EMAX 906-B-REV-A Product Data Sheet

SPEEDMASK® EMAX 906-B-REV-A **Peelable Mask for Electronic Applications**

APPLICATIONS

- **Masking for Conformal Coating Application**
- Masking for Wave Solder or **Reflow Processes**

FEATURES

- **UV/Visible Light Cure**
- Compatible with Gold and **Copper Connector Pins**
- **Exceptionally Thixotropic for Manual or Automated** Dispensing
- **Solvent Free**
- Silicone Free

OTHER FEATURES

- **Blue Color for Easy Visual** Inspection
- **Halogen Free**

Dymax SpeedMask® EMAX 906-B-REV-A cures upon exposure to light and is designed for rapid masking of electronic components and assemblies. The mask is easily removable, eliminating the concern of ionic contamination or silicone left behind by other masking methods. Dymax SpeedMask® materials contain no nonreactive solvents. 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 masking. 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	Blue Translucent Gel	N/A	
Soluble in	Organic Solvents	N/A	
Density, g/ml	1.13 g/ml	ASTM D1875	
Viscosity, cP (20 rpm)	125,000	DSTM502	

CURED MECHANICAL PROPERTIES *				
Property	Value	Test Method		
Durometer Hardness	A75	ASTM D2240		
Tensile at Break, MPa [psi]	3.37 [490]	ASTM D638		
Elongation at Break, %	140	ASTM D638		
Modulus of Elasticity, MPa [psi]	4.13 [600]	ASTM D638		

OTHER CURED PROPERTIES *				
Property	Value	Test Method		
Boiling Water Absorption, % (2 hr)	6	ASTM D570		
Water Absorption, % (25°C, 24 hr)	6	ASTM D570		
Linear Shrinkage, %	1.6	ASTM D2566		

Not Specifications N/A Not Applicable

ADHESION	
Substrate	Recommendation
Lead Frame	✓
Ceramic	✓
PCB	✓
Flex	✓
Silicon	✓

Limited Applications

Requires Surface Treatment (e.g. plasma, corona treatment, etc.)



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CURING GUIDELINES

Cure rate is dependent upon many variables including lamp intensity, distance from the light source, and required depth of cure. The cure times below are based on lab results and are intended for reference only. Testing was performed using a 0.38 mm [0.015 in] coating thickness. Time/belt speed was determined by a complete, tack-free cure.

Dymax Curing System (Intensity)	Cure Time or Belt Speed ^A
5000-EC (200 mW/cm ²) ^A	60 sec
BlueWave® LED Prime ^B (800 mW/cm ²) ^A	120 sec
BlueWave® 200 (10 W/cm²) ^A	3 sec
UVCS Conveyor with one 5000-EC (200 mW/cm²) ^C	1 (FPM)
UVCS Conveyor with Fusion F300S (2.5 W/cm²) ^c	3 (FPM)

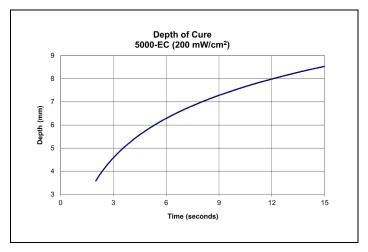
- A Intensity was measured over the UVA range (320-395 nm) using a Dymax ACCU-CAL™ 50 Radiometer.
- B Intensity was measured over the light range of 350-450 nm using a Dymax ACCU-CAL™ 50-LED Radiometer.
- C At 53 mm [2.1 in] focal distance. Maximum speed of conveyor is 8.2 m/min [27 ft/min]. Intensity was measured over the UVA range (320-395 nm) using the Dymax ACCU-CAL™ 100 Radiometer.

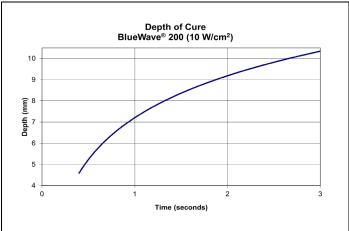
Full cure is best determined empirically by curing at different times and intensities, and measuring the corresponding change in cured properties such as tackiness, adhesion, hardness, etc. Full cure is defined as the point at which more light exposure no longer improves cured properties. Higher intensities or longer cures may degrade Dymax light-curable maskants.

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.

DEPTH OF CURE

The graphs below show the increase in depth of cure as a function of exposure time with two different lamps at different intensities. A 9.5 mm [0.37 in] diameter specimen was cured in a polypropylene mold and cooled to room temperature. It was then released from the mold and the cure depth was measured.







SPEEDMASK MASKING RESINS

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OPTIMIZING PERFORMANCE AND HANDLING

- 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.
- All surfaces to be masked should be clean and free from flux residue, grease, mold release, or other contaminants prior to dispensing the material.
- Oxygen in the atmosphere may inhibit surface cure. Surfaces exposed to air may require high-intensity (>100 mW/cm²) UV light to produce tack-free cure. Flooding the curing area with an inert gas, such as nitrogen, can also reduce the effects of oxygen inhibition.
- 4. Cured part should be allowed to cool before testing.
- Light curing generally produces some heat. If necessary, cooling fans can be placed in the curing area to reduce the heating effect on components.
- At the point of curing, an air exhaust system is recommended to dissipate any heat and vapors formed during the curing process.

DISPENSING THE MATERIAL

This material may be dispensed with a variety of manual, semiautomated and fully automated fluid delivery systems. Small area applications including beads and small dots can be achieved using hand-held Dymax dispensing systems like our SD-100 syringe dispenser and our Model 400 needle valve systems. The value system can be used in a manual, semi-automated or fully automated application. Dymax has several other dispensing systems that may be suitable for use with our masking materials. Questions relating to and defining the best fluid delivery system and curing equipment for specific applications should be discussed with the Dymax Application Engineering Team.

CLEANUP

Uncured material may be removed from dispensing components and parts with organic solvents. Cured material will be impervious to many solvents and difficult to remove. Cleanup of cured material may require mechanical methods such as ultrasonic bath, water jet, vacuum tweezers, air knife and/or warming to aid in the removal.

STORAGE AND SHELF LIFE

Store the material in a cool, dark place when not in use. Do not expose to light. This product may polymerize upon prolonged exposure to ambient and artificial light. Keep covered when not in use. This material has a 9-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.

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.

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