TECHNICAL DATA SHEET

EP965SC7 Black

Revision date: 1/11/2023

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

DESCRIPTION:

ResinLab® EP965SC7 Black is a two-part unfilled electronic grade epoxy encapsulant designed for medium sized castings. It cures at room temperature to a tough, semi-rigid polymer with a high gloss surface. *EP965SC7 Black* has good wetting and adhesion to most surfaces and is free flowing allowing it to penetrate voids and release trapped air. It has very good resistance to water, acids and bases and most organic solvents.

EP965SC7 Black was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. It will reach full cure at room temperature within 24 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 30 minutes at 65 °C to 15 minutes at 100 °C are typical for small castings (less than 50 grams). Time to heat substrate must be taken into account. Cooler temperatures will also extend work time and increase cure times.

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Mix Ratio **Mix Ratio by weight** **Mix Ratio by volume**	Part A to Part B 1.19 to 1 1 to 1	Calculated
Cure Schedule	24 hrs @ 25 °C 30 min @ 65 °C 15 min @ 100 °C	
Viscosity - Part A **Viscosity - Part B** **Viscosity - Mixed**	14,000 cP 3,500 cP 5,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Specific Gravity - Part A **Specific Gravity - Part B** **Specific Gravity - Mixed**	1.16 0.98 1.07	Calculated
Pot Life defined as the time it takes for initial mixed viscosity to double	20 minutes	Rheometer parallel plate 25mm @1/s 455300006291
Gel Time 100cc Sample	55 minutes	455300005339/Gardco Gel Timer
Peak Exotherm	33.5 °C after 66 minutes for 40 mL sample	455300005593 by Type K thermocouple
Hardness	80 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	48 °C	453560822409 by DSC
Water Absorption	0.12 %	24 hr immersion 457561824543/ASTM D570

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Property:	*Value:*	*Test Method or Source:*
Tensile Properties:		4535601224470/ASTM D638
Strength	6,500 psi *	
Elongation	5 % *	
Modulus	318,000 psi *	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,300 psi *	
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	9,800 psi *	
Ultimate Strength	17,000 psi *	
Modulus	161,000 psi *	
Flame Resistance	Passes with HB Rating @ 6.0 mm	45376013225560/UL94HB
Tested at ResinLab, not UL Certified		
Electrical Resistivity:		455300006612/ASTM D257 @ 20 °C @ 10 %RH
Volume	3.76 x 10^{15} ohm-cm	
Surface	6.72 x 10^{15} ohm/sq	
Dielectric Constant & Dissipation Factor:		455300006513/ASTM D150
@ 100 Hz	3.2, 0.01	
@ 100 kHz	3.0, 0.01	
AC Dielectric Strength	17 kV/mm (estimated)	DCV6101609; ASTM D149 Method A, immersed in ASTM D3487 Type II Oil
Coefficient of Thermal Expansion by TMA:		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	71 ppm/°C	
above Tg	213 ppm/°C	
Operating Temperature Range	-55 to 150 °C**	
Relative Thermal Index (RTI)	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.

*** Extrapolated data source: EP965SC7 Clear**

INSTRUCTIONS:

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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. 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. Clean up uncured resin with suitable organic solvent such as MEK or acetone.
5. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.

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.