



AN ELLSWORTH ADHESIVES COMPANY 

TECHNICAL DATA SHEET EP1218 Clear

1/29/2019

N109 W13300 ELLSWORTH DRIVE GERMANTOWN, WI 53022

262-502-6610 FAX 262-502-4743

DESCRIPTION:

Resinlab EP1218 Clear is a two part unfilled electronic grade epoxy encapsulant designed for medium to large sized castings. It cures completely at room temperature to a tough, flexible polymer. The very low viscosity allows for good wicking and penetration into components and circuitry and also gives good air release. It provides very good resistance to water, acids and bases and most organic solvents. Thermal shock and cycling properties are also enhanced by its high elongation giving it the ability to absorb difference in CTE's of substrates.

EP1218 Clear was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. Cure is normally achieved at elevated temperatures although a room temperature cure schedule can be used if time allows. The recommended cure schedule options are as follows: 30 minutes at 100 °C, 6 hours at 65 °C, 7 hours at 50 °C or 2 days at 25 °C. These can be used to determine optimum processing cure times (90% cure).

TYPICAL PROPERTIES:

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

Property:	Value:	Test Method:
Color	Clear	Visual
Mix Ratio	Part A to Part B	Calculated
By weight	1.12 to 1	
By volume	1 to 1	
Cure Schedule	2 days at 25 °C 7 hours 50 °C 6 hours @ 65 °C 30 minutes @ 100 °C	
Viscosity – Part A	425 cps	453560822626 Brookfield Viscosity
Viscosity – Part B	400 cps	RVT, #2@50 RPM
Viscosity – Mixed	450 cps	
Specific Gravity – Part A	1.08	Calculated
Specific Gravity – Part B	0.98	
Specific Gravity - Mixed	1.04	
Pot Life, defined as the time it takes for initial mixed viscosity to double	1 hour	Rheometer parallel plate 25mm@1/s 453300006291
Work Life	>4 hours/100g mass	453560822627, Observed cup and stick
Gel Time	7 hours 2 minutes	453300005339/Gardco Hot Pot Gel Timer
Gel Time @ 70 °C	25-30 minutes @70 °C/15g mass	453300005390/Sunshine Gel Timer
Glass Transition Temperature/Tg	-1 °C	453560822409 by DSC
Hardness	85 Shore A	453300006287/ASTM D2240
Water Absorption	0.4% after 24 hours	457561824543/ASTM D570 Extrapolated from EP1218 Black
Tensile Properties:		4535601224470/ASTM D638
Strength	400 psi	
Elongation	80%	
Modulus	910 psi	

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Lap Shear Strength 0.010" bond line Al to Al	700 psi	455300005642/ASTM D1002 Extrapolated from EP1218 Black
Dielectric Constant @ 100 Hz	4.2*	455300006265/ASTM D695
Dielectric Strength	420 V/mil*	Estimated value
Coefficient of Thermal Expansion by TMA	92 ppm/ °C below Tg 225 ppm/ °C above Tg	455300005340/ASTM E831 TMA, 5 °C/min Extrapolated from EP1218 Black
Temperature Range	-40 to 121 °C **	

* Asterisk denotes values considered typical to associated resin systems or extrapolated from other test results.

** Temperature Rating is based on average design requirements and is not intended as a guarantee of suitability for all applications operating at that temperature.

*** 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.

INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing. Cartridges should be stored in a vertical position to allow any air to accumulate at the tip. Mixer should be attached keeping the cartridge vertical and any air pocket purged this way. After mixer contains material, mixer tip can be dropped to dispense pre-bleed amount.
2. If used in bulk, 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 surface of casting. If product is used in a side-by-side cartridge, attach a new static mixer with each cartridge, 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. Allow to cure undisturbed until product is fully gelled or tack-free to the touch.
4. Clean up uncured resin with suitable organic solvent such as MEK, acetone or other organic solvent.

SHELF LIFE:

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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