

Taking off the Mask

Automated, Dispensable, Peelable Electronics Masking Solution Eliminates Manual, Time-Consuming Processes

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Nearly all printed circuit board assemblies go through some type of circuit board protection process, whether that's conformal coating, potting or low pressure molding. The purpose, of course, is to protect the electronics from the environmental effects of moisture (humidity), corrosive materials, contamination or mechanical stress, thereby improving reliability and performance. While potting and low pressure molding techniques generally encapsulate the entire assembly, conformal coating allows for selective protection of certain areas. This capability becomes important for assemblies that may require rework of specific components in order to preserve the integrity of the rest of the PCB, as in the case of high-value boards.

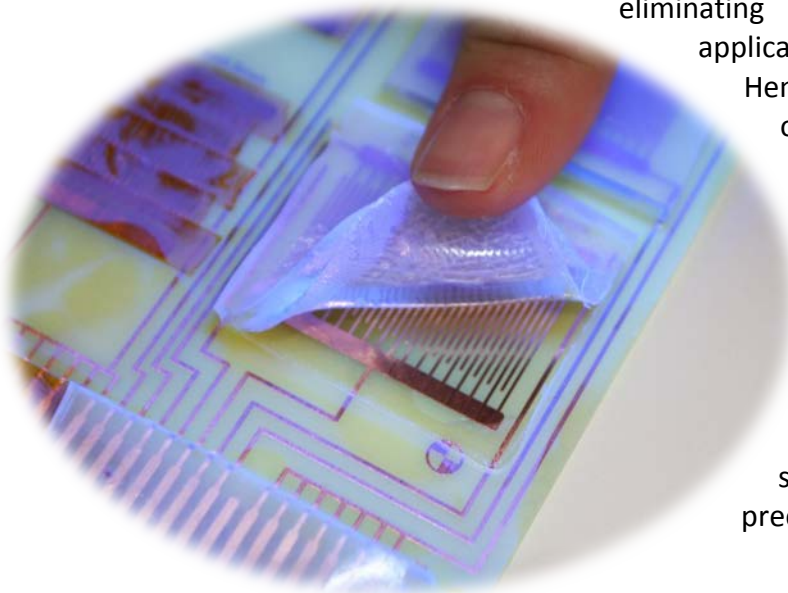
Normally, when a PCB is conformal coated, there are areas of the board that need to be kept free of coating. These areas are often referred to as "keep out zones" and, to date, have generally been masked off with tapes, liquid masks or UV curable masks. Each process has advantages and disadvantages. While tapes require no curing step, application of the tape is a time-consuming, labor intensive process and difficult for very small keep out zones. In the case of liquid masks, the material is fairly low cost but, again, application is achieved manually and the materials often have a very strong odor and are slow curing. UV masks, though automated and fast curing, do require UV curing equipment and removal can be challenging. Until now, there has been no ideal masking solution.

Uniting the advantages of conventional masking materials (good adhesion to multiple surfaces, low residues, compatibility with miniaturized dimensions and automated processes) and

eliminating the downsides (time-consuming manual application, lengthy cure steps, residues and odor),

Henkel has developed a novel solution for isolation of PCB keep out areas. Leveraging its hot melt adhesive formulation expertise, Henkel has brought to market Technomelt® AS 8998. The newly-commercialized material has been designed to deliver a simple, fast and effective alternative to conventional PCB masking techniques.

Compatible with automated dispensing systems, *Technomelt* AS 8998 offers speed and precision in a slump-resistant formula. Material is



quickly dispensed precisely where required with no risk of migration to non-designated areas, which is an important consideration for today's highly miniaturized board and component dimensions. Manually-applied tapes, on the other hand, can be difficult to affix to very small areas, increasing the likelihood of non-optimal coating coverage. In contrast to UV curable masks, *Technomelt* AS 8998 requires no cure step. The material has excellent green strength immediately following dispensing and solidifies quickly upon cooling. No induced thermal or UV curing is required. Adhesion to various substrate surfaces makes *Technomelt* AS 8998 highly versatile, simplifying the supply chain as a single material can be used for multiple products. The hot melt adhesive remains firmly in place as it passes through the coating process, following which it peels off quickly and cleanly, leaving defined edges and zero residue. The material can be used in thermal processes with temperatures up to 100°C, which is in alignment with most standard coating applications. Future developments will include formulations with higher temperature resistance.

As compelling as its process simplicity and effectiveness are, the cost savings manufacturers can realize by integrating *Technomelt* AS 8998 into their process are equally impressive. In fact, assembly specialists that are already using Henkel's latest innovation have reported substantial cost reductions as compared to traditional masking methods. When factoring in labor, equipment, process, material and equipment savings, one customer was able to lower overall annual cost by more than 40% as compared to their previous masking techniques.

If you're ready to unmask traditional methods, simplify masking processes and substantially lower costs, then you're ready for *Technomelt* AS 8998. For more information, visit www.henkel-adhesives.com/electronics or www.technomelt-simply3.com.