TECHNICAL DATA SHEET

EP1305 Black

Revision date: 7/22/2024

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

DESCRIPTION:

Resinlab® EP1305 Black is a highly toughened urethane modified epoxy designed for bonding PVC, metals, ceramics, and other difficult to bond substrates. The system has a thixotropic non-sag viscosity but is easily dispensed from side-by-side cartridge systems.

EP1305 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. *EP1305 Black* will reach handle cure at room temperature within 1-2 hours and full properties within 24 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 2 hours at 65 °C to 30 minutes at 100 °C are typical for most applications. 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	Part A to Part B	Calculated
Mix Ratio by weight	1.15 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	24 hrs @ 25 °C 2 hrs @ 65 °C 30 min @ 100 °C	
Viscosity - Part A	120,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	90,000 cP	
Viscosity - Mixed	114,000 cP	
Specific Gravity - Part A	1.13	Calculated
Specific Gravity - Part B	0.99	
Specific Gravity - Mixed	1.05	
Pot Life defined as the time it takes for initial mixed viscosity to double	13 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Gel Time	30 minutes (40g sample)	Visual, Observed cup and stick
Peak Exotherm	124.5 °C for 40 mL sample	455300005593 by Type K thermocouple
Hardness	70 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	36 °C	453560822409 by DSC
Water Absorption	0.12 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	3,100 psi	
Elongation	9 – 10 %	
Modulus	142,000 psi	

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Property:	*Value:*		*Test Method or Source:*
Lap Shear Strength			4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	2,500 psi		
Compressive Properties:			4535601224467/ASTM D695
Yield Strength	26,000 psi		
Ultimate Strength	26,000 psi		
Modulus	131,000 psi		
Flame Resistance	Passes with HB Rating @ 6.0 mm		45376013225560/UL94HB
Tested at ResinLab, not UL Certified			
Thermal Conductivity by Transient Plane Heat Source (TPS)	0.21 W/m.K		Thermtest TPS Hot Disk ISO 22007-2 45376013225604
Electrical Resistivity:			455300006612/ASTM D257 @ 20 °C @ 20 %RH
Volume	1×10^{14} ohm-cm		
Surface	3.5×10^{15} ohm/sq		
Dielectric Constant & Dissipation Factor:	ε'	tan δ	455300006513/ASTM D150
@ 100 Hz	3.5	0.04	
@ 100 kHz	3.1	0.03	
AC Dielectric Strength	17 kV/mm *		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	102 ppm/°C		
above Tg	232 ppm/°C		
Peel Strength	15 pli*		
Operating Temperature Range	-40 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.

APPLICATION NOTE: ***Do not apply to damp or wet substrates or dilute with water. Water has a negative impact on the structural integrity of the product and will lead to adhesive failure.***

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.