliability and ease of use path even further. Try it and see for yourself.

For more information on Multicore LF620, call 1-888-9Henkel or log onto www.henkel.com/electronics.