

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

**DESCRIPTION:**

*ResinLab*<sup>®</sup> *EP1200LV* is a low viscosity version of EP1200, which is a highly filled, medium viscosity black casting resin designed for applications requiring a moderate thermal conductivity, flexibility, and a low CTE. It contains abrasive aluminum oxide filler which can introduce wear considerations for wetted components.

*EP1200LV* was formulated to a 1A:1B by volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment.

*EP1200LV* passes ResinLab testing to meet the requirements of UL Standard 94 for a horizontal burn rating at 1/4" thickness.

*EP1200LV* will reach handle cure within 24 hours at room temperature and final cure within 72 hours. Final cure properties can be achieved more quickly by the application of heat after product has gelled. Cure times and temperatures typical for most applications range from 2 hours at 65 °C to 30 minutes at 100 °C. Time to heat substrate must be taken into account with cooler temperatures extending the work time.

**TYPICAL PROPERTIES:**

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

<b>Property:</b>	<b>Value:</b>	<b>Test Method or Source:</b>
<b>Color</b>	Black	Visual
<b>Mix Ratio</b>	Part A to Part B	Calculated
<b>Mix Ratio by weight</b>	1 to 1	
<b>Mix Ratio by volume</b>	1 to 1	
<b>Cure Schedule</b>	24 hrs @ 25 °C for handle cure 72 hrs @ 25 °C for full cure 2 hrs @ 65 °C 30 min @ 100 °C	
<b>Viscosity - Part A</b>	7,500 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
<b>Viscosity - Part B</b>	22,000 cP	
<b>Viscosity - Mixed</b>	25,000 cP	
<b>Specific Gravity - Part A</b>	1.56	Calculated
<b>Specific Gravity - Part B</b>	1.66	
<b>Specific Gravity - Mixed</b>	1.61	
<b>Pot Life defined as the time it takes for initial mixed viscosity to double</b>	15 – 20 minutes	Rheometer parallel plate 25mm @1/s 455300006291
<b>Gel Time 100cc Sample</b>	80 minutes	455300005339/Gardco Hot Pot Gel Timer
<b>Hardness</b>	70 Shore D	455300006287/ASTM D2240
<b>Glass Transition Temperature/Tg</b>	1 °C	453560822409 by DSC
<b>Water Absorption</b>	0.19 %	24 hr immersion 457561824543/ASTM D570

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<b>Property:</b>	<b>Value:</b>	<b>Test Method or Source:</b>
<b>Tensile Properties:</b>		4535601224470/ASTM D638
<b>Strength</b>	1,300 psi	
<b>Elongation</b>	30 %	
<b>Modulus</b>	57,000 psi	
<b>Lap Shear Strength</b>		4535601224468/ASTM D1002
<b>0.010" Bond Line, Al to Al</b>	1,100 psi	
<b>Compressive Properties:</b>		4535601224467/ASTM D695
<b>Yield Strength</b>	9,700 psi	
<b>Ultimate Strength</b>	18,000 psi	
<b>Modulus</b>	30,000 psi	
<b>Flame Resistance</b>	Passes with HB Rating @ 0.25"	45376013225560/UL94HB
<b>Tested at ResinLab, not UL Certified</b>		
<b>Thermal Conductivity by LFA</b>	0.4 W/m.K	453560822409/ASTM E1461
<b>Volume Resistivity</b>	$3.61 \times 10^{14}$ ohm-cm	455300006612/ASTM D257 @ 18 °C @ 20 %RH
<b>Surface Resistivity</b>	$9.47 \times 10^{15}$ ohm/sq	455300006612/ASTM D257 @ 18 °C @ 20 %RH
<b>Dielectric Constant &amp; Dissipation Factor</b>		455300006513/ASTM D150
<b>@ 100 Hz</b>	3.5, 0.030	
<b>@ 100 kHz</b>	3.2, 0.020	
<b>AC Dielectric Strength</b>	20 kV/mm *	ASTM D149 Method A, immersed in ASTM D3487 Type II Oil Specimen thickness was ~1-3 mm
<b>Coefficient of Thermal Expansion by TMA</b>		455300005340/ASTM E831 TMA, 5 °C/min
<b>below Tg</b>	90 ppm/°C	
<b>above Tg</b>	171 ppm/°C	
<b>Operating Temperature Range</b>	-40 to 150 °C**	
<b>Relative Thermal Index (RTI)</b>	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.