TECHNICAL DATA SHEET

EP1390LC Black

Revision date: 2/23/2022

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

DESCRIPTION:

Resinlab® EP1390LC Black is a medium viscosity, self-extinguishing flame retardant epoxy casting resin system. It is a REACH compliant version of EP1390 Black that is lower in cost than EP1390RC Black. *EP1390LC Black* is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034) for UL Standard 94. It qualifies for a vertical burn rating of V-1 at 3 mm thickness and V-0 at 6 mm thickness. This formula is also compliant to RoHS 2015/863/EU and subsequent amendments.

EP1390LC Black was designed for medium mass potting for printed wire and circuit boards, coils, chargers and power supply applications. It has excellent chemical resistance and cures quickly at room temperature to a tough, semi-rigid polymer. It has good wetting and adhesion to most surfaces and is free flowing to penetrate voids and give good air release.

EP1390LC Black was formulated to a 4A:1B by volume mix ratio for ease of use in side by side dispensing cartridges and meter/mix and dispense equipment. It will generally reach handle cure at room temperature within 4 hours depending upon mass and ambient temperature. Full cure is usually achieved within 48 hours at room temperature. Cure time can be accelerated by the application of heat after product has gelled. This formula contains soft, low-abrasion fillers which can separate over time, although they have good resistance to hard settling.

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Mix Ratio **Mix Ratio by weight** **Mix Ratio by volume**	Part A to Part B 4.92 to 1 4 to 1	Calculated
Cure Schedule	48 hrs @ 25 °C 2 hrs @ 65 °C 30 min @ 100 °C	
Viscosity - Part A **Viscosity - Part B** **Viscosity - Mixed**	20,000 cP 12,000 cP 14,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Specific Gravity - Part A **Specific Gravity - Part B** **Specific Gravity - Mixed**	1.37 1.17 1.32	Calculated
Pot Life defined as the time it takes for initial mixed viscosity to double	60 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Gel Time 100cc Sample	2 hours	455300005339/Gardco Gel Timer
Hardness	80 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	63 °C	453560822409 by DSC
Water Absorption	0.06 %	24 hr immersion 457561824543/ASTM D570

TECHNICAL DATA SHEET

EP1390LC Black

Revision date: 2/23/2022

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

Property:	*Value:*	*Test Method or Source:*
Peak Exotherm	35.5 °C after 2 hours and 40 minutes for 40mL sample	455300005593 by Type K thermocouple
Tensile Properties:		4535601224470/ASTM D638
Strength	4,800 psi	
Elongation	1 – 2 %	
Modulus	613,000 psi	
Lap Shear Strength 0.010" Bond Line, Al to Al	1,700 psi	4535601224468/ASTM D1002
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	12,000 psi	
Offset (0.2%) Yield Strength	11,000 psi	
Ultimate Strength	20,000 psi	
Modulus	220,000 psi	
Flame Resistance UL Certified, File #E186034	Passes with V-1 Rating @ 3.0 mm Passes with V-0 Rating @ 6.0 mm	45376013225560/UL94V
Thermal Conductivity by Transient Plane Heat Source (TPS)	0.39 W/m.K	Thermtest TPS Hot Disk ISO 22007-2 45376013225604
Volume Resistivity	5.30 x 10^{15} ohm-cm	455300006612/ASTM D257 @ 25 °C @ 53 %RH
Surface Resistivity	1.67 x 10^{16} ohm/sq	455300006612/ASTM D257 @ 25 °C @ 53 %RH
Dielectric Constant & Dissipation Factor		455300006513/ASTM D150
@ 100 Hz	3.0, 0.008	
@ 100 kHz	2.9, 0.011	
DC Dielectric Strength	87.2 kV/mm	457561824539; ASTM D3755/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	48 ppm/°C	
above Tg	157 ppm/°C	
Operating Temperature Range	-40 to 150 °C**	
Relative Thermal Index (RTI)	90 °C	UL746B, Table 7.1 Generic Value Based on Composition

** 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.

TECHNICAL DATA SHEET

EP1390LC Black

Revision date: 2/23/2022

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

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. A power mixer is suggested such as a 500-1000 rpm device with a mix paddle sufficient to turn material and disperse any filler. 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. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.
5. Clean up uncured resin with suitable organic solvent such as MEK or acetone.

SHELF LIFE AND STORAGE:

6 months DOP at 25 °C in cartridges.
Store horizontally.
Specialty packaging may be less.
12 months at 25 °C in bulk packaging.
This system is prone to settling due to high filler content. Inventory should be rotated on a FIFO (first in, first out) basis.
Bulk containers should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

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.