TECHNICAL DATA SHEET

EP1199RC Clear

Issue date: 8/15/2024

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

DESCRIPTION:

ResinLab® EP1199RC Clear is a REACH compliant, two-part unfilled epoxy adhesive designed for rapid bonding of metals, ceramics and most plastics. It will provide good resistance to water, salt spray, inorganic acids and bases and most organic solvents. *EP1199RC Clear* will have improved water and temperature resistance compared to a standard 5-minute epoxy.

EP1199RC Clear was formulated to a 1A:1B by volume mix ratio for use in side by side dispensing cartridges or meter/mix and dispense equipment. *EP1199RC Clear* will reach full cure at room temperature within 24 hours. An elevated cure schedule can be used to achieve final properties quickly. Times and temperatures of 30 minutes at 65 °C to 15 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	Clear	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	1.14 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	24 hrs @ 25 °C 30 min @ 65 °C 15 min @ 100 °C	
Viscosity - Part A	14,700 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	8,100 cP	
Viscosity - Mixed	10,000 cP	
Specific Gravity - Part A	1.16	Calculated
Specific Gravity - Part B	1.02	
Specific Gravity - Mixed	1.09	
Pot Life defined as the time it takes for initial mixed viscosity to double	8 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Gel Time 100cc Sample	8 minutes	455300005339/Gardco Gel Timer
Peak Exotherm	135 °C for 40 mL sample	455300005593 by Type K thermocouple
Hardness	77 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	38 °C	453560822409 by DSC
Water Absorption	0.15 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	4,900 psi	
Elongation	10 %	
Modulus	260,000 psi	

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Property:	*Value:*		*Test Method or Source:*
Lap Shear Strength			4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,550 psi		
Compressive Properties:			4535601224467/ASTM D695
Yield Strength	8,500 psi		
Ultimate Strength	22,100 psi		
Modulus	130,000 psi		
Flame Resistance	Passes with HB Rating @ 6.0 mm		45376013225560/UL94HB
Tested at ResinLab, not UL Certified			
Electrical Resistivity:			455300006612/ASTM D257
Volume	9.0×10^{14} ohm-cm		@ 21 °C @ 53 %RH
Surface	2.2×10^{15} ohm/sq		
Dielectric Constant & Dissipation Factor:	ε'	tan δ	455300006513/ASTM D150
@ 100 Hz	3.2	0.015	
@ 100 kHz	3.0	0.014	
Coefficient of Thermal Expansion by TMA:			455300005340/ASTM E831 TMA, 5 °C/min
below Tg	72 ppm/°C		
above Tg	232 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.

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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. A power mixer is suggested such as a 500-1000 rpm device with a mix paddle sufficient to turn material and disperse any filler. 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. 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 or acetone.

SHELF LIFE AND STORAGE:

6 months DOP at 25 °C in cartridges.
Store cartridges horizontally.
Invert cartridges every two weeks.
12 months at 25 °C in bulk packaging.
Specialty packaging may be less.
This system is prone to settling due to high filler content. Inventory should be rotated on a FIFO (first in, first out) basis.
Bulk containers should be inverted every two to three weeks to reduce the accumulation of the fillers on the bottom of the containers.

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.