

# ULTRA FLUORESCING CONFORMAL COATING Multi-Cure→ EMAX 10062

## DESCRIPTION

Multi-Cure® EMAX 10062 is a highly fluorescing, single-component, 100%-solids conformal coating specifically formulated for rapid room-temperature cure when exposed to UV light. EMAX 10062 retains high fluorescence after curing. Thin-layer coatings cure almost instantly to a depth of 7 mils and fluoresce upon exposure to "black" light. Multi-Cure® EMAX 10062 also exhibits adhesion to a variety of metal, ceramic, and glass-filled epoxy surfaces. EMAX 10062 is a moderately low-viscosity coating which can be cured by exposure to UV light and secondarily cured with heat for shadowed areas on densely populated circuit boards. This product is in full compliance with RoHS directives 2015/863/EU.

Multi-Cure® EMAX 10062 is approved to Military Specification MIL-I-46058-C, Type AR, ER, and UR (QPL#576-90). EMAX 10062 meets "NSA" hydrolytic stability (reversion) requirements.

Multi-Cure® EMAX 10062 is qualified to IPC-CC-830-B.

Multi-Cure® EMAX 10062 is UL recognized (UL 746C), rated indoor/outdoor to 120°C, and 94V-0 flame class.

## TYPICAL UNCURED PROPERTIES (not specifications)

Solvent Content	None	
Appearance	Single Component/Clear Fluorescing Liquid	
Specific Gravity	1.05	
Viscosity	150 cP (nominal)	ASTM D-1084

## TYPICAL CURED PROPERTIES (not specifications)

### PHYSICAL

Durometer Hardness	D80	ASTM D-2240
Humidity Resistance (85°C/95RH, 120 day)	Pass	IPC-CC-830
Tensile at Break	6,000 psi	ASTM D-638
Elongation at Break	5%	ASTM D-638
Modulus of Elasticity	60,000 psi	ASTM D-638
Water Absorption	0.4%	ASTM D-570
Glass Transition, T <sub>g</sub>	84°C	DSTM 256*
Cross Hatch Adhesion Test:	Copper 100%	ASTM D-3359
	G-10 100%	ASTM D-3359

### THERMAL

Thermal Shock (-65/+125°C)	100 cycles, Class 3	IPC-CC-830
Thermal Limit (brittle/degrades)	-55° to 175°C (-65° to 350°F)	DSTM D-200*
Coefficient of Linear Thermal Expansion	69 x 10 <sup>-6</sup> in/in/°C	ASTM E-831

### ELECTRICAL

Dielectric Strength	1,800 V/mil	ASTM D-1304
Volume Resistivity	35.8 x 10 <sup>12</sup> ohm-cm	ASTM D-1304
Surface Resistivity	384 x 10 <sup>12</sup> ohm	ASTM D-1304
Dissipation Factor, 1 MHz	0.03	ASTM D-1304
Dielectric Constant, 1 MHz	3.4	ASTM D-1304

\*DSTM refers to Dymax Standard Test Method

## CURE SCHEDULE - UV Cure with 365 nm UV light<sup>[1]</sup>

Cure Time (seconds)	Intensity mW/cm <sup>2</sup>	Dymax Light-Welder® Lamps
30	250	5000-EC
1	2,500	UVC-6 with F-300, D-bulb



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Multi-Cure® EMAX 10062 is designed with an optimum level of fluorescent indicator to allow cure and to fluoresce under a "black" light. Though UV conformal coatings do not fluoresce as brightly as traditional solvent-based coatings, the following steps should permit adequate brightness for easy inspection:

1. Avoid overcuring the conformal coating. The UV cure schedule listed on the previous page is adequate. Lengthening exposure to UV light lowers fluorescence.
2. Inspect coated boards under "black" light in a shrouded area. Indirect indoor lighting decreases the effect of the "black" light in revealing the fluorescence.

### Heat Cure Following UV Exposure

Heat can be used as a secondary cure mechanism when all adhesive cannot be cured with UV light. UV cure must be done prior to heat cure. Application may involve dip, spray, or curtain coat. The following cure schedule may be used:

<u>Coating Temperature</u>	<u>Time</u>
110°C [225°F]	1 hour
120°C [250°F]	30 minutes
150°C [300°F]	15 minutes

### FACTORS AFFECTING CURING

- Dark surfaces lengthen cure time. Thicker films require longer cure times.
- Full-range (UV-A, B, and C) lamps provide faster cures than filtered sources.
- All UV sources degrade with use. Check output periodically with a radiometer.
- Light intensity decreases as distance from UV source increases.

### HANDLING AND DISPENSING ADHESIVE

Typically, EMAX 10062 is sprayed. For questions relating to dispensing, curing systems, the products, or the use of products, contact Dymax Application Engineering.

Repeated or continuous skin contact may cause sensitization and should be avoided. Do not wear jewelry. The use of barrier hand cream is recommended. Do not wear absorbent gloves. Uncured adhesive may be removed from skin with hand soap and water. Avoid eye contact. See CAUTION below. Wipe excess adhesive with paper towels; remove residue with chlorinated solvents, methanol, ethanol, or isopropanol.

### 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 18-month shelf life from date of manufacture, unless otherwise specified, when stored between 10°C (50°F) and 32°C (90°F) in the original, unopened container.

### 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 product's Material Safety Data Sheet before use.

### 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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## **ELECTRONIC CIRCUIT BOARD MATERIALS**

### **EMAX 10062 Product Data Sheet**

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