

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

DESCRIPTION:

Resinlab[®] EP1295 Black is a REACH and RoHS compliant medium viscosity, halogen free flame retardant epoxy casting resin system. It is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034, Project 4787986851), for UL Standard 94. EP1295 Black is certified for a vertical burn rating of V-0 at 6.1 mm thickness.

EP1295 Black provides very good resistance to water, salt spray, inorganic acids and bases and most organic solvents. 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 release trapped air. It works well in very large mass potting and low stress applications.

EP1295 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. EP1295 Black will generally reach handle cure at room temperature within 16 to 24 hours depending upon mass and ambient temperature. Full cure usually achieved within 72 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 3 hours at 65 °C to 1 hour 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
By weight	1.04 to 1	
By volume	1 to 1	
Cure Schedule	Handle cure 16-24 hours @ 25 °C Full cure 72 hours @ 25 °C 3 hour @65 °C 1 hour @ 100 °C	
Viscosity – Part A	11,000 cps @1/s	Rheometer parallel plate 25mm
Viscosity – Part B	11,000 cps @1/s	455300006291
Viscosity - Mixed	11,000 cps @1/s	
Specific Gravity – Part A	1.50	Calculated
Specific Gravity – Part B	1.44	
Specific Gravity - Mixed	1.47	
Pot Life, defined as the time it takes for initial mixed viscosity to double	10 minutes	Rheometer parallel plate 25mm@1/s 455300006291
Gel Time	8 Hours	453560822627, observed cup and stick
Glass Transition Temperature/Tg	9 °C	453560822409 by DSC
Hardness	58 Shore D	455300006287/ASTM D2240
Water Absorption	0.3% after 24 hours	457561824543/ASTM D570
Tensile Properties:		455300006285/ASTM D638
Strength	900 psi	
Elongation	14%	

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Modulus	10,500 psi	
Lap Shear Strength 0.010" bond line Al to Al	1,400 psi	455300005642/ASTM D1002
Compressive Properties:		455300006265/ASTM D695
Strength	6,500 psi	
Modulus	20,000 psi	
Flame Resistance	UL Certified for V-0 at 6.1mm thickness.	UL94
Thermal Conductivity by LFA	0.36 W / (m.K)	453560822409/ASTM E1461
Coefficient of Thermal Expansion by TMA	70 ppm/ °C Below Tg 175 ppm/ °C Above Tg	455300005340 /ASTM E831 TMA, 5 °C/min
Dielectric Constant / Dissipation Factor		455300006513/ASTM D150
@ 100 Hz	6.6, 0.2	
@ 100 kHz	4.8, 0.06	
Dielectric Strength	410 V/mil*	Estimated
Surface Resistivity	1.07×10^{14} ohm/sq (@ 23 %RH)	455300006612/ASTM D257
Volume Resistivity	1.23×10^{12} ohm-cm (@ 18 °C)	
Temperature Range	-40 to 150 °C**	

** Temperature Rating 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. Although the values on paper have changed, you can expect the same performance of the product.

INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing. Bulk containers should be inverted every two to three weeks to reduce the accumulation of the flame retardant fillers on the bottom of the containers. Inventory should be rotated on a FIFO (first in, first out) basis. See additional details below.
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: 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, acetone or other organic solvent.

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SHELF LIFE AND STORAGE: 6 months at 25 °C in bulk.
6 months at 5 °C in cartridges
Specialty packaging may be less.

NOTE: When using EP1295 Black in cartridges some additional inventory control measures should be taken to optimize material stability throughout the course of the entire shelf life. This product contains fillers that can settle with time. To help keep the fillers uniform within the cartridges it is recommended that they be stored horizontally, so fillers do not settle down to the plunger of the cartridges. Once a week rotate the boxes 180 degrees so that the cartridges rest horizontally on their other side.

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.