Clear adhesive increases durability and extends product life

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As touch panel interfaces become the norm on mobile devices, laptops and tablets, Loctite Liquid Optically Clear Adhesives (LOCA) from Henkel Corporation are improving the viewing experience, increasing display durability, extending product life, reducing power consumption and enabling thinner device designs. New dual cure technologies allow full cure in shadowed areas, and offer vastly reduced shrinkage to control display distortion and eliminate mura.

When used on AR glass, Loctite LOCA products increase the contrast ratio in sunlight by 400 percent and minimize the refractive index mismatch to glass and PMMA, minimizing light loss due to reflection. Reduced light loss means the user enjoys a superior viewing experience and the device consumes far less power, which extends battery life. Loctite LOCA products increase display robustness significantly; for example, LOCAs can increase ball-drop impact resistance as much as 300 percent for gaps up to 1 mm. And displays withstand higher heat and humidity, and resist temperature cycling. As they absorb impact load and protect gap-free display surfaces, these adhesives allow the production of thinner panels.

The seven products in the Loctite LOCA line include two dual cure adhesives designed to cure in shadowed area where light cannot reach. Loctite 5192 is a high-temperature-resistant, non-yellowing UV/moisture cure silicone that shrinks very little and contributes minimal stress to the surface of the LCD, reducing mura defects. Loctite 3192 is a general-purpose UV/heat cure acrylic with a refractive index that delivers excellent brightness, clarity and color. Ideal for high volume production, this product heat cures in just one minute at 80ºC.

Designed for both TP1 (touch panel to cover lens) and TP2 (cover lens to LCD) bonding, Loctite 3196 is a general-purpose, impact-absorbent UV acrylic that protects the display surface from damage. This unique adhesive can also replace the air gap designed into TP2 applications. UV cure Loctite 3193 delivers high adhesion to plastic, while Loctite 3195 is a general-purpose adhesive for TP1 glass-to-glass bonding. Loctit 3195DM is a high viscosity dam material compatible with most UV acrylic LOCAs. Loctite 5192DM is a high viscosity silicone dam material designed for use with Loctite 5192 UV/moisture cure silicone.

Loctite LOCAs provide better adhesion and reliability than optically clear double-sided tapes, are more suitable to large panel assembly, and are much better for gap filling. Compatible with many display and touch panel sizes, LOCAs eliminate the need to inventory die-cut OCAs in varying sizes. LOCA products can be applied and cured using automated processing equipment with little surface preparation. Repair and rework is done during pre-curing phases of the assembly process.

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