TECHNICAL DATA SHEET

EP1282RC CLEAR

Revision date: 10/15/2024

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

DESCRIPTION:

ResinLab® EP1282RC Clear is a two-part unfilled epoxy encapsulant designed for medium sized castings. This is a REACH compliant version of EP1282 Clear that 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.

EP1282RC Clear cures with low exotherm 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 of substrates and potted components. This epoxy is low stress and proven for surface mount technology (SMT).

EP1282RC Clear was formulated to a 1A:1B 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 48-72 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 1.5 hours at 65 °C to 30 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 to Amber	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	48-72 hrs @ 25 °C 90 min @ 65 °C 30 min @ 100 °C	
Viscosity - Part A	4,100 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	800 cP	
Viscosity - Mixed	1,700 cP	
Specific Gravity - Part A	1.14	Calculated
Specific Gravity - Part B	0.98	
Specific Gravity - Mixed	1.06	
Pot Life defined as the time it takes for initial mixed viscosity to double	60 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Gel Time 100cc Sample	3 – 3.5 hours	455300005339/Gardco Gel Timer
Peak Exotherm	27.5 °C for 40 mL sample	455300005593 by Type K thermocouple
Hardness	65 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	26 °C	453560822409 by DSC
Water Absorption	0.40 %	24 hr immersion 457561824543/ASTM D570

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Property:	*Value:*		*Test Method or Source:*
Tensile Properties:			4535601224470/ASTM D638
Strength	1,700 psi		
Elongation	110 %		
Modulus	32,000 psi		
Lap Shear Strength			4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,400 psi		
Compressive Properties:			4535601224467/ASTM D695
Yield Strength	24,000 psi		
Ultimate Strength	24,000 psi		
Modulus	245,000 psi		
Flame Resistance	Passes with HB Rating @ 1.5 & 3.0 mm		45376013225560/UL94HB
UL Certified, File #E186034			
Thermal Conductivity by Transient Plane	0.21 W/m.K		Thermtest TPS Hot Disk ISO 22007-2
Heat Source (TPS)			45376013225604
Electrical Resistivity:			455300006612/ASTM D257
Volume	1.3×10^{14} ohm-cm *		@ 20 °C @ 24 %RH
Surface	1.4×10^{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	30.5 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	216 ppm/°C		
Dielectric Constant & Dissipation Factor:	2.9, 0.04		455300006513/ASTM D150
@ 2.4 GHz			
Operating Temperature Range	-55 °C to 150 °C		TGA method, ASTM E1131-08
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.
*** 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 CLEAR**

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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.

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.