TECHNICAL DATA SHEET

EP1385 Black

Revision date: 3/14/2022

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

DESCRIPTION:

ResinLab® EP1385 Black is an unfilled two-part electronic grade epoxy encapsulant designed for use in small to medium castings. It was formulated for applications requiring resistance to E-85 type fuels. *EP1385 Black* will provide good wetting and adhesion to most surfaces, it will also have good resistance to water, acids and bases and most organic solvents.

EP1385 Black was formulated to a 2A:1B by volume mix ratio for use in side by side dispensing cartridges and meter/mix and dispense equipment. This material has a work life of approximately one hour and cures quickly to a tack free handle strength at room temperature within 3 to 4 hours and reaches a full cure within 24-48 hours. Cure time can be accelerated by the application of heat. Times and temperatures of 30 minutes at 100 °C to 2.5 hours @ 65 °C are sufficient for full cure properties.

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	2.13 to 1	
Mix Ratio by volume	2 to 1	
Cure Schedule	24-48 hrs @ 25 °C 2.5 hrs @ 65 °C 30 min @ 100 °C	
Viscosity - Part A	15,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	900 cP	
Viscosity - Mixed	5,000 cP	
Specific Gravity - Part A	1.16	Calculated
Specific Gravity - Part B	1.09	
Specific Gravity - Mixed	1.14	
Pot Life defined as the time it takes for initial mixed viscosity to double	15 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Gel Time 100cc Sample	70 minutes	455300005339/Gardco Gel Timer
Hardness	85 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	76 °C	453560822409 by DSC
Water Absorption	0.1 %	24 hr immersion 457561824543/ASTM D570
Peak Exotherm	45.5 °C after 39 minutes for 40 mL sample	455300005593 by Type K thermocouple
Tensile Properties:		4535601224470/ASTM D638
Strength	7,500 psi	
Elongation	2 %	
Modulus	390,000 psi	

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Property:	*Value:*	*Test Method or Source:*
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	900 psi	
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	10,500 psi	
Ultimate Strength	24,000 psi	
Modulus	210,000 psi	
Flame Resistance	Passes with HB Rating @ 6.0 mm	45376013225560/UL94HB
Tested at ResinLab, not UL Certified		
Volume Resistivity	3.0 x 10^{16} ohm-cm	455300006612/ASTM D257 @ 21 °C @ 53 %RH
Surface Resistivity	4.0 x 10^{15} ohm/sq	455300006612/ASTM D257 @ 21 °C @ 53 %RH
Dielectric Constant & Dissipation Factor		455300006513/ASTM D150
@ 100 Hz	3.8, 0.01	
@ 100 kHz	3.6, 0.02	
Coefficient of Thermal Expansion by TMA		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	67 ppm/°C	
above Tg	210 ppm/°C	
E-85 Fuel Resistance Weight Gain, 1 year	4.6%*	Tested at ResinLab. Tested on a 20- gram sample disk cured for 2 hours @ 60 °C, fully immersed in E-85 type fuel.
Hardness Change	-2 Shore D points*	
Operating Temperature Range	-55 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.

Extrapolated data source: EP1385 Clear

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INSTRUCTIONS:

1. Bring to room temperature prior to use.
2. Cartridge format: Mixer should be attached keeping the cartridge vertical and any air pocket purged this way. After the mixer contains material, the mixer tip can be dropped to dispense pre-bleed amount. Attach a new static mixer with each cartridge, then pre-bleed the first 3 inches of dispensed material or until a uniform color is obtained. Maintain adequate velocity during dispensing to ensure complete mixing.
3. Bulk format: stir until homogeneous weigh and mix parts A and B accurately and thoroughly, scraping sides of container often. Do not pour from mixing container, transfer to a new container as residual unmixed material may cause a tacky spot on the surface of the casting. Maintain adequate velocity during dispensing to ensure complete mixing.
4. Clean up uncured resin with suitable organic solvent such as MEK or acetone.
5. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.

SHELF LIFE AND STORAGE:

12 months at 25 °C.
Specialty packaging may be less.

Many epoxy resin systems are prone to crystallization as epoxy resin is a super-cooled fluid. This condition may give the product a gritty or grainy appearance (or hazy in clear products). Products in this state will not usually cure to normal and expected properties. In extreme cases it may appear solid and cured. Fluctuating temperatures (within 5 to 50 °C) aggravate this phenomenon. Heating the individual component to 50 to 60 °C while stirring can usually restore products to original state. Storage at 25 +/- 10 °C is optimum for most products.

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