TECHNICAL DATA SHEET
EP1215RCLV Black

12/10/2020

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

DESCRIPTION:

ResinLab® EP1215RCLV Black is a two-part unfilled epoxy structural adhesive designed for bonding applications requiring high strength and good impact resistance. It cures completely at room temperature to a tough, flexible to semi-rigid polymer depending upon the mix ratio employed. It has good wetting and adhesion to most surfaces and has a free-flowing viscosity. It has very good resistance to water, acids and bases and most organic solvents. This version was designed to be compliant to the REACH regulation, and as of the date of this document it contains no raw materials listed on the ECHA Substances of Very High Concern list. This formula also complies with the ROHS 3 Directive (EU) 2015/863.

EP1215RCLV Black was formulated to allow users to vary mix ratio to achieve desired hardness and flexibility. It can be mixed anywhere from an A/B ratio of 2-to-1 to 1-to-2 by weight or volume. *EP1215RCLV Black* will normally reach full cure at room temperature within 24 – 48 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 2 hours at 65 °C to 10 minutes at 100 °C are typical for most applications. 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: 1A:1B*	*Value: 2A:1B*	*Value: 1A:2B*	*Test Method or Source:*
Color	Black	Black	Black	Visual
Mix Ratio **By weight** **By volume**	Part A to Part B 1.19 to 1 1 to 1	Part A to Part B 2.39 to 1 2 to 1	Part A to Part B 0.6 to 2 1 to 2	Calculated
Cure Schedule	24-48 hours @ 25 °C 2 hrs @ 65 °C 10 min @ 100 °C	24-48 hours @ 25 °C 2 hrs @ 65 °C 10 min @ 100 °C	24-48 hours @ 25 °C 2 hrs @ 65 °C 10 min @ 100 °C	
Viscosity – A **Viscosity – B** **Viscosity - Mixed**	12,500 cps @1/s 7,400 cps @1/s 8,000 cps @1/s	12,500 cps @1/s 7,400 cps @1/s 10,000 cps @1/s	12,500 cps @1/s 7,400 cps @1/s 6,700 cps @1/s	TA HR20 Rheometer 25mm parallel plate
SG – Part A **SG – Part B** **SG – Mixed**	1.16 0.98 1.07	1.16 0.98 1.07	1.16 0.98 1.07	Calculated
Pot Life, defined as the time it takes for initial mixed viscosity to double	30 minutes	45 minutes	25 minutes	TA HR20 Rheometer 25mm parallel plate
Gel Time	1 hour, 40 minutes 100cc sample	2 hours, 50 minutes 100cc sample	2 hours 100cc sample	455300005339/Gardco Stable Temp & Hot Pot Gel Timer
Hardness	80 Shore D	80 Shore D	65 Shore D	455300006287/ ASTM D2240
Glass Transition Temperature/Tg	64 °C	64 °C	28 °C	453560822409 by DSC

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Water Absorption	0.14%	0.10%	1.0%	457561824543/ ASTM D570
Peak Exotherm	34.5 °C after 18 minutes for 40mL sample	32 °C after 38 minutes for 40mL sample	38 °C after 70 minutes for 40mL sample	455300005593 by Type K thermocouple
Coefficient of Thermal Expansion by TMA	74 ppm/ °C below Tg 200 ppm/ °C above Tg	66 ppm/ °C below Tg 202 ppm/ °C above Tg	103 ppm/ °C below Tg 222 ppm/ °C above Tg	455300005340/ ASTM E831 TMA, 5 °C/min
Tensile Properties:				4535601224470/ ASTM D638
Strength	7,500 psi	7,500 psi	1,500 psi	
Elongation	3-4%	3%	70%	
Modulus	300,000 psi	360,000 psi	43,000 psi	
Lap Shear Strength 0.010" bond line Al to Al	1,500 psi	1,700 psi	2,000 psi	4535601224468/ ASTM D1002
Compressive Properties:				4535601224467/ ASTM D695
Yield Strength	10,300 psi	13,500 psi	31,600 psi	
Compressive Strength	21,500 psi	25,500 psi	31,600 psi	
Modulus	104,000 psi	178,000 psi	316,000 psi	
Thermal Conductivity by Transient Plane Heat Source (TPS)	0.21 W / (m.K)	0.23 W / (m.K)	0.21 W / (m.K)	Thermtest TPS Hot Disk ISO 22007-2 45376013225604
Operating Temperature Range	-40 to 150 °C**	-40 to 150 °C**	-40 to 150 °C**	
Relative Thermal Index (RTI)	90 °C **	90 °C **	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.

INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing. When bonding parts, surfaces should be clean and dry.

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.

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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.

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.