TECHNICAL DATA SHEET

SEC1222

Revision date: 1/23/2024

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

DESCRIPTION:

Resinlab® SEC1222 is a silver filled, two component epoxy adhesive designed to cure completely at room temperature. *SEC1222* provides exceptionally high electrical conductivity starting immediately after mixing that improves as the curing process proceeds. It is a soft 100% solids thixotropic paste and has very high thermal conductivity due to its high silver loading. It gives good environmental protection while having tenacious adhesion to various metals and other common assembly materials. It is recommended to mix by weight but extrusion of equal length beads from syringes is commonly used as a method of measurement as small quantities are commonly used.

SEC1222 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 24 to 72 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 1 hour at 60 °C are typical for most applications. Time to heat substrate must be taken into account. Cooler temperatures will 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	Silver	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	1 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	24-72 hrs @ 25 °C 1 hr @ 60 °C	
Viscosity - Part A	N/A	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	N/A	
Viscosity - Mixed	560,000 cP	
Specific Gravity - Part A	3.88	Calculated
Specific Gravity - Part B	3.93	
Specific Gravity - Mixed	3.91	
Pot Life - Cup and Stick	45 minutes	453560822627/Visual
Hardness	70 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	17 °C	453560822409 by DSC
Water Absorption	0.1 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	1,000 psi	
Elongation	3 – 5 %	
Modulus	50,000 psi	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	850 psi	

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Property:	*Value:*	*Test Method or Source:*
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	1,300 psi	
Ultimate Strength	9,900 psi	
Modulus	65,000 psi	
Thermal Conductivity by LFA	3.9 W/m.K	453560822409/ASTM E1461
Electrical Resistivity:		455300006612/ASTM D257
Volume	0.003 ohm-cm *	
Coefficient of Thermal Expansion by TMA:		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	66 ppm/°C	
above Tg	160 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.
*** 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.

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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.

PMF INSTRUCTIONS:

1. Allow the PMF product to thaw to room temperature (20-25 °C) by placing vertically with the dispense tip up. We do not recommend using additional heat sources to speed up the thawing process. Wipe all excess moisture off of the product prior to use.
2. Once the PMF product is thawed, the product needs to be applied within the specified work life and then discarded.
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 AND STORAGE:

6 months DOP @ 25 °C.
6 months DOP at -40 °C as a one-part premixed and frozen.
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.