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From Solder to Hot Melt: LPMS Evolves with the Industry's Needs

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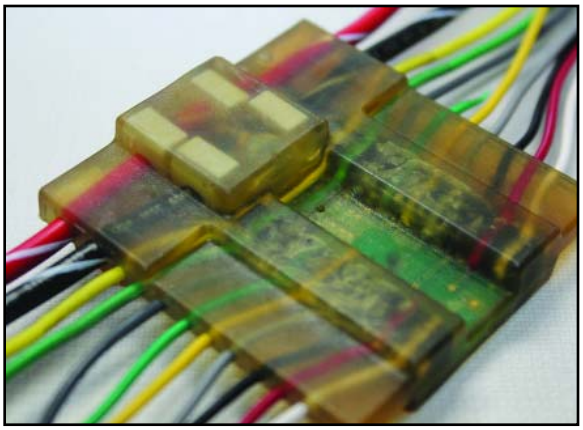
In 1995, a young inside sales engineer, Brian Betti, began selling solder pastes and wire for Qualitek International. By '98, Betti had moved to Multicore Solders which was soon purchased by the Loctite Electronics division of Henkel. The same year, a recently established European technology, Macromelt® Moulding, utilizing hot melt adhesives from Henkel Corporation was making its debut in the North America cable market.

Solutions Across the Board

While serving as the Midwest regional sales representative for Henkel Electronics, with the marketing slogan "Solutions Across the Board," Betti came across the Macromelt Moulding technology in a competitive situation within the Henkel family of sales. In the spring of 2003 working on a PCB protection project with an OEM subcontractor, leading with a typical epoxy potting compound, he stumbled on the molding technology being pursued by a local chemist for Henkel. The molding technology was selected due to its lower cost and simplicity.



LPMS multiwire PCB.

As a highly regarded salesman who would later become the director of sales in both the aerospace electronics and then industrial electronics divisions of Henkel, Betti saw a lack of emphasis put on the molding technology.

From 2003 to 2017 he was an influential leader in the efforts to develop new and relevant products, data driven marketing, global support and training and most importantly partnerships with equipment suppliers and tool and die makers to ensure Henkel could offer the full package.

During this period, the technology was rebranded as "low pressure molding" (LPM), taking advantage of the key attribute of the hot melt resin — low viscosity. Injection pressures are a small fraction of traditional plastic molding as the materials are liquid in the molten state. This made large, high-tonnage extruders and injection molding equipment unnecessary for the process. Equipment size and cost became smaller and utilized gear

pumps as the delivery system.

Realizing there weren't enough equipment and engineering partners nor an IPC standard for LPM, Betti pushed his colleagues at Henkel to investigate more options. This would lend technical expertise to the standards committee for LPM to establish guidelines.

It was then that he began working with LPMS International, the largest global supplier of LPM solutions and founded in 2004 by its Taiwanese mechanical engineer, Grant Liu. Liu had followed a similar path of success through sales at Henkel as Betti did and established a subsidiary in the United States in 2012.

The Whole Package

In 2016, Betti purchased LPMS USA and moved it to its current location in Downers Grove, Illinois, just miles away from Chicago's O'Hare International airport. Fast forward five years and LPMS USA has become a global supplier of all pieces of the LPM electronics protection package. "We work with our customers overcoming demanding design and production obstacles to achieve an extraordinary level of sealing and protection against harsh environments," says Betti. Realizing that almost twenty years after his first encounter with LPM that is still relatively unknown in the market, he was determined to make LPMS USA a source for the entire solution or any part of it.

The company partners with OEMs and contract manufacturers in the NAFTA region providing the largest selection of molding machines. From the hand-held Alpha 100 pneumatic gun to the Kappa 900HH rotary table production unit, LPMS USA has a solution for any volume. Fully customized

LPMS multiwire PCB.

versions of each platform including in-line installation, hot runner and melt on demand systems are available as options.

Employing an energetic team of mechanical design engineers, LPMS USA relieves the stress and learning curve of mold-set design for use with the low viscosity plastics. Produced in hardened stainless steel and cross drilled for more effective temperature control with direct cooling, production grade tools are warrantied for one million cycles. Prototype trials and tooling modifications are completed onsite in LPMS USA's tool shop.

Realizing that customers may be hesitant to dive directly into the capital purchase of equipment and the costs of manufacturing, Betti insisted on the addition of a contract manufacturing division that was flexible to meet demanding customer requirements. This ISO 9001:2015 certified team of engineers has expanded quickly to include pre-molding work including soldering, testing, and IPC A-610 inspection.

Circling back to his time at Henkel, Betti realized the main challenge for the technology was the expanding list of environmental requirements and sealing ratings. For decades the materials could only meet IP 67 seal ratings (IEC 60529) for ingress protection, didn't have IS0 10993 certification for medical use and weren't appealing for most consumer electronics use.

Forging partnerships with the leading hot melt manufacturers in the world, the hot melts have evolved in a short period of time to not only meet the medical standards, but also now meet IP69K submersion and chemical exposure.

The LPMS USA Spectramelt™ product line specializes in additive technology to enhance the hot melt properties including but not limited to color pigmentation, UV stabilizers, optical brighteners and thermal conductivity.

Having reached the five-year anniversary under Brian Betti's leadership in 2021, LPMS USA has lived up to his vision of being a solution provider with a solution across the board.

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