TECHNICAL DATA SHEET
EP965 Black

06/14/2018

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

DESCRIPTION:

ResinLab® EP965 Black is a two part, unfilled epoxy encapsulant designed for small to medium sized castings and for bonding a variety of materials. EP965 Black will have good wetting and adhesion to most surface and is free flowing allowing it to penetrate voids and release trapped air.

EP965 Black cures at room temperature to a smooth, high gloss finish. It is a tough polymer that can withstand thermal shock and cycle resistance. It also has good resistance to water, acids, bases, and most organic solvents.

EP965 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. EP965 Black will cure at room temperature to a handle strength within 6-12 hours and full cure within 24 hours. Final cure properties can be accelerated by the application of heat after the product has gelled. Times and temperatures including 1 hour at 65 °C or 20 minutes at 100 °C can be used. Time to heat substrate must be taken into account and cooler temperatures will extend the work time.

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Mix Ratio **By weight** **By volume**	Part A to Part B 1.17 to 1 1 to 1	Calculated
Cure Schedule	1 hour @65 °C 20 minutes @ 100 °C 15 minutes @ 110 °C 24 hours @ 25 °C	
Viscosity – Part A **Viscosity – Part B** **Viscosity - Mixed**	16,000 cps 9,000 cps 14,000 cps	Rheometer parallel plate 25mm@1/s 455300006291
Specific Gravity – Part A **Specific Gravity – Part B** **Specific Gravity - Mixed**	1.16 0.97 1.07	Calculated
Pot Life, defined as the time it takes for initial mixed viscosity to double	12 minutes	Rheometer parallel plate 25mm@1/s 455300006291
Glass Transition Temperature/Tg	53 °C	453560822409 by DSC
Hardness	80 Shore D	455300006287/ASTM D2240
Water Absorption	0.18% after 24 hours	457561824543/ASTM D570
Tensile Properties: **Strength** **Elongation** **Modulus**	 8,500 psi 5% 250,000 psi	455300006285/ASTM D638
Lap Shear Strength **0.010” bond line Al to Al**	 1,200 psi	455300005642/ASTM D1002
Compressive Properties:		455300006265/ASTM D695

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Strength **Modulus**	25,000 psi 178,000 psi	
Thermal Conductivity by LFA	0.1 W / (m.K)*	453560822409/ASTM E1461
Volume Resistivity	8 x 10^{14} ohm-cm*	455300006612/ASTM D257
Dielectric Constant / Dissipation Factor @ 100 Hz	4.2*	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	75 ppm/ °C below Tg 200 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.

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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.