

Electronic Component Ruggedization

Various technologies are available for ensuring critical components on printed circuit boards remain intact throughout manufacturing, assembly qualification, and service environment for the duration of product lifecycle. Should one ball-grid interconnect fail, an entire device could be compromised. Dymax has

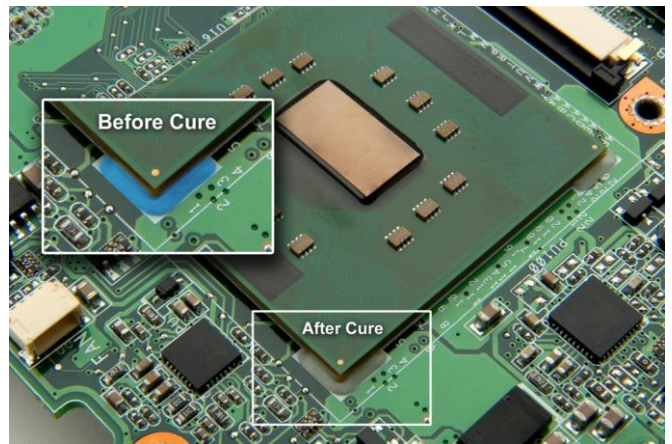
developed the next generation family of edge-bonding adhesives engineered specifically for bonding high-value PCB components. Dymax light-curable adhesives dispense and cure in seconds to provide the optimal balance of production efficiency and technical performance.

BENEFITS of LIGHT-CURABLE ADHESIVES VS UNDERFILL OR HEAT-CURE EPOXIES

- Fast dispense and cure
- Eliminate leadless component (BGA/VGA) interconnect cracking due to CTE mismatch
- Reduce stress on interconnects during push, pull, shock, drop, and vibration
- Enhance PCB life
- Post reflow, room temperature application
- Easy rework
- Simple visual inspection

BENEFITS of DYMAX LIGHT-CURABLE LEADLESS COMPONENT REINFORCEMENT ADHESIVES

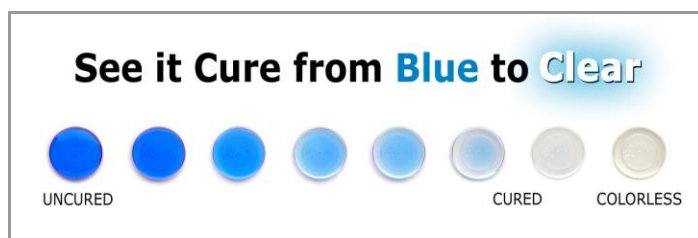
- Cure in seconds
- Engineered bead shape for wetting both board surface and component edge without seeping into shadowed area
- Highly thixotropic for **zero movement** prior to cure
- Low modulus for minimal stress in component interfaces
- Available with **See-Cure** Technology
- Exhibit improved bond strength for die and pry testing
- Halogen free
- Silicone free
- RoHS Compliant



TYPICAL APPLICATIONS

- Handheld electronic devices
- Mobile phones
- Laptop computers
- Gaming consoles
- GPS (global positioning systems)
- Digital music players

DYMAX SEE-CURE TECHNOLOGY*



*Dymax adhesives with **See-Cure** Technology have part numbers ending in "SC"

See It **Dispense**

Easily identify adhesive bead profile and coverage on substrate prior to cure

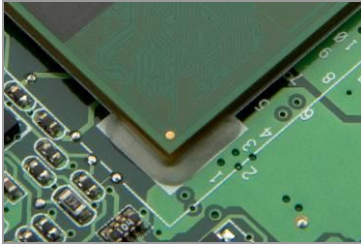
See It **Cure**

Confirm the adhesive has received a sufficient dose of energy to reach full cure



ENVIRONMENTAL BENEFITS of DYMAX LIGHT-CURABLE MATERIALS:

- No VOCs
- Solvent free
- HAP free
- No energy required for curing ovens
- Documented Halogen-Free



TYPICAL COST SAVINGS of DYMAX LIGHT CURABLE MATERIALS:

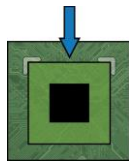
- Cure in seconds; increase throughput
- Minimal floor space requirements
- Simple to dispense – no solvent management or mixing systems required
- No silicone containment required
- Eliminate labor costs associated with:
 - Complex dispensing system maintenance
 - Manual transferring of parts for long cure
- No secondary inspection of bond area



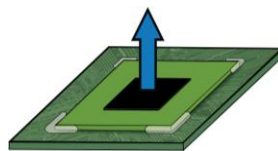
PRODUCT SPECIFICATIONS

Product Features		9422-SC	9309-SC
	Typical Applications	Edge bonding, component ruggedization, corner bonding	
	Features	High viscosity/thixotropy for zero flow after dispense, UV/Visible light cure, See-Cure	
	Viscosity, cP	38,000	45,000
Product Cure Data*		9422-SC	9309-SC
Lamp	Lamp Intensity	Approximate Exposure or Belt Speed	
BlueWave® 200 UV Curing Spot Lamp*	10 W/cm ²	2 seconds	4 seconds
5000-EC Flood Lamp System	200 mW/cm ²	10 seconds	20 seconds
UVCS Conveyor with Fusion D Lamps	2,500 mW/cm ²	1.8 m/min [6.0 fpm]	2.4 m/min [8.0 fpm]
Typical Bond Strength			
Test		Typical Bond Strength, kgf [lbf]	
Shear		16 [35]	8 [18]
Tensile		8.2 [18]	5.4 [12]
Flex		28 [62]	7.8 [17]

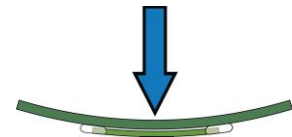
* Time to complete the transition from blue to clear at an adhesive thickness of 0.10 mm [4.0 mil]. Cure times based on laboratory conditions.



Shear



Tensile



Flex



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