



## Press release

Irvine, California, July 22, 2009

# Henkel Launches High-Lead and Lead-Free Capable Die Attach Solder Paste for Enhanced Thermal Control of Power Devices

To address the thermal requirements posed by smaller outline, higher functioning power semiconductor devices, Henkel has formulated an advanced die attach solder paste suitable for both high-lead and lead-free applications. Under the leading Multicore® brand of solder materials, this innovative product ensures the thermal management efficiency critical for excellent long-term reliability and performance.

Multicore® DA100™ incorporates a no clean, ROLO flux system that can be used for high-lead applications and uniquely offers capability for lead-free processes as well. Using specific high temperature Pb-free alloys to offer the same thermal control necessary for today's rectifiers, power transistors, amplifiers, and many other consumer and automotive components, Multicore DA100 effectively complies with the environmental goal of lead elimination in power packages by 2013, as stipulated by ROHS legislation. Furthermore, packaging specialists that wish to use high-lead solders today, can easily move to lead-free solders tomorrow, while utilizing the same flux system offered through Multicore® DA100™. This ability to employ a consistent flux system is extremely beneficial to customers, as it minimizes the impact of flux reliability evaluation programs for such critical elements as cleanability, wire bonding and molding, among others.

Though silver-based die attach adhesives or pure solder wire have historically been used for power device applications, their processability and effectiveness are limited, particularly as the industry continues to migrate toward more highly miniaturized devices and lead-free legislation. Therefore, die attach solder pastes have emerged as the material of choice for many power semiconductor applications.



“While older generation die attach materials have relevance for certain products, their ease of use, limited heat transfer capabilities and precise deposition challenges for smaller outline semiconductor power devices is driving packaging specialists toward die attach solder alternatives,” explains Henkel Global Product Manager for Semiconductor Soldering, Dr. Mark Currie. “The functionality that is now packed into the ever smaller footprints of modern power packages dictates massive thermal dissipation capability and solder die attach is the most viable solution.”

As these devices will travel through extremely high temperatures during printed circuit board (PCB) assembly, the melt point of the die attach solder paste must exceed the processing temperature – in other words, maintain the solder melting point hierarchy -- to ensure component stability for both high-lead and lead-free applications.

Also key to successful performance for die attach solder pastes are their wetting adaptability, void reduction capabilities and dispensability. Though many current leadframe finishes are copper, newer package designs are witnessing the emergence of alternative metallization. Therefore, wetting adaptability to copper as well as NiPdAu and Ag finishes, among others, is essential. In addition, Multicore DA100, delivers exceptionally low void formation, which is a critical characteristic to ensure optimized electrical and thermal conductivity and overall device reliability. While the packaging industry has generally accepted void percentages that range from 10% to 20%, Henkel believes that fewer voids mean stronger interconnects, improved thermal conductivity and, therefore, has engineered its Multicore die attach solder portfolio to exhibit less than 5% void instances on average. As compared to traditional flux systems, Multicore DA100 is formulated specifically to hold a higher metal loading for dispensable applications. The material offers excellent dispense capability with outstanding pause time and dot to dot consistency, superior cleaning adaptability through compatibility with a variety of commercialized solvents and 12-month storage stability with no material degradation.

“We have essentially taken our customers’ wish lists and combined them with our technology roadmap to deliver a portfolio of solder die attach products with the proven performance for today’s requirements and the forward-looking capabilities for tomorrow’s most miniaturized devices,” concludes Currie. “Multicore DA100 has been engineered to meet the most rigorous demands of today’s power device processes.”

For more information on Henkel’s Multicore die attach solder product line, log onto [www.henkel.com/electronics](http://www.henkel.com/electronics) or call the company’s headquarters at 949-789-2500.

## **About Henkel**

Henkel has been committed to making people's lives easier, better and more beautiful for more than 130 years. A Fortune Global 500 and Germany's most admired company according to a recent Fortune survey, Henkel offers strong brands and technologies in three areas of competence: Home Care, Personal Care and Adhesive Technologies. Each day, more than 52,000 employees in 125 countries are dedicated to fulfilling Henkel's claim "A Brand like a Friend." In fiscal 2008, Henkel generated sales of 14,131 million euros and adjusted operating profit of 1,460 million euros.

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