TECHNICAL DATA SHEET

EP1218 Black

Revision date: 1/5/2024

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

DESCRIPTION:

Resinlab® EP1218 Black is a two-part unfilled electronic grade epoxy encapsulant designed for medium to large sized castings. It cures completely at room temperature to a tough, flexible polymer. The low viscosity allows for good wicking and penetration into components and circuitry and also gives good air release. It provides good resistance to water, acids and bases and most organic solvents. Thermal shock and cycling properties are also enhanced by its high elongation giving it the ability to absorb differences in CTE's of substrates.

EP1218 Black was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. *EP1218 Black* will reach full cure at room temperature within 48 hours. Cure time can be accelerated by the application of heat. Times and temperatures of 7 hours at 50 °C, 6 hours at 65 °C or 30 minutes at 100 °C are typical for most applications. Time to heat substrate must be taken into account. Cooler temperatures will 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	Part A to Part B	Calculated
Mix Ratio by weight	1.10 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	48 hrs @ 25 °C 7 hrs @ 50 °C 6 hrs @ 65 °C 30 min @ 100 °C	
Viscosity - Part A	500 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	400 cP	
Viscosity - Mixed	560 cP	
Specific Gravity - Part A	1.09	Calculated
Specific Gravity - Part B	0.98	
Specific Gravity - Mixed	1.04	
Pot Life defined as the time it takes for initial mixed viscosity to double	50 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Work Life	> 4 hours (100g sample)	453560822627/Visual, cup and stick
Gel Time 100cc Sample	9.5 hours	455300005339/Gardco Hot Pot Gel Timer
Hardness	85 Shore A	455300006287/ASTM D2240
Glass Transition Temperature/Tg	1 °C	453560822409 by DSC
Water Absorption	0.4 %	24 hr immersion 457561824543/ASTM D570

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Property:	*Value:*	*Test Method or Source:*
Tensile Properties:		4535601224470/ASTM D638
Strength	400 psi	
Elongation	80 %	
Modulus	910 psi	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	700 psi	
Dielectric Constant & Dissipation Factor:		455300006513/ASTM D150
@ 100 Hz	4.2 *	
AC Dielectric Strength	16 V/mil *	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	92 ppm/°C	
above Tg	225 ppm/°C	
Gel Time @ 70 °C	25-30 minutes/15g sample	455300005390/Sunshine Gel Timer
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.

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INSTRUCTIONS:

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.