ResinLab®
AN ELLSWORTH ADHESIVES COMPANY

TECHNICAL DATA SHEET

EP1056LCRC Black

Issue date: 1/2/2025

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DESCRIPTION:

ResinLab® EP1056LCRC Black is a two-part urethane modified epoxy adhesive designed to give good adhesion to metals and hard to bond surfaces such as PVC. As of the issue date of this document, this is a REACH compliant version of EP1056LC Black. It is thixotropic to provide good gap filling ability and prevent running and sagging during cure. It has very good resistance to water, acids and bases and most organic solvents.

EP1056LCRC Black was formulated to a 2A:1B by 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 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:*	*Test Method or Source:*
Color	Black Opaque	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	2.65 to 1	
Mix Ratio by volume	2 to 1	
Cure Schedule	48 hrs @ 25 °C 2 hrs @ 65 °C 10 min @ 100 °C	
Viscosity - Part A	525,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	7,100 cP	
Viscosity - Mixed	166,000 cP	
Specific Gravity - Part A	1.31	Calculated
Specific Gravity - Part B	0.99	
Specific Gravity - Mixed	1.20	
Gel Time	60 minutes (100 cc sample)	Visual, Observed cup and stick
Peak Exotherm	33.5 °C for 40 mL sample	455300005593 by Type K thermocouple
Hardness	78 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	51 °C	453560822409 by DSC
Water Absorption	0.08 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	5,050 psi	
Elongation	2.5 %	
Modulus	334,000 psi	

Property:	*Value:*		*Test Method or Source:*
Lap Shear Strength			4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	3,560 psi		
Compressive Properties:			4535601224467/ASTM D695
Yield Strength	9,560 psi		
Ultimate Strength	19,500 psi		
Modulus	256,000 psi		
Thermal Conductivity by Transient Plane Heat Source (TPS)	0.26 W/m.K		Thermtest TPS Hot Disk ISO 22007-2 45376013225604
Electrical Resistivity:			455300006612/ASTM D257 @ 20.6 °C @ 24 %RH
Volume	1.12 x 10^{16} ohm-cm		
Surface	7.34 x 10^{15} ohm/sq		
Dielectric Constant & Dissipation Factor:	ε’	tan δ	455300006513/ASTM D150
@ 100 Hz	3.5	0.008	
@ 100 kHz	3.4	0.01	
Coefficient of Thermal Expansion by TMA:			455300005340/ASTM E831 TMA, 5 °C/min
below Tg	71 ppm/°C		
above Tg	203 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.

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.