TECHNICAL DATA SHEET
EP1046FG Clear

06/12/2018

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

DESCRIPTION:

ResinLab® EP1046FG Clear is a two-part, unfilled, electronic grade epoxy encapsulant designed for use with small castings (less than 25 grams). This material will cure very quickly with low exotherm to a tough, semi-rigid polymer matrix. The low viscosity allows for good wicking and penetration into components and circuitry and will also release trapped air. It was very good resistance to water, acids, bases, and most organic solvents.

EP1046FG Clear was formulated to a 1A:1B volume mix ratio for use in side by side dispensing cartridges and meter/mix and dispense equipment. *EP1046FG Clear* will reach handle cure at room temperature within 1 to 2 hours. Cure time can be accelerated with the application of heat after the product has gelled. Times and temperatures from 30 minutes at 65 °C to 10 minutes at 100 °C are typical for small castings.

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Clear	Visual
Mix Ratio **By weight** **By volume**	Part A to Part B 1.19 to 1 1 to 1	Calculated
Cure Schedule	30 minutes @65 °C 10 minutes @ 100 °C	
Viscosity – Part A **Viscosity – Part B** **Viscosity - Mixed**	1,100 cps 2,600 cps 2,000 cps, est'd	Rheometer parallel plate 25mm@1/s 455300006291
Specific Gravity – Part A **Specific Gravity – Part B** **Specific Gravity - Mixed**	1.14 0.98 1.06	Calculated
Pot Life, defined as the time it takes for initial mixed viscosity to double	1.5 - 2 minutes	Rheometer parallel plate 25mm@1/s 455300006291, extrapolated from EP1046FG Black
Gel Time	3 minutes/100cc sample	455300005339/Gardco Hot Pot Gel Timer
Glass Transition Temperature/Tg	31 °C	453560822409 by DSC
Hardness	80 Shore D	455300006287/ASTM D2240
Water Absorption	0.1% after 24 hours	457561824543/ASTM D570
Peak Exotherm	130.5 °C after 30 minutes for 40mL sample	455300005593 by Type K thermocouple
Tensile Properties: **Strength** **Elongation** **Modulus**	 4,800 psi 7% 250,000 psi	455300006285/ASTM D638
Lap Shear Strength **0.010" bond line Al to Al**	 1,300 psi	455300005642/ASTM D1002
Compressive Properties: **Strength**	 21,000 psi	455300006265/ASTM D695

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Modulus	140,000 psi	
Flame Resistance	Passes Resinlab testing with HB rating at 6mm thickness. Not UL Certified.	UL94
Thermal Conductivity by LFA	0.1 W / (m.K)*	453560822409/ASTM E1461
Surface Resistivity **Volume Resistivity**	2.5 x 10^{16} ohm/sq (@ 18.4 %RH) 4.8 x 10^{15} ohm-cm (@ 18.4 °C)	455300006612/ASTM D257
Dielectric Constant / Dissipation Factor **@ 100 Hz** **@ 100 kHz**	 3.0, 0.01 2.9, 0.01	455300006513/ASTM D150
Dielectric Strength	410 V/mil*	ASTM D149 Method A, immersed in ASTM D3487 Type II Oil
Coefficient of Thermal Expansion by TMA	70 ppm/ °C below Tg 211 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.

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SHELF LIFE AND STORAGE: 12 months at 25 °C
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.