# TECHNICAL DATA SHEET

## EP1056LVRC Black

Issue date: 7/14/2022

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

**DESCRIPTION:**

*Resinlab® EP1056LVRC Black* is a two part urethane modified epoxy casting resin designed to give good adhesion to metals and PVC. It has good wetting to most surfaces and is free-flowing to penetrate components and give good self-leveling and air release. It has very good resistance to water, acids and bases and most organic solvents.

*EP1056LVRC Black* was formulated to a 2A:1B mix ratio for use in automatic mixing equipment and dispensers with static mixers. *EP1056LVRC Black* will reach handle cure at room temperature within 8 – 16 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 1 hour at 65 °C to 15 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** | 2.55 to 1 | |
| **Mix Ratio by volume** | 2 to 1 | |
| **Cure Schedule** | 8-16 hrs @ 25 °C Handle cure<br>15 min @ 100 °C<br>1 hr @ 65 °C<br>24-48 hrs @ 25 °C | |
| **Viscosity - Part A** | 29,400 cP | TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723 |
| **Viscosity - Part B** | 400 cP | |
| **Viscosity - Mixed** | 8,900 cP | |
| **Specific Gravity - Part A** | 1.24 | Calculated |
| **Specific Gravity - Part B** | 0.97 | |
| **Specific Gravity - Mixed** | 1.15 | |
| **Pot Life defined as the time it takes for initial mixed viscosity to double** | 34 minutes | TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723 |
| **Gel Time 100cc Sample** | 91 minutes | 455300005339/Gardco Gel Timer |
| **Peak Exotherm** | 35.5 °C after 56 minutes for 40 mL sample | 455300005593 by Type K thermocouple |
| **Hardness** | 81 Shore D | 455300006287/ASTM D2240 |
| **Water Absorption** | 0.11 % | 24 hr immersion 457561824543/ASTM D570 |
| **Tensile Properties:** | | 4535601224470/ASTM D638 |
| **Strength** | 6,250 psi | |
| **Elongation** | 2.6 % | |
| **Modulus** | 340,000 psi | |

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| *Property:* | *Value:* | *Test Method or Source:* |
|---|---|---|
| **Lap Shear Strength** | | 4535601224468/ASTM D1002 |
| **0.010" Bond Line, Al to Al** | 2,700 psi | |
| **Compressive Properties:** | | 4535601224467/ASTM D695 |
| **Yield Strength** | 101,000 psi | |
| **Modulus** | 189,000 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 @ 21.9 °C @ 50 %RH |
| **Volume** | 7.3 x $10^{15}$ ohm-cm | |
| **Surface** | 1.9 x $10^{16}$ ohm/sq | |
| **Dielectric Constant & Dissipation Factor:** | | 455300006513/ASTM D150 |
| **@ 100 Hz** | 3.56, 0.009 | |
| **@ 100 kHz** | 3.38, 0.016 | |
| **Coefficient of Thermal Expansion by TMA:** | | 455300005340/ASTM E831 TMA, 5 °C/min |
| **below Tg** | 72 ppm/°C | |
| **above Tg** | 200 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.

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**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.