

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

DESCRIPTION:

ResinLab® EP1310 is a two-part medium reactivity epoxy encapsulant. This product can achieve gelling of the top layer in 5-10 seconds when exposed to UV light. Full cure will occur within 24 hours at room temperature. Lighting in the workspace will not affect speed of the room temperature cure process. Once catalyzed the resin warms to approximately 32 °C almost instantaneously.

Cure times can be accelerated with application of heat after the product has gelled. Times and temperatures from 1 hour @ 65 °C to 20 minutes at 100 °C are typical for small castings (less than 50 grams).

Fluid Research® progressive cavity pumps are ideal for shear sensitive systems like EP1310. Piston type MMD machines with high shear should be avoided.

TYPICAL PROPERTIES:

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

Property:	Value:	Test Method or Source:
Color	Clear	Visual
Mix Ratio	Part A to Part B	Calculated
By weight	2.15 to 1	
By volume	2 to 1	
Cure Schedule	1 hour @65 °C 20 minutes @ 100 °C	
Cure Schedule	<u>mJ/cm²</u>	455300005390 / Power Puck II Radiometer
UVA	2941	
UVB	829	
UVC	187	
UVV	3744	
Viscosity – Part A	3,500 cps	Rheometer parallel plate 25mm@1/s
Viscosity – Part B	1,300 cps	455300006291
Viscosity - Mixed	3,000 cps	
Specific Gravity – Part A	1.14	Calculated
Specific Gravity – Part B	1.02	
Specific Gravity - Mixed	1.09	
Pot Life-defined as the time it takes for initial mixed viscosity to double	5 minutes	Rheometer parallel plate 25mm@1/s 455300006291
Work Life	27 minutes	453560822627
Glass Transition Temperature/Tg	48 °C	453560822409 by DSC
Hardness	75 Shore D	455300006287/ASTM D2240
Water Absorption	0.09% after 24 hours	457561824543/ASTM D570
Peak Exotherm	42 °C after 30 minutes for 40mL sample	455300005593 by Type K thermocouple
Tensile Properties:		455300006285/ASTM D638
Strength	6,500 psi	
Elongation	4%	
Modulus	320,000 psi	
Lap Shear Strength		455300005642/ASTM D1002
0.010" bond line Al to Al	3,500 psi	
Compressive Properties:		455300006265/ASTM D695
Strength	25,000 psi	

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Modulus	180,000 psi	
Thermal Conductivity by LFA	0.18 W / (m.K)	453560822409/ASTM E1461
Volume Resistivity	2×10^{13} ohm-cm*	455300006612/ASTM D257
Dielectric Constant @ 100 Hz	3.5*	455300006513/ASTM D150
Dielectric Strength	440 V/mil*	ASTM D149 Method A, immersed in ASTM D3487 Type II Oil
Coefficient of Thermal Expansion by TMA	67ppm/ °C below Tg 201 ppm/ °C above Tg	455300005340/ASTM E831 TMA, 5 °C/min
Temperature Range	-40 to 150 °C**	

* Asterisk denotes values considered typical to associated resin systems or extrapolated from other test results.

** 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. 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 both components to room temperature prior to mixing.
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. 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.

SHELF LIFE AND STORAGE:

12 months at 25 °C
Specialty packaging may be less.
Protect from all light sources. Store cartridges vertically.

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.

This system contains acrylate monomers in Part A. Monomers are subject to polymerization under high temperatures and/or pressures in some pumping and metering systems. Wetted surfaces should be stainless steel and Teflon where appropriate.

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