TECHNICAL DATA SHEET

EP1340 Black

Revision date: 2/14/2022

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

DESCRIPTION:

Resinlab® EP1340 Black is a medium viscosity, flame retardant epoxy casting resin system. It is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034) for UL Standard 94. *EP1340 Black* qualifies for a vertical burn rating of V-0 at 3 mm thickness. It has excellent chemical resistance. It 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.

EP1340 Black was formulated to a 1A:1B by volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. *EP1340 Black* will generally reach handle cure at room temperature within 1 to 4 hours depending upon mass and ambient temperature. Full cure usually achieved within 24 – 48 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 2 hours at 60 °C to 30 minutes at 100 °C are typical for most castings (less than 100 grams).

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	Part A to Part B	Calculated
Mix Ratio by weight	1.11 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	24-48 hrs @ 25 °C 2 hrs @ 60 °C 30 min @ 100 °C	
Viscosity - Part A	12,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	16,000 cP	
Viscosity - Mixed	13,500 cP	
Specific Gravity - Part A	1.37	Calculated
Specific Gravity - Part B	1.23	
Specific Gravity - Mixed	1.30	
Pot Life defined as the time it takes for initial mixed viscosity to double	10 – 12 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Hardness	75 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	20 °C	453560822409 by DSC
Water Absorption	1 %	24 hr immersion 457561824543/ASTM D570

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Property:	*Value:*	*Test Method or Source:*
Tensile Properties:		4535601224470/ASTM D638
Strength	1,300 psi	
Elongation	24 %	
Modulus	195,000 psi	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,500 psi	
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	19,000 psi	
Ultimate Strength	19,000 psi	
Modulus	90,000 psi	
Flame Resistance	Passes with V-0 Rating @ 3.0 mm	45376013225560/UL94V
UL Certified, File #E186034		
Thermal Conductivity by LFA	0.22 W/m.K	453560822409/ASTM E1461
Volume Resistivity	1.51 x 10^{14} ohm-cm	455300006612/ASTM D257 @ 22 °C @ 16 %RH
Surface Resistivity	7.19 x 10^{14} ohm/sq	455300006612/ASTM D257 @ 22 °C @ 16 %RH
Dielectric Constant & Dissipation Factor		455300006513/ASTM D150
@ 100 Hz	3.9, 0.07	
@ 100 kHz	3.2, 0.03	
AC Dielectric Strength	20.2 kV/mm	DCV6101609; ASTM D149 Method A, immersed in ASTM D3487 Type II Oil Specimen thickness was ~1-3 mm
Coefficient of Thermal Expansion by TMA		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	55 ppm/°C	
above Tg	170 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.

INSTRUCTIONS:

1. Bring to room temperature prior to use.

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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 cartridges horizontally.
12 months at 25 °C in bulk packaging.
Specialty packaging may be less.
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.