








CONFORMAL COATINGS

Reliable Board Protection in Seconds

Product Number*	Description	Nominal Viscosity (cP)	Durometer Hardness	Modulus of Elasticity MPa [psi]	Dielectric Strength (Volts/mil)	Approvals	Halogen Free?
9481-E	<ul style="list-style-type: none"> Room-temperature secondary moisture cure for shadowed areas Highest chemical and abrasion resistance Low viscosity for thin coatings 	125	D75	150 [21,800]	>1,500	MIL-I-46058 listed IPC-CC-830 approved UL recognized	
9482	<ul style="list-style-type: none"> Room-temperature secondary moisture cure for shadowed areas Superior re-workability Chemical and thermal shock resistance 	1,100	D70	275 [40,000]	1,100	-	
984-LVUF	<ul style="list-style-type: none"> Isocyanate free Rigid for high chemical and abrasion resistance Secondary heat cure for shadowed areas 	150	D80	410 [60,000]	1,800	MIL-I-46058 listed IPC-CC-830 approved UL recognized	
987	<ul style="list-style-type: none"> Isocyanate free High chemical and abrasion resistance Secondary heat cure for shadowed areas 	150	D85	900 [130,000]	>1,500	MIL-I-46058 listed IPC-CC-830 approved	
9-20351-UR	<ul style="list-style-type: none"> Isocyanate free Easy one-pass coverage of high-profile leads and tall components without seeping into shadowed areas Secondary heat cure for shadowed areas 	13,500	D60	19 [2,700]	500	-	
9-20557	<ul style="list-style-type: none"> Isocyanate free Medium viscosity for wetting components Low modulus for thermal cycling performance Secondary heat cure for shadowed areas 	2,300	D60	89 [13,000]	>1,500	MIL-I-46058C listed IPC-CC-830 approved UL recognized	
9-20557-LV	<ul style="list-style-type: none"> Isocyanate free Low viscosity for thin coatings Low modulus for enhanced thermal cycling performance Secondary heat cure for shadowed areas 	850	D70	379 [55,000]	>1,500	MIL-I-46058C listed IPC-CC-830 approved	

*Other grades are available for specific applications requiring physical properties different from standard products listed here.
NOTE: Consult Dymax Conformal Coating Validation Report for more detailed information on conformal coatings.



Black Coatings



Fluorescing Coatings



Clear Coatings

- Solvent free
- Tack-free UV cures in seconds
- Excellent environmental resistance
- Black grades available
- Adhesion to flex circuit substrates (FPC)
- Low stress under thermal cycling
- Rigid and flexible coatings available
- Electrically insulating

Environmental Benefits of Dymax Light-Curable Materials

Dymax understands that safe ecologically friendly products benefit our customers, the environment, and us. We have created materials with attributes that lower product costs, life-cycle costs, and ecological impact. These attributes include:


- Solvent-free materials
- Halogen-free materials
- RoHS compliance
- REACH - no substance of very high concern (SVHC)
- Eco-friendly, one-component materials



Dymax Halogen-Free conformal coatings, encapsulants, and adhesives are documented by an independent laboratory to meet or exceed standards set forth in IEC 61249-2-21. This international directive defines halogen-free as <900 ppm for chlorine, <900 ppm for bromine and <1,500 ppm total level of both combined. The current test method used for certification is BS EN 14582:2007.

THERMAL INTERFACE ADHESIVES

Efficient Thermal Transfer Between Heat Sinks and Electronics

Product Number	Description	Applications	Thermal Conductivity	Nominal Viscosity (cP)	Halogen Free?
9-20801	<ul style="list-style-type: none"> Light cure in seconds Secondary activator or heat cure for shadowed areas* Highly thixotropic for optimal placement 	<ul style="list-style-type: none"> Mounting heat sinks on PCBs LED heat dissipation 	0.9 W/m ² K	110,000	

*Dymax 501-E is the recommended activator for shadowed areas







Bonding Heat Sinks

- Sets in seconds with light exposure
- Cure shadow areas with activator or heat
- High-strength bonds
- Low stress for mismatched CTE's
- Room-temperature storage and cure

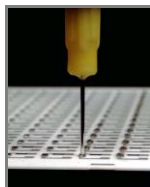
CHIP ENCAPSULANTS and WIRE BONDRERS

For Superior Protection on Flexible and Rigid Platforms

Product Number	Description	Applications	Durometer Hardness	Nominal Viscosity (cP)	Elongation at Break (%)	Modulus of Elasticity MPa [psi]	Halogen Free?
9001-E-v3.1	<ul style="list-style-type: none"> UV/Visible light cure for fastest processing Secondary heat cure for shadowed areas Multiple viscosities available for optimal flow and coverage Low modulus for wire bonding 	<ul style="list-style-type: none"> Chip-on-board Chip-on-flex Chip-on-glass Wire bonding Bare-die encapsulation 	D45	4,500	150	17 [2,500]	
9001-E-v3.5				17,000			
9001-E-v3.7				50,000			
9008	<ul style="list-style-type: none"> Flexible Highly moisture-resistant bonds to diverse surfaces such as polyimide, DAP, glass, epoxy board, metal, PET High adhesion, even at -40°C 	<ul style="list-style-type: none"> Chip-on-flex encapsulation Flex circuit bonding and attachment to PCB and glass 	A85	4,500	300	–	



Black Encapsulants



Chip Encapsulants



Flex Circuit Encapsulants

- 100% solvent free
- Instant UV/Visible cures
- High ionic purity
- Tenacious adhesion to flex circuit substrates (polyimide and PET)
- Low stress under thermal cycling
- Electrically insulating
- Room-temperature storage
- Thermal shock and moisture resistance

WIRE TACKING

Photocurable Technology Offers Lower Costs and Increased Productivity

Product Number	Description	Nominal Viscosity (cP)	Durometer Hardness	Tensile @ Break MPa [psi]	Halogen Free?
9-911 Rev A	<ul style="list-style-type: none"> On-demand cure for optimal positioning Exposed areas cure in seconds for immediate strength 	36,000	D80	28 [4,000]	




Wire Tacking

- Instant UV cure
- One part
- Solvent free
- Unlimited pot life
- Fluorescing additive for in-line quality control
- Excellent adhesion to solder masks and wires
- Thermal shock and moisture resistance

RUGGEDIZATION

Photocurable Technology Offers Lower Costs and Increased Productivity

Product Number	Description and Applications	Nominal Viscosity (cP)	Durometer Hardness	Tensile @ Break MPa [psi]	Cure Depth mm [in]	Halogen Free?
9422-SC	<ul style="list-style-type: none"> Highly thixotropic for optimal placement and wetting of components See-Cure version for easy visual confirmation of full cure 	38,000	D50	16 [2,300]	6.5 [0.26]	



Ruggedizing





Leadless Component Ruggedization

- Fast dispense and cure
- Pre- or post-reflow, room-temperature application
- Reduce stress on interconnects during push, pull, shock, drop, and vibration
- Easy rework
- Simple visual inspection
- Improved bond strength for die and pry testing
- Engineered bead shape for wetting both board surface and component edge without seeping into shadowed area

ACRYLATED URETHANE POTTING and SEALING

For Shallow Potting in 10-30 Seconds or Less – Highest Adhesion to Substrates

Product Number	Description and Applications	Recommended Substrates	UV Cure* Speed (sec)/ Depth (mm [in])	Durometer Hardness	Nominal Viscosity (cP)	Halogen Free?
921-T	<ul style="list-style-type: none"> Connectors, thermal switches Tamperproofing Translucent bonds with high adhesion 	ABS, filled nylon, metal, glass	30/6.4 [0.25]	D75	3,500	
921-VT					11,000	
921-Gel					25,000	
9001-E V3.1	<ul style="list-style-type: none"> Sensors Flexible Excellent adhesion to engineering plastics 	ABS, PC, PVC, FR-4, metals	15/6.4 [0.25]	D45	4,500	
9001-E V3.5					17,000	
9001-E V3.7					50,000	

*UV cure speed depends on the intensity reaching the surface of the resin. Cure speed was measured at an intensity of 175 mW/cm².



Cable Potting



Deep Layer Potting




Chip Potting



- Full UV/Visible cure in seconds
- Solvent free
- High adhesion to substrates
- Flexible and rigid products available

LED ENCAPSULATING

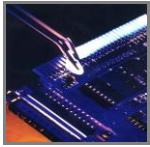
Bonding, Potting, and Sealing in Seconds

Product Number	Description	Applications	Linear Shrinkage (%)	Nominal Viscosity (cP)	Halogen Free?
LIGHT-CAP® 9622	<ul style="list-style-type: none"> UV/Visible light cure in seconds No mixing required Heat resistant to 100°C Resistant to long-term UV exposure High light transmittance Durometer between silicone and epoxy 	<ul style="list-style-type: none"> Instant casting of LEDs Rapid forming of protective optical lens 	0.79	12,000	

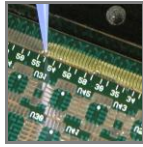
REMOVABLE MASKS

Product Number	Description and Applications	Cure Depth (mm [in])	Durometer Hardness	Cure Speed* (sec)	Viscosity (cP)	Halogen Free?
9-20479-B	<ul style="list-style-type: none"> Peelable Wave-solder resistant Blue Excellent viscosity for machine dispensing 	6.4 [0.25]	A70	10	150,000	
9-318-F	<ul style="list-style-type: none"> Peelable Fluoresces for easy inspection Very fast curing 	6.4 [0.25]	A55	<4	50,000	

*Cure speed depends on the intensity and distance from the light source. Cure speed was measured at an intensity of 175 mW/cm².



Fluorescing Mask








Removable Mask



Peelable Mask

- 100% solids
- UV/Visible cure in seconds
- No ionic contamination
- Fluorescing and blue grades
- One part

DISPLAY OPTICAL BONDING and LAMINATING

Product Number	Description	Applications	Volumetric Shrinkage (%)	Linear Shrinkage (%)	Nominal Viscosity (cP)	Halogen Free?
9-20737	<ul style="list-style-type: none"> High viscosity for filling gap without flowing into shadowed areas Adhesion to various frame substrates 	Sealing frame to display surface	-	0.79	10,000	
9641-LV	<ul style="list-style-type: none"> Optimized cure speed and modulus for low-stress bond Enhanced resistance to yellowing from heat or UV exposure Optically clear 	Optical bonding of touch screens and protective cover windows; polarizer lamination; display ruggedizing	-	0.4	1,100	
9701	<ul style="list-style-type: none"> Excellent re-workability Good thermal shock resistance Low shrinkage Non-yellowing 	Optical display lamination and touch screen bonding	4.9	-	200	
9702	<ul style="list-style-type: none"> Excellent re-workability Good thermal shock resistance Low shrinkage Non-yellowing 	Optical display lamination and touch screen bonding	4.2	-	950	
9703	<ul style="list-style-type: none"> Excellent re-workability Good thermal shock resistance Low shrinkage Non-yellowing 	Optical display lamination and edge damming	4.2	-	30,000	



LCD Laminating Plastics with 9641-LV



Touch Screen or Cover Window Optical Bonding

- One component, no mixing required
- Flexible
- Resistant to yellowing
- Fast cure
- Bonds various substrates
- High optical clarity