

**1184-M-B**  
**Black, Low-Gloss, Conformal Coating**  
**With Secondary Heat-Curing Capabilities**

APPLICATIONS	FEATURES	BONDS	BIO-APPROVALS
<ul style="list-style-type: none"> <li>• Protection of Light-Sensitive Components</li> <li>• Concealing Components on Circuitry</li> <li>• Conformal Coating of Medical Components</li> </ul>	<ul style="list-style-type: none"> <li>• Opaque Color for Concealing Component Assembly</li> <li>• Solvent Free</li> <li>• For Coating or Sealing</li> <li>• Secondary Thermal-Cure for Post-Bake Operations</li> <li>• Easy Inspection of Coverage</li> </ul>	<ul style="list-style-type: none"> <li>• CAP</li> <li>• Polyurethane</li> <li>• Polystyrene</li> <li>• Steel</li> <li>• SAN</li> <li>• FR-4 Epoxy</li> <li>• Glass</li> </ul>	<ul style="list-style-type: none"> <li>• ISO 10993 Cytotoxicity</li> </ul>

**INTRODUCTION**

DYMAX MD<sup>®</sup> Medical Device adhesives are solvent free and cure upon exposure to UV light. Their ability to cure in seconds enables faster processing, greater output, and lower assembly costs. When cured with DYMAX spot, focused-beam, or flood lamps, they deliver optimum speed and performance for medical device assembly while enhancing worker safety. This product is in full compliance with the RoHS Directives 2002/95/EC and 2003/11EC.

**TYPICAL UNCURED PROPERTIES**

Solvent Content	None, 100% Solids	
Chemical Class	Urethane Oligomer/(Meth)Acrylate Monomer Blends	
Appearance	Black	
Cleaning Solvents	Alcohols/Chlorinated Solvents, Dynaloy CU-6	
Flash Point	>93°C (>200°F)	
Viscosity (20 rpm)	6,000 cP (nominal)	ASTM D-2556

**TYPICAL CURED PROPERTIES**

*PHYSICAL*

Durometer Hardness	D80	ASTM D-2240
Tensile at Break	6,200 psi	ASTM D-638
Elongation at Break	5%	ASTM D-638
Tensile Strength (Steel Laps)	1,200 psi	ASTM D-1002
Thermal Limit (Brittle/Degrades)	-55° to 150°C (-65° to 300°F)	DSTM D-200*
Coefficient of Linear Thermal Expansion	70 x 10 <sup>-6</sup> in/in/°C	ASTM D-696
Water Absorption	0.4%	ASTM D-570

\*DSTM Refers to DYMAX Standard Test Method

*ELECTRICAL*

Dielectric Strength	1,800 Volts/mil	ASTM D-1304
Dielectric Constant, 1MHz	3.41 (23°C)	ASTM D-1304
Dissipation Factor, 1MHz	0.03 (23°C)	ASTM D-1304
Volume Resistivity	36 x 10 <sup>12</sup> Ω-cm	ASTM D-1304
Surface Resistivity	38 x 10 <sup>12</sup> Ω	ASTM D-1304



**STORAGE AND SHELF LIFE**

Store material in a cool, dark place when not in use. Do not expose to UV light or sunlight. Material may also polymerize upon prolonged exposure to ambient light. Replace lid immediately after use. This material has a minimum 12-month shelf life from date of shipment, unless otherwise specified, when stored between 10°C [50°F] and 32°C [90°F] in the original, unopened container.

**TYPICAL LIGHT-CURE DATA**

Lamp	5000-EC	UVC-6 with Electrodeless Lamp*
Light Type	UV/Visible	UV/Visible
Lamp Type	5" x 5" Flood	1" x 6" Focused Beam
Maximum Lamp Intensity @ 365 nm	300 mW/cm <sup>2</sup>	8,000+ mW/cm <sup>2</sup>
Intensity @ Time Of Test @ 365 nm	150 mW/cm <sup>2</sup>	4,000 mW/cm <sup>2</sup>
Adhesive Absorption Range (nm)	300-500	300-500
Equipment Output Range (nm)	300-500	300-500
Cure Speed (Sec)		
Tack-Free Surface Cure	30	5
Nominal Cure Depth (0.125")	N/A	2

\* Fusion F300 with "D" bulb

**Heat Cure After UV Curing**

Heat may be used as a secondary cure for shadowed areas only after product has been cured with UV. The following is a guide and is dependent on the amount of material to be cured:

Minimum Temperature	Time
120°C (250°F)	30 minutes
150°C (300°F)	15 minutes

**DISPENSING AND HANDLING ADHESIVE**

This material may be dispensed with a variety of manual and automatic applicators or other equipment as required. Questions relating to dispensing and curing systems for specific applications should be referred to DYMAX Applications Engineering.

**BIOCOMPATIBILITY & STERILIZATION**

This product has not been submitted for USP Class VI biocompatibility certification. This PDS will be updated whenever such certification is completed. In all cases, it is the user's responsibility to determine and validate the suitability of these adhesives in the intended medical device.

SME Technical Paper #AS91-397, 1991 advises that "All adhesives are toxic in their raw or uncured state. Complete cure...is required to retain Class VI certification status." It is recommended that biocompatibility testing of the completed device be done following sterilization to eliminate the effects of minor process variations and contamination during assembly. The sterilization methods of choice are gamma irradiation and ethylene oxide. Sterilization by autoclaving may be limited to certain applications. Laboratory data indicates that gamma irradiation cures DYMAX adhesives.

**GENERAL INFORMATION**

This product is intended for industrial use only. Keep out of the reach of children. Avoid breathing vapors. Avoid contact with skin, eyes, and clothing. Wear impervious gloves. Repeated or continuous skin contact with uncured material may cause irritation. Remove material from skin with soap and water. Never use organic solvents to remove material from skin and eyes. For more information on the safe handling of this material, please refer to the Material Safety Data Sheet before use.

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