# TECHNICAL DATA SHEET

## EP1282 Clear

Revision date: 10/2/2025

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

**DESCRIPTION:**

*Resinlab® EP1282 Clear* is a two part unfilled epoxy encapsulant designed for medium sized castings. It is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034) for UL Standard 94. It qualifies for a horizontal burn rating at 1.5 mm thickness and has an assigned Performance Level Category (PLC) rating of 0 for Comparative Tracking Index (CTI), this corresponds to >600 volts.

*EP1282 Clear* cures at room temperature to a tough and flexible polymer. It has good wetting and adhesion to most surfaces, is free flowing to penetrate voids and gives good air release with a smooth high gloss surface. It has very good resistance to water, acids, bases and most organic solvents. Thermal shock and cycling properties are enhanced by its high elongation giving it the ability to absorb differences in CTE's of substrates and potted components. It is a low stress epoxy proven for SMT.

*EP1282 Clear* will have incomplete mix, or separate in the static mixer, when applied with small shot sizes or when dispensed at low velocity or slow shot speed. Best practice is to dispense a 50 mL cartridge quickly into a syringe, then deliver small shots of the premixed product from the syringe. This will ensure optimal mix and consistent performance shot to shot.

*EP1282 Clear* was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. *EP1282 Clear* will reach full cure at room temperature within 24 – 48 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 1 hour at 65 °C to 20 minutes at 100 °C are typical for small castings (less than 50 grams).

**TYPICAL PROPERTIES:**

All properties given are at 25 °C unless otherwise noted.

| *Property:* | *Value:* | *Test Method or Source:* |
|---|---|---|
| **Color** | Clear | 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** | 24-48 hrs @ 25 °C<br>1 hr @ 65 °C<br>20 min @ 100 °C | |
| **Viscosity - Part A** | 6,000 cP | Rheometer parallel plate 25mm @ 1/s<br>455300006291 |
| **Viscosity - Part B** | 2,000 cP | |
| **Viscosity - Mixed** | 3,000 cP | |
| **Specific Gravity - Part A** | 1.14 | Calculated |
| **Specific Gravity - Part B** | 0.99 | |
| **Specific Gravity - Mixed** | 1.06 | |

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| *Property:* | *Value:* | | *Test Method or Source:* |
|---|---|---|---|
| **Pot Life defined as the time it takes for initial mixed viscosity to double** | 60 minutes | | Rheometer parallel plate 25mm @1/s 455300006291 |
| **Peak Exotherm** | < 30 °C * for 40 mL sample | | 455300005593 by Type K thermocouple |
| **Hardness** | 70 Shore D | | 455300006287/ASTM D2240 |
| **Glass Transition Temperature/Tg** | 25 °C | | 453560822409 by DSC |
| **Water Absorption** | 0.66 % | | 24 hr immersion 457561824543/ASTM D570 |
| **Tensile Properties:** | | | 4535601224470/ASTM D638 |
| **Strength** | 2,400 psi | | |
| **Elongation** | 56 % | | |
| **Modulus** | 89,000 psi | | |
| **Lap Shear Strength 0.010" Bond Line, Al to Al** | 1,500 psi | | 4535601224468/ASTM D1002 |
| **Compressive Properties:** | | | 4535601224467/ASTM D695 |
| **Ultimate Strength** | 25,000 psi | | |
| **Modulus** | 211,000 psi | | |
| **Flame Resistance UL Certified, File #E186034** | Passes with HB Rating @ 1.5 mm | | 45376013225560/UL94HB |
| **Thermal Conductivity by Transient Plane Heat Source (TPS)** | 0.22 W/m.K | | Thermtest TPS Hot Disk ISO 22007-2 45376013225604 |
| **Electrical Resistivity:** | | | 455300006612/ASTM D257 @ 24 °C @ 20 %RH |
| **Volume** | $1.32 \times 10^{14}$ ohm-cm | | |
| **Surface** | $1.42 \times 10^{16}$ ohm/sq | | |
| **Dielectric Constant & Dissipation Factor:** | ε’ | tan δ | 455300006513/ASTM D150 |
| **@ 100 Hz** | 4.1 * | 0.07 * | |
| **@ 100 kHz** | 3.3 * | 0.04 * | |
| **AC Dielectric Strength** | 33.1 kV/mm | | DCV6101609; ASTM D149 Method A, immersed in ASTM D3487 Type II Oil |
| **Percent Solids** | 99.9 % | | 455300005646 |
| **Coefficient of Thermal Expansion by TMA:** | | | 455300005340/ASTM E831 TMA, 5 °C/min |
| **above Tg** | 227 ppm/°C | | |
| **Dielectric Constant & Dissipation Factor: @ 2.4 GHz** | 2.9, 0.04 | | 455300006513/ASTM D150 |
| **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.

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*** 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.

*** Extrapolated data source: EP1282 Black**

**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.

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