



Press release

Irvine, California, September 9, 2009

Henkel's Pioneering Ablestik® Self-Filleting® Die Attach Receives Notice that First Patent to Grant

Henkel Corporation today announced that the United States Patent and Trademark Office (USPTO) has allowed a patent covering its Ablestik® Self-Filleting® die attach products and controlled flow technique, which have been designed and perfected by the company over the past five years.

United States Patent Application No. 11/581,759 broadly discloses the parameters of the process required to achieve a bondline fillet using specially formulated die attach paste materials and covers a method for attaching a semiconductor die to a substrate or to another die in a stacked arrangement. The method comprises dispensing an adhesive between the die and the substrate, or between two dies, and subjecting the adhesive to conditions suitable to cure the adhesive, causing the adhesive to flow and fill up the area between the dies or between the die and the substrate forming a bondline, but not a bulky fillet.

"We are delighted that our ingenuity and diligence in bringing this important technology to market have been validated by the allowance of a United States patent and believe that as a viable alternative to film die attach mechanisms, Henkel's Ablestik Self-Filleting die attach materials and controlled flow process offer manufacturers the convenience of proven paste-based manufacturing methodologies without the drawbacks associated with traditional die attach techniques when using thin die," comments Joseph DeBiase, Senior Vice-President of Henkel Corporation's Electronic Materials Division.

Historically, die attach materials have relied on extremely precise dispense patterns in combination with die placement force to promote material flow, determine bondline thickness and encourage wetting. Henkel's Ablestik Self-Filleting die attach materials and its controlled flow process, however, use capillary force, surface tension and dispense volume to control



these manufacturing parameters. With this controlled flow technique, bondlines as thin as 10 microns have been achieved and can be modified easily based on application-specific requirements. Film, on the other hand, is generally supplied in pre-determined thicknesses, making process flexibility difficult. In addition, the controlled flow methodology in combination with Ablestik Self-Filleting die attach materials requires that very little force be used when placing the die – an important consideration for reducing die damage as the industry continues to move toward ever-thinner and more fragile die.

Using traditional automatic dispensing technology, a small amount of Ablestik Self-Filleting die attach paste is deposited and the die is then placed gently onto the material. The die attach paste then moves to the edge of the die where it independently stops and forms a bondline fillet, but not a bulky fillet. Therefore, contrary to what may occur with standard die attach pastes, there is no risk of material overflow and die top contamination when using Ablestik Self-Filleting materials.

“Controlled flow technology and Ablestik Self-Filleting die attach materials provide package designers with greater latitude and packaging specialists with much more process flexibility,” concludes DeBiase. “The allowance of this patent underscores the significance of this technology advance for the semiconductor industry.”

For more information about Henkel’s Ablestik Self-Filleting die attach products or details regarding the patent, call the company 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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