Temperature Stable Solder Paste Transforming Industry Mindset

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The concept to develop a temperature stable solder paste – a material that could be shipped without special provisions, stored at room temperature and provide stability on the line – was conceived in order to satisfy the various voices of concern in the electronics industry. Until recently, competing drivers had prevented a single solution. Logistics management wanted to meet targets through reduced cost, while operations professionals needed a high-quality product that could improve throughput and deliver high-yields. Developing a material to address both sets of demands had proven to be quite difficult, to say the least.

What began as an industry wish list, however, is now a market reality and one that is confirming its worth both on and off the line. The breakthrough development of the market's first-ever temperature stable solder paste, LOCTITE® GC 10, is successfully delivering value throughout the logistics and operations chain. Formulated to provide temperature stability at 26.5°C for one year and at temperatures of up to 40°C for one month, LOCTITE GC 10 offers logistics personnel the unprecedented ability to ship the material via standard shipping and without any cold-packing requirements. Once the material arrives at its destination, it can be stored at room temperature – no refrigeration required – and provides huge process benefits on the line.

Whereas most solder paste material average abandon times ranging from 1 to 4 hours, the halogen-free, lead-free, temperature-stable LOCTITE GC 10 enables abandon times of up to 24 hours and has a startup time of zero. Stabilized and consistent print transfer efficiency, an expanded reflow window and increased activity for better results with soak temperatures between 150°C and 200°C, make LOCTITE GC 10 incomparable among other paste materials. The solder system's stability on the line allows for significant cost savings with on-line paste utilization of more than 95%. The reductions in solder-related defects achieved with LOCTITE GC 10's process performance result in higher yields and improved profitability.

And, while all of the material benefits are well-documented from the initial development and global trials, which occurred over a four-year period, it is the post-launch market response and quick adoption among leading electronics firms that has the industry taking note.

Matt Polak, owner of Valley View, Ohio-based Raven Systems Design, describes his experience with LOCTITE GC 10. "We have always had issues with paste drying out prematurely and clogging fine-pitch apertures, even during the course of a daily production run," he explains. "Because of the fine-pitch, high density nature and the reliability requirements of the products we are producing, re-using paste has always been out of the question and we expect to discard a minimum of 1/3 of the unused paste of every jar we open.

LOCTITE GC 10 has completely changed our traditional working models. The paste has given us nothing but perfect, consistent results with no refrigeration. In our evaluation, LOCTITE GC 10 came out of the jar perfect and the printing results at 60 hours were just as good as they were an hour after opening the jar. It printed and reflowed flawlessly and we achieved very close to 100% yield. In addition, we didn't experience any aperture clogging, the stencil cleaned up easily and the paste didn't dry out. The cost savings for our business are substantial and far outweigh any incremental cost differential versus competitive pastes. LOCTITE GC 10 is absolutely the 'game changer' it claims to be!"

Leading EMS partner and long-standing Henkel customer, Morey Corporation, has also integrated LOCTITE GC 10 into its manufacturing operations. "Outside of its excellent process performance, which is always our top priority, the sheer simplicity and cost savings realized by LOCTITE GC 10's hassle-free material management are incredible," notes Chris Murphy, Morey's Technical Steward and a 30-year veteran of the Illinois-based EMS firm. "There is no taking it out of the refrigerator hours before a shift, no complex labeling and, best of all, start-up time is zero. We just take it off the shelf, put it on the stencil and start printing boards. We've left LOCTITE GC 10 on the stencil for more than eight hours and it was as creamy as when we first opened the jar – no kneading required. Plus, we can do away with expensive overnight shipping of solder paste and the worry about temperature exposure. With LOCTITE GC 10, we have a lot more latitude and that translates to a more efficient operation."

Across the globe, LOCTITE GC 10 is transforming the way electronics manufacturers like Raven Systems Design and Morey Corporation think about solder paste capability and performance. Find out what LOCTITE GC 10 can do for your yield and profitability. Visit www.soldergamechanger.com or call +1-714-368-8000.