TECHNICAL DATA SHEET

EP1320LV Black

Revision date: 7/22/2021

N109 W13300 ELLSWORTH DRIVE GERMANTOWN, WI 53022
262-253-5900 FAX 262-253-5919

DESCRIPTION:

Resinlab® EP1320LV Black is a one-part, heat cure, high build 100% solids epoxy conformal coating. It can also be used as a small mass potting compound, the "fill" in a "dam and fill" application or structural adhesive or dielectric insulating polymer system where the application requires low shrinkage and excellent adhesion to a wide variety of plastics, metals and circuit board materials. This product has very good environmental protection and dielectric properties over a wide temperature range. This LV version has a lower high shear viscosity (higher press flow rate) to provide easier dispensing than the EP1320 version. The amount of flow upon curing is the same in both versions.

This product can cure as low as 85 °C with temperatures in the 100 °C to 150 °C range being most commonly used.

TYPICAL PROPERTIES:

All properties given are at 25 °C unless otherwise noted.

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Cure Schedule	5-10 min @ 150 °C 15 min @120 °C 30 min @ 110 °C 30-45 min @85 °C – minimum temp to activate cure.	
Viscosity	36,000 cP	Rheometer parallel plate 25mm @ 1/s 455300006291
Specific Gravity	1.27	Calculated
Hardness	85 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	86 °C	453560822409 by DSC
Water Absorption	0.13 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	5,000 psi	
Elongation	0 – 1 %	
Modulus	500,000 psi	
Lap Shear Strength **0.010" Bond Line, Al-Al**	 1,700 psi	4535601224468/ASTM D1002
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	17,000 psi	
Ultimate Strength	18,000 psi	
Modulus	404,000 psi	
Thermal Conductivity by LFA	0.4 W/m.K	453560822409/ASTM E1461
Volume Resistivity	2.0 x 10^{16} ohm-cm	455300006612/ASTM D257 @ 20 °C @ 23 %RH
Surface Resistivity	3.7 x 10^{16} ohm/sq	455300006612/ASTM D257 @ 20 °C @ 23 %RH

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Dielectric Constant & Dissipation Factor		455300006513/ASTM D150
@ 100 Hz	3.4, 0.02	
@ 100 kHz	3.2, 0.02	
AC Dielectric Strength	17.2 kV/mm *	ASTM D149 Method A, immersed in ASTM D3487 Type II Oil
Coefficient of Thermal Expansion by TMA		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	59 ppm/°C	
above Tg	205 ppm/°C	
Operating Temperature Range	-40 to 150 °C**	
Relative Thermal Index (RTI)	90 °C	UL746B, Table 7.1 Generic Value Based on Composition

* Asterisk denotes values considered typical to associated resin systems or extrapolated from other test results.
** Operating Temperature Range is based on average design requirements and is not intended as a guarantee of suitability for all applications operating at that temperature.
*** This TDS contains values that have been updated. The values reported in this technical data sheet are typical values of the product, and are highly dependent on test conditions and methodology. We actively seek the most precise and accurate ways to measure and interpret performance of our products, and to update estimated values with measured values. The formula has not been revised or changed in any way. Although the values on paper have changed, you can expect the same performance of the product.

Additional Performance Data – Degree of Cure, 453560822409 by DSC:

Temperature	Time	Degree of Cure
85 °C	30 minutes	90 %
95 °C	15 minutes	90 %
110 °C	5 – 10 minutes	90 %
120 °C	5 – 10 minutes	90 %
130 °C	< 5 minutes	90 %
140 °C	< 5 minutes	90 %
150 °C	< 5 minutes	90 %

Degree of Cure Note:

- **This chart reflects the thermal response of a very small sample analyzed in ideal conditions.**
- **Actual assemblies will require longer times to cure due to heat transfer, mass, and method of heating.**
- **The cure schedule provided on page 1 provides times and temperatures more in line with use in a typical application.**

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INSTRUCTIONS:

1. Bring to room temperature prior to use.
2. Apply to substrate with flow applicator, place in oven, allow to cure undisturbed until product is fully gelled or tack-free to the touch.
3. Clean up uncured resin with suitable organic solvent such as MEK or acetone.

SHELF LIFE AND STORAGE:

3 months at 5 °C or less.
1 month at 25 °C.
Specialty packaging may be less.
Product will tolerate ambient conditions during shipment of up to 7 days.
Usable shelf life is dependent upon method of application, storage conditions and user requirements.

NOTE: This product is sensitive to excursions above room temperature. Exposure to higher temperature, or cycling of product temperature, will shorten product shelf life.