

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

DESCRIPTION:

Resinlab[®] EP1285 Black / HD-10 is a highly filled, medium viscosity black casting resin designed for applications requiring a high degree of thermal conductivity and a low CTE combined with a moderate free flowing viscosity. This formula gives excellent resistance to acids, bases, water, and most organic compounds. The high filler content also enhances resistance to thermal cycle stresses. This product must be cured with heat with a recommended cure schedule of two hours at 80 °C followed by three hours at 150 °C to reach full cure while limiting shrinkage.

The resin contains a high loading of abrasive aluminum oxide filler, which can introduce wear considerations for wetted components of meter-mix and dispensing equipment. Warming the assembly prior to filling will aid in flow and air release. Additional vacuum degassing may be desired for some applications.

TYPICAL PROPERTIES:

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

<i>Property:</i>	<i>Value:</i>	<i>Test Method or Source:</i>
Color	Black	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	4.76 to 1	
Mix Ratio by volume	2.5 to 1	
Cure Schedule	2 hrs @ 80 °C + 3 hrs @ 150 °C	
Viscosity - Part A	35,000 cP	TA HR20 Rheometer 25mm parallel plate @
Viscosity - Part B	140 cP	1/s DCV6100723
Viscosity - Mixed	2,700 cP	
Specific Gravity - Part A	2.42	Calculated
Specific Gravity - Part B	1.21	
Specific Gravity - Mixed	2.05	
Work Life	8 – 12 hours	Observed, cup and stick
Hardness	90 Shore D *	455300006287/ASTM D2240
Water Absorption	0.06 % *	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	6,500 psi *	
Elongation	1 % *	
Modulus	1,050,000 psi *	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,150 psi *	
Compressive Properties:		4535601224467/ASTM D695
Ultimate Strength	21,500 psi *	
Modulus	350,000 psi *	
Thermal Conductivity by LFA	0.79 W/m.K	453560822409/ASTM E1461
Volume Resistivity	1 x 10 ¹⁵ ohm-cm *	Estimated

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Property:	Value:	Test Method or Source:
Dielectric Constant & Dissipation Factor		Estimated
@ 100 Hz	4.9 *	
AC Dielectric Strength	400 V/mil *	Estimated
Coefficient of Thermal Expansion by TMA		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	36 ppm/°C *	
above Tg	160 ppm/°C *	
Linear Shrinkage	0.001 cm/cm *	Estimated
Operating Temperature Range	-55 to 230 °C**	
Relative Thermal Index (RTI)	130 °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: EP1285 White / HD-10

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.

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SHELF LIFE AND STORAGE:

6 months DOP @ 25 °C.

Bulk containers: Store Part B under nitrogen, dry air, or another inert gas to minimize hydrolysis.

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.

Anhydride curing agents, with sufficient exposure to humidity or moisture, can hydrolyze to an insoluble white solid that will not provide expected cure of the epoxy resin. To prevent this from occurring, product should be stored in original properly sealed container at temperature between 20-35 °C and in a dry place. Venting and sealing the curing agent with dry air, nitrogen, or other inert and dry gas during and after use is recommended. Seal container tightly after use.