Ultra Light-Weld® 1180-M-SV01
Flexible, General Purpose Adhesives

APPLICATIONS

- Needle Assembly
- Reservoir Assembly
- Transducer Assembly
- Medical Potting Applications

FEATURES & BENEFITS

- UV/Visible Light Cure
- Fluoresces for Easy Inspection
- Resilient
- Moisture Resistant
- Blue Fluorescing

RECOMMENDED SUBSTRATES

- Stainless Steel
- Polycarbonate
- Polystyrene
- Polyurethane
- PVC
- ABS

BIOCOMPATIBILITY

- ISO 10993-Elution Systemic Injection, Intracutaneous, Implantation, Hemolysis
- USP Class VI requirements are met as a result of the ISO 10993 tests

Dymax MD® Medical Device 1180-M-SV01 adhesive is designed for rapid bonding of transparent or translucent acrylic, polycarbonate, PVC alloys, ABS, polyurethane, and polystyrene, as well as metal substrates. 1180-M-SV01 adhesive dispenses easily and cures quickly for precise quantity and placement of adhesive. The built-in blue fluorescence provides a method to ensure inline quality control utilizing optical scanners. Dymax MD® Medical Device Adhesives contain no nonreactive solvents and cure upon exposure to light. Their ability to cure in seconds enables faster processing, greater output, and lower processing costs. When cured with Dymax light-curing spot lamps, focused-beam lamps, or flood lamps, they deliver optimum speed and performance for medical device assembly. Dymax lamps offer the optimum balance of UV and visible light for the fastest, deepest cures. This product is in full compliance with RoHS directives 2015/863/EU.

UNCURED PROPERTIES *

Property	Value	Test Method
Solvent Content	No Nonreactive Solvents	N/A
Chemical Class	Acrylated Urethane	N/A
Appearance	Straw/Clear	N/A
Soluble in	Organic Solvents	N/A
Flash Point	>95°C (200°F)	N/A
Viscosity, cP (20 rpm)	2,500 (nominal)	ASTM D2556

CURED MECHANICAL PROPERTIES *

Property	Value	Test Method
Durometer Hardness	D70	ASTM D2240
Tensile at Break, psi	2,800	ASTM D638
Elongation at Break, %	60	ASTM D638
Modulus of Elasticity, psi	230,000	ASTM D638

OTHER CURED PROPERTIES *

Property	Value	Test Method
Water Absorption, % (24 h)	1.0	ASTM D570
Thermal Limit (brittle/degrades)	-55° to 180°C (-65°/+350°F)	DSTM D200‡
Linear Shrinkage, %	2.0	ASTM D2566

* Not Specifications
N/A Not Applicable
‡ DSTM Refers to Dymax Standard Test Method

RoHS Compliant

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1180-M-SV01 Product Data Sheet

CURING GUIDELINES

	MC-5000	MC-4000	UVC-6 Conveyor*
Light Type	UV/Visible	UV/Visible	UV/Visible
Lamp Type	5" x5" Flood	3/16" Spot	1" x 6" Focused Beam
Max. Lamp Intensity at 365 nm (mW/cm²)	300	4,000	8,000+
Intensity During Test at 365 nm (mW/cm²)	150	1,800	4,000
Adhesive Absorption Range (nm)	300-500	300-500	300-500
Equipment Output Range (nm)	300-500	300-500	300-500
Cure Speed (sec)	-	-	-
Fixture Between Glass Slides	1	1	1
Tack-Free Surface Cure	10	20	5
Nominal Cure Depth (0.125")	4	5	2
Cure Depth in 1 Minute (Inch)	>0.25	>0.25	>0.25

*Equipped with a Fusion "D" bulb

The required intensity and cure time should be determined during the initial process validation stage. Factors that should be considered during process validation which can affect the adhesive cure rate and depth of cure include but are not limited to: the part geometry, bond-gap size, percent light transmission through the substrate at 365 nm and 436 nm, distance from the light source to the adhesive bond area, UV and visible light intensity and spectral output of the light source, the desired margin of safety to be built into the process and minimum and maximum exposure times.

OPTIMIZING PERFORMANCE AND HANDLING

1. This product cures with exposure to UV and visible light. Exposure to ambient and artificial light should be kept to a minimum before curing. Dispensing components including needles and fluid lines should be 100% light blocking, not just UV blocking.
2. All bond surfaces should be clean and free from grease, mold release, or other contaminants prior to dispensing the adhesive.
3. Cure speed is dependent upon many variables, including lamp intensity, distance from the light source, required depth of cure, bond gap, and percent light transmission of the substrate.
4. Oxygen in the atmosphere may inhibit surface cure. Surfaces exposed to air may require high-intensity (>100 mW/cm²) UV light to produce a dry surface cure. Flooding the bond area with an inert gas, such as nitrogen, can also reduce the effects of oxygen inhibition.
5. Cured parts should be allowed to cool before testing and subjecting to any loads.
6. In rare cases, stress cracking may occur in assembled parts. Three options may be explored to eliminate this problem. One option is to heat anneal the parts to remove molded-in stresses. A second option is to open the gap between mating parts to reduce stress caused by an interference fit. The third option is to minimize the amount of time the liquid adhesive remains in contact with the substrate(s) prior to curing.
7. Light curing generally produces some heat. If necessary, cooling fans can be placed in the curing area to reduce the heating effect on components.
8. At the point of curing, an air exhaust system is recommended to dissipate any heat and vapors formed during the curing process.

DISPENSING AND HANDLING THE ADHESIVE

Dymax 1180-M adhesive is available in various packages such as syringes, cartridges, bottles, and pails. They may be dispensed with a variety of automatic bench-top syringe applicators or other equipment as required. Direct questions relating to dispensing and curing systems for specific applications, should be referred to the Dymax Application Engineering.

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 polymerize upon prolonged exposure to ambient light. Replace lid immediately after use. This material has an 18-month shelf life from date of manufacture, unless otherwise specified, when stored between 10°C (50°F) and 35°C (90°F) in the original, unopened container.

BIOCOMPATIBILITY & STERILIZATION

Dymax 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.

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 Safety Data Sheet before use.

The data provided in this document are based on historical testing that Dymax performed under laboratory conditions as they existed at that time, and are for informational purposes only. The data are neither specifications nor guarantees of future performance in a particular application. Dymax does not guarantee that this product's properties are suitable for the user's intended purpose.

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