

BLUE, HIGH VISCOSITY DAM Multi-Cure® 9001-B-V3.5

DESCRIPTION

Multi-Cure® 9001-B-v3.5 is a UV/visible light curing resin that creates high viscosity dams for microelectronic encapsulation. Curing completely in as little as 5 seconds upon exposure to longwave UV and visible light, 9001-B-v3.5 is environmentally resistant with good ionic and electrical properties. Its viscosity is ideal for medium glob top profiles. Multi-Cure 9001-B-v3.5 displays excellent adhesion to PC boards and electronic components and is especially well suited in creating dams for all 9000 Series encapsulants. Multi-Cure 9001-B-v3.5 is a thixotropic gel suitable for dams and or general purpose encapsulants. Multi-Cure 9001-B-v3.5 is not intended for use where contact with fine wires is possible.

TYPICAL UNCURED PROPERTIES (not specifications)

Solvent Content	None, 100% Solids	
Isocyanate Content	None	
Chemical Class	Modified Urethane	
Appearance	Liquid	
Color (specify when ordering)	Blue	
Solubility	Alcohols/Chlorinated Solvents/Ketones	
Toxicity	Low	
Flash Point	>93°C (200°F)	
Viscosity (20 rpm)	12,000 cP (nominal)	ASTM D-2556

TYPICAL CURED PROPERTIES (not specifications)

PHYSICAL

Durometer Hardness	D45 (nominal)	ASTM D-2240
Elongation at Break	75%	ASTM D-638
Tensile at Break	1,000 psi	ASTM D-638
Modulus of Elasticity	3,500 psi	ASTM D-638
Water Absorption (24 h)	1.0%	ASTM D-570
Boiling Water Absorption (2 h)	2.4%	ASTM D-570
Glass Transition, T _g	30°C	ASTM E-831
Coefficient of Thermal Expansion, α_1	95×10^{-6} in/in/°C	ASTM E-831
Coefficient of Thermal Expansion, α_2	180×10^{-6} in/in/°C	ASTM E-831
Thermal Limit	150°C	DSTM D-200*

*DSTM Refers to Dymax Standard Test Method

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

Ionic Purity:

Extractable Chloride	<10 ppm	IC
Sodium	<10 ppm	ICP
Potassium	<10 ppm	AA
Fluoride	<10 ppm	IC

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DYMAX CORPORATION

PRODUCT DATA SHEET

9001-B-v3.5, 04/22/2003

ELECTRICAL

Dielectric Strength	500 Volts/Mil	ASTM D-1304
Volume Resistivity	555×10^{12} ohm cm	ASTM D-1304
Surface Resistivity	$6,300 \times 10^{12}$ ohm	ASTM D-1304
Dissipation Factor, 1 MHz	0.046 (23°C)	ASTM D-1304
Dielectric Constant, 1 MHz	3.27 (23°C)	ASTM D-1304

HOW TO CURE WITH UV/VISIBLE LIGHT & IR:

I. Clear adhesive completely exposed to UV/Visible light:

Exposure Time	UV/visible Lamp	Minimum Light Intensity	Distance	Heat	Spectral Output
10-30 sec	Light-Welder® 5000-EC	200 mW/cm ²	2-4 inches	N.A.	300-500 nm

II. Clear adhesive shadowed from light requires either light cure simultaneous with heat cure or light cure immediately preceding heat cure.

30-120 sec	5000-EC	200 mW/cm ²	2-4 inch	120°C*	300-500 nm
0.5-1 ft/min	UVC-6PT	200 mW/cm ²	1 inch	120°C*	300-500 nm

*Encapsulation areas shadowed from light must reach 110° to 120°C for at least 30 seconds in order to heat cure.

Dymax 9001-B-v3.5 cures upon exposure to high intensity UV/visible light in wavelengths between 300-500 nm in 5-30 seconds. The speed of cure depends on the thickness of the encapsulant layer. Lamps emitting high levels of shortwave light are not recommended. Less than 15% of the Light-Welder® 5000-EC lamp's output is 200-300 nm UV light.

DISPENSING AND HANDLING ADHESIVE

Brief exposures to ambient (fluorescent) lighting should not polymerize Dymax 9001-B-v3.5 adhesives. However, exposure to higher intensity halogen bulbs will cause the adhesive to cure and should be avoided.

Dymax 9001-B-v3.5 is available in packages of various syringes and up to 170 mL cartridges. Dymax 9001-B-v3.5 may be dispensed from a variety of automatic bench-top syringe applicators or other equipment. Direct questions relating to dispensing and curing systems for specific applications to the Dymax Technical Center at 860-482-1010.

Skin contact should be avoided. Use barrier hand cream. Wear impervious gloves. Do not wear absorbent gloves. Adhesive may be removed with basic soap and water. Avoid eye contact. See CAUTION below. Wipe excess adhesive with paper towels and remove residue with isopropanol.

STORAGE AND SHELF LIFE

Store refrigerated in a cool, dark place when not in use. Do not place in view of UV light source or sunlight. Shelf life of Dymax product 9001-B-v3.5 is one year when stored in original, unopened container below 50°F. Freezing not recommended. Dymax product 9001-B-v3.5 does not support fungal or bacterial growth. Storage temperatures above 50°F reduce shelf life. Product 9001-B-v3.5 is shipped cold with overnight delivery charges. Product 9001-B-v3.5 will not be shipped overseas, nor leave Dymax on Fridays.

CAUTION

For industrial use only. Avoid breathing vapors. Avoid contact with eyes and clothing. In case of skin 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 product's Material Safety Data Sheet before use.

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