Multi-Cure® 9-20558
Flexible, Barrier Coating/Encapsulant Conformal Coating

Multi-Cure® 9-20558 is a flexible, single-component, 100% solids conformal coating specifically formulated for providing a thick moisture barrier to all electrical devices on the board. Coatings cure almost instantly in layers up to 1/4" thickness. Multi-Cure® 9-20558 exhibits excellent adhesion to a variety of metal, ceramic, and glass-filled epoxy surfaces. Its high viscosity allows it to encapsulate tall components without slumping off. 9-20558 can also be used to touch up, or provide extra protection to, spiked leads and other sensitive areas. It is a high-viscosity coating which can be cured by exposure to UV/Visible light and secondarily with heat for shadowed areas on densely populated circuit boards. The product is ideal for encapsulating components on flexible circuits. This product is in full compliance with RoHS directives 2015/863/EU.

TYPICAL UNCURED PROPERTIES *		
Property	**Value**	**Test Method**
Solvent Content	None, 100% Solids	N/A
Appearance	Viscous Liquid	N/A
Color	Clear	N/A
Chemical Class	Acrylated Urethane	N/A
Soluble in	Organic Solvents	N/A
Viscosity, cP (20 rpm)	20,000 (nominal)	ASTM D2556
Shelf Life @RT (22°C to 25°C) from Date of Manufacture	18 months	N/A

CURED MECHANICAL PROPERTIES *		
Property	**Value**	**Test Method**
CTEα_1, µm/m/°C		ASTM E831
CTEα_2, µm/m/°C		ASTM E831

TYPICAL CURED PROPERTIES *		
Property	**Value**	**Test Method**
Durometer Hardness	D45	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
Coefficient of Thermal Expansion, α1	95 x 10-6 in/in/°C	ASTM E-831
Coefficient of Thermal Expansion, α2	180 x 10-6 in/in/°C	ASTM E-831
Dielectric Strength (Solid)	500 V/mil	ASTM D-1304
Dielectric Strength (Liquid)	35 V/mil	ASTM D-1304
Volume Resistivity (Liquid)	500 x 1012 ohm cm	ASTM D-1304
Surface Resistivity (Solid)	6,000 x 1012 ohm	ASTM D-1304
Flammability	V-0	UL 94

OTHER CURED PROPERTIES *		
Property	**Value**	**Test Method**
Thermal Shock, -65°C to 125°C	50 cycles	MIL-I-46058C
Flammability	V0	UL 94
Dielectric Withstand Voltage	>1500 volts	MIL-I-46058C
Insulation Resistance	XXX ohms	MIL-I-46058C
Moisture Resistance	XXX ohms	MIL-I-46058C
Fungus Resistance (ASTM G21-13)	Passes	MIL-I-46058C
Ionic Content F	XX ppm	MIL-STD-883 Method 5011
Ionic Content CL	XX ppm	MIL-STD-883 Method 5011
Ionic Content K+	XX ppm	MIL-STD-883 Method 5011
Ionic Content Mg2+	XX ppm	MIL-STD-883 Method 5011
Conductivity	X mS/m	MIL-STD-883 Method 5011
pH	X.X	MIL-STD-883 Method 5011
Sequential Environmental Testing: Thermal Shock 15 cycles, Thermal Cycling 100 cycles	Passes	MIL-STD-883 Method 5011

* Not Specifications

N/A Not Applicable

Technical Data Collected PRIOR TO 2011 Rev. 8/5/2019

CURING GUIDELINES

UV-curing guidelines for XX at XX THICKNESS:

Dymax Curing System (Intensity)	Fixture Time or Belt Speed [A]
5000-EC (225 mW/cm^2)[A]	s
BlueWave® 200 (10 W/cm^2)[A]	s
UVCS Conveyor with Fusion D lamp (2.5 W/cm2)[B]	s
UVCS Conveyor with one 5000-EC (250 mW/cm2)[B]	s

A Intensity was measured over the UVA range (320-395 nm) using a Dymax ACCU-CAL™ 50 Radiometer.

B Intensity was measured over the UVA range (320-395 nm) using a Dymax ACCU-CAL™ 160 Radiometer.

C Intensity was measured over the UVA/Visible range (350-450 nm) using a Dymax ACCU-CAL™ 50-LED Radiometer.

CURE GUIDELINE

UV and Heat Cure

Dymax Lamp (Intensity)	Cure Time
UVCS Conveyor with Fusion F300S (2.5 W/cm²)	1 s
5000-EC (175 mW/cm²)	35 s

SECONDARY HEAT CURE

Heat can be used as a secondary cure mechanism where the adhesive cannot be cured with light. Light curing must be done prior to heat cure. 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

*Note: Actual heat cure time may vary due to part configuration, volume of adhesive applied, and oven efficiency.

DISPENSING SUPPORT

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.

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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