1-20270 Series
Moisture-Resistant Polycarbonate and PVC Bonders

APPLICATIONS

- **Heat Exchangers**
- **Transducers**
- **Tubing to Fittings**
- **Oxygenators**

FEATURES

- **UV/Visible Light Cure**
- **Cures through tinted or UV-blocked plastics**
- **Excellent moisture, thermal shock, and vibration**
- **Bonds exhibit excellent tensile and shear**

RECOMMENDED SUBSTRATES

- **Stainless Steel**
- **Polycarbonate**
- **PVC**

1-20270 Series MD® Medical Device adhesives provide rapid bonding and sealing to stainless steel, polycarbonate, PVC, and a variety of other plastic substrates. Bonds to polycarbonate generally exceed the strength of the substrate. These solvent-free adhesives exhibit excellent moisture resistance and have excellent dispensing rheology for the most demanding applications.

Dymax MD® Medical Device adhesives can be cured with UV and visible light. These adhesives increase productivity, lower assembly costs, and enhance worker safety. When cured with Dymax light-curing spot lamps, focused-beam lamps, or flood lamps, these adhesives provide optimum process flexibility. They allow the user to select the optimum combination of adhesive and cure mechanism to meet individual process and performance requirements. This product is in full compliance with the RoHS Directives 2002/95/EC and 2003/11/EC.

TYPICAL UNCURED PROPERTIES

Solvent Content		None - 100% Reactive Solids	
Chemical Class		Urethane (Meth) Acrylate Blends	
Appearance		Clear	
Solubility		Alcohols/Chlorinated Solvents/Ketones	
Flash Point		>93°C (200°F)	
Refractive Index		1.49	ASTM D-1218
Density		1.10 g/mL	ASTM D-1875
Viscosity (20 rpm)	1-20270	1,300 cP (nominal)	ASTM D-1084
	1-20270-T	7,000 cP (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES

PHYSICAL

Durometer Hardness	D60	ASTM D-2240
Elongation at Break	160%	ASTM D-638
Tensile at Break	2,000 psi	ASTM D-638
Elongation at Yield	10%	ASTM D-638
Tensile at Yield	1,350 psi	ASTM D-638
Water Absorption (24 h)	1.0%	ASTM D-570
Boiling Water Absorption (2 h)	2.6%	ASTM D-570
Thermal Limit (brittle/degrades)	-54° to 177°C (-65°/+350°F)	DSTM D-200*
Refractive Index	1.51	ASTM D-542

* DSTM refers to Dymax Standard Test Method

Dymax Corporation
860.482.1010
info@dymax.com
www.dymax.com

Dymax Oligomers &Coatings
860.626.7006
oligomers&coatings@dymax.com
www.dymax-oc.com

Dymax Europe GmbH
+49 (0) 611.962.7900
info_de@dymax.com
www.dymax.de

Dymax UV Adhesives & Equipment (Shenzhen) Co Ltd
+86.755.83485759
dymaxasia@dymax.com
www.dymax.com.cn

Dymax UV Adhesives & Equipment (Shanghai) Co Ltd
+86.21.37285759
dymaxasia@dymax.com
www.dymax.com.cn

Dymax Asia (H.K.) Limited
+852.2460.7038
dymaxasia@dymax.com
www.dymax.com.cn

Dymax Korea LLC
82.2.784.3434
info@dymax.kr
www.dymax.com/kr

TYPICAL LIGHT CURE DATA				
Lamp	**2000-EC**	**5000-EC**	**PC-3**	**3000-EC**
Light Type **Lamp Type**	UV Flood	UV Flood	UV Spot	UV Spot
Intensity (mW/cm^2) at Peak Wavelength	50 @ 365 nm	150 @ 365 nm	1,000 @ 365 nm	1,800 @ 365 nm
Wavelength (nm) Working Range	300-500	300-500	300-500	300-500
Cure Speed (sec) **Between Glass** **1/8" Bead** **Surface Cure**	 <5 30-60 45-90	 1 25-30 45	 1 10 10	 <1 3-5 8
Cure Depth in 1 Minute (inch)	0.25	0.25	0.35	0.55

DISPENSING AND HANDLING ADHESIVE

1-20270 Series MD® Medical Device adhesives are packaged in a variety of container sizes and may be dispensed with various automatic bench-top syringe applicators or other equipment as required. Questions relating to dispensing and curing systems for specific applications should be referred to Dymax Application Engineering.

Repeated or continuous direct skin contact should be avoided. The use of barrier hand cream and plastic gloves are recommended. Do not wear absorbent gloves. Do not wear jewelry. Adhesive may be removed with hand soap and water. Avoid eye contact. Wipe excess wet adhesive off parts with paper towels and remove cured residue with chlorinated solvents, Freon, methanol, or ethanol. See CAUTION section next page.

STORAGE AND SHELF LIFE

Do not expose to UV light source or sunlight. This product should be stored in a warm area 24°C (75°F) in the dark when not in use. If product is not stored under these optimal conditions, it may begin to crystallize and thicken. If this should occur, nominal viscosity can be restored by gentle warming at 38° to 49°C (100° to 120°F) with occasional stirring. This "freeze"/melt process has no effect on the product's properties. This material has a minimum 12-month shelf life from date of shipment, unless otherwise specified, when stored as stated above.

BIOCOMPATIBILITY & STERILIZATION

Dymax MD® Medical Device adhesives are subjected to various biocompatibility tests in accordance with USP Class VI and/or ISO 10993 recommendations for disposable medical devices. The completed tests are identified on each Product Data Sheet, certificate copies of which are available upon request. Unless otherwise noted on the PDS, these adhesives have not been tested for prolonged or permanent implantation. 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. Gamma irradiation is known to polymerize unsaturated systems. However, it remains the user's obligation to ascertain the effectiveness of such a procedure.

SAFETY

Wear impervious gloves and/or barrier cream. Repeated or continuous skin contact with liquid adhesive will cause irritation and should be avoided. Do not wear absorbent gloves. Remove adhesive from skin with soap and water. Never use solvents to remove adhesive from skin or eyes.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of contact, immediately flush with water for at least 15 minutes; for eyes, get medical attention. Wash clothing before reuse. Keep out of reach of children. Do not take internally. If swallowed, vomiting should be induced at once and a physician called. For specific information, refer to the Material Safety Data Sheet before use.