

Press release

May 13, 2020

MacDermid Alpha Electronics Solutions, Henkel and Heraeus solution provides high reliability for high-temperature applications

Major suppliers in electronics assembly materials awarded U.S. Patent for Innolot/Loctite 90ISC alloy

Düsseldorf, Germany – Three major suppliers in electronics assembly materials, MacDermid Alpha Electronics Solutions, Henkel, and Heraeus, received notice that the United States Patent and Trademark Office has issued Patent No. US10376994B2 for their innovative solder alloy formulation marketed under the brand names Innolot (Heraeus & Alpha) and Loctite 90ISC (Henkel). The patent was granted an extended expiration to June 11, 2029.

The technology was developed in a cooperative project to produce a lead-free solder alloy specifically for harsh environment electronics applications. The result was an alloy with markedly improved reliability performance as compared to standard SAC alloys. Promoted in the electronics market for over ten years, the respective Innolot and Loctite 90ISC products are widely recognized as a high-reliability, thermal cycling, thermal ageing and vibration-resistant alloy, making it well suited for automotive applications and assemblies. The Innolot/90ISC alloy is designed to tolerate the demands of high-temperature applications while still being solderable at standard lead-free process temperatures.

The issuance of the U.S. patent is a further achievement for MacDermid Alpha, Henkel, and Heraeus and their efforts towards creating innovative materials for the challenges and demands of today's electronics assembly. "This granted US patent demonstrates Henkel's technology leadership and defends a growing product category," said Rodrigo Aguilar, Business Development Manager for Automotive and Electronics. "Loctite 90iSC alloy has been widely adopted by automotive electronics in past years, and we expect exciting new opportunities driven by innovation in automotive components and other markets where reliability is paramount."



MacDermid Alpha Electronics Solutions, Henkel, and Heraeus market Innolot and Loctite 90ISC products in a variety of forms including solder paste, bar solder, and wire. Patents are currently held in EU (EP1617968B1) and Japan (JP5320556B2).

For more information about Loctite 90ISC please visit:

<https://www.linkedin.com/pulse/solder-joint-reliability-automotive-electronics-act-aquilar-limas>

About Henkel

Henkel operates globally with a well-balanced and diversified portfolio. The company holds leading positions with its three business units in both industrial and consumer businesses thanks to strong brands, innovations and technologies. Henkel Adhesive Technologies is the global leader in the adhesives market – across all industry segments worldwide. In its Laundry & Home Care and Beauty Care businesses, Henkel holds leading positions in many markets and categories around the world. Founded in 1876, Henkel looks back on more than 140 years of success. In 2019, Henkel reported sales of more than 20 billion euros and adjusted operating profit of more than 3.2 billion euros. Henkel employs more than 52,000 people globally – a passionate and highly diverse team, united by a strong company culture, a common purpose to create sustainable value, and shared values. As a recognized leader in sustainability, Henkel holds top positions in many international indices and rankings. Henkel's preferred shares are listed in the German stock index DAX. For more information, please visit www.henkel.com.

About MacDermid Alpha Electronics Solutions

Through the innovation of specialty chemicals and materials under our Alpha, Kester, Compugraphics, and MacDermid Enthone brands, MacDermid Alpha Electronics Solutions provides solutions that power electronics interconnection. We serve all global regions and every step of device manufacturing within each segment of the electronics supply chain. The experts in our Semiconductor Solutions, Circuitry Solutions, and Assembly Solutions divisions collaborate in design, implementation, and technical service to ensure success for our partner clients. Our solutions enable our customers' manufacture of extraordinary electronic devices at high productivity and reduced cycle time. Find out more at MacDermidAlpha.com.

About Heraeus

The Hanau-based Heraeus technology group is one of the world's leading family-owned portfolio companies. The roots of the company, founded in 1851, go back to a pharmacy run by the family since 1660. Today, Heraeus bundles a large number of businesses in the fields of environment, energy, electronics, health, mobility, and industrial applications. In fiscal year 2018, Heraeus generated total revenues of 20.3 billion euros and employs approximately 15,000 people (including temporary workers) in 40 countries. Today, Heraeus is one of the top 10 family-owned companies in Germany and has a leading position in its global sales markets. With professional competence, excellence, a focus on innovation and an entrepreneurial management culture, we strive to continuously improve our performance. We create high-quality solutions for our customers and sustainably strengthen their competitiveness by combining unique materials expertise with technological leadership.

Contact Sebastian Hinz
Phone +49 211 797 8594
Email sebastian.hinz@henkel.com

Henkel AG & Co. KGaA