Multi-Cure® 9001-E-V3.0
Resilient, Clear Encapsulant

Dymax Multi-Cure® 9001-E-V3.0 encapsulant is a performance upgrade of the flexible “instant curing” Dymax 9001 UV/Visible light-curable encapsulant, with improved moisture and thermal cycle resistance, and adhesion to various component substrates. Curing completely in as little as five seconds upon exposure to longwave UV and visible light, this material is environmentally resistant with good ionic and electrical properties. 9001-E-V3.0 encapsulant displays excellent adhesion to printed circuit boards and electronic components and is especially well suited for chip-on-board, chip-on-flex, and multi-chip modules. This product is in full compliance with RoHS directives 2015/863/EU.

UNCURED PROPERTIES *		
Property	**Value**	**Test Method**
Solvent Content	None, 100% Solids	N/A
Isocyanate Content	None	N/A
Chemical Class	Modified Urethane	N/A
Appearance	Colorless Liquid	N/A
Viscosity, cP (20 rpm)	400 cP (nominal)	ASTM D1084
Soluble in	Organic Solvents	N/A
Shelf Life @RT (22°C to 25°C) from Date of Manufacture	18 months	N/A

OTHER CURED PROPERTIES *		
Property	**Value**	**Test Method**
Boiling Water Absorption, % (2 h)	2.4	ASTM D570
Water Absorption, % (25°C, 24 h)	1.0	ASTM D570

ELECTRICAL PROPERTIES *		
Property	**Value**	**Test Method**
Dielectric Strength	500 Volts/Mil	ASTM D1304
Dielectric Constant (1 MHz)	3.27	ASTM D150
Dissipation Factor (1 MHz)	0.046	ASTM D150
Volume Resistivity, ohm-cm	555 x 10^12	ASTM D257
Surface Resistivity, ohm	6,300 x 10^12	ASTM D257

RELIABILITY	
Thermal Shock (0.25 mil wire)	>2,000 cycles (-40°C to 125°C)
Humidity	>1,000 h, 85°C/85% RH
Autoclave	>1,000 h

IONIC PURITY	
Extractable Chloride	<10 ppm
Sodium	<10 ppm
Potassium	<10 ppm
Fluoride	<10 ppm

THERMAL SHEAR STRESS	
Aluminum	16.4 psi
FR-4	16.9 psi
Gold	17.0 psi
Silicon	17.5 psi

* Not Specifications

N/A Not Applicable

Technical Data Collected PRIOR TO 2008 Rev. 09/18/2020

CURING GUIDELINES

Cure times based on 0.005" (127 um) thickness

Dymax Curing System (Intensity)	Fixture Time or Belt Speed [A]
5000-EC (150 mW/cm²)	30 s

Full cure is best determined empirically by curing at different times and intensities, and measuring the corresponding change in cured properties such as tackiness, adhesion, hardness, etc. Full cure is defined as the point at which more light exposure no longer improves cured properties. Higher intensities or longer cures (up to 5x) generally will not degrade Dymax light-curable adhesives.

Dymax recommends that customers employ a safety factor by curing longer and/or at higher intensities than required for full cure. Although Dymax Application Engineering can provide technical support and assist with process development, each customer ultimately must determine and qualify the appropriate curing parameters required for their unique application.

SECONDARY HEAT CURE

Heat can be used as a secondary cure mechanism where the resin cannot be cured with light. The following heat-cure schedule may be used:

Temperature	Time*
110˚C [230˚F]	60 minutes
120˚C [250˚F]	30 minutes
150˚C [300˚F]	15 minutes

DISPENSING

The Dymax Application Engineering team is ready to discuss your application requirements to provide the most appropriate dispensing and/or spraying solution. Visit our current dispensing equipment portfolio here or consult our global contact phone numbers and online chat feature (available in North America only) during normal business hours for instant support.

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 shelf life noted on page 1 of this document, when stored between 10°C (50°F) and 32°C (90°F) in the original, unopened container. This product does not support fungal or bacterial growth.

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.

Numerous factors—including, without limitation, transport, storage, processing, the material with which the product is used, and the ultimate function or purpose for which the product was obtained—may affect the product's performance and/or may cause the product's actual behavior to deviate from its behavior in the laboratory. None of these factors are within Dymax's control. Conclusions about the behavior of the product under the user's particular conditions, and the product's suitability for a specific purpose, cannot be drawn from the information contained in this document.

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