TECHNICAL DATA SHEET

SEC1233

Revision date: 11/2/2022

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

DESCRIPTION:

Resinlab® SEC1233 is a silver filled, two component, room temperature curing epoxy adhesive. *SEC1233* has excellent electrical conductivity useful in many electronic applications. It is a soft 100% solids thixotropic paste provided in a 1:1 by volume and by mass ratio.

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. It can be packaged in small side-by-side dispensing cartridges for use with static mixers. This system is also available in a pre-mixed and frozen format.

SEC1233 provides exceptionally high electrical conductivity starting immediately after mixing and improves during the curing process. It also has high thermal conductivity due to its high silver content. It provides environmental protection and has tenacious adhesion to various metals and other common assembly materials.

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	374,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	142,000 cP	
Viscosity - Mixed	250,000 cP (estimated)	
Specific Gravity - Part A	3.88	Calculated
Specific Gravity - Part B	3.83	
Specific Gravity - Mixed	3.86	
Pot Life defined as the time it takes for initial mixed viscosity to double	> 4 hours	Rheometer parallel plate 25mm @1/s 455300006291
Hardness	70 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	10 °C	453560822409 by DSC
Water Absorption	< 0.2 %	24 hr immersion 457561824543/ASTM D570
Tensile Properties:		4535601224470/ASTM D638
Strength	450 psi	
Elongation	20 – 30 %	
Modulus	10,000 psi	
Lap Shear Strength **0.010" Bond Line, Al to Al**	600 psi	4535601224468/ASTM D1002

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Property:	*Value:*	*Test Method or Source:*
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	2,000 psi	
Ultimate Strength	9,000 psi	
Modulus	11,000 psi	
Thermal Conductivity by LFA	4.65 W/m.K	453560822409/ASTM E1461
Coefficient of Thermal Expansion by TMA:		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	63 ppm/°C *	
above Tg	120 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.

Additional Performance Data – Electrical Resistivity
Volume Method: 455300004460/Jandel 4 point probe
Surface Method: 455300004460/Jandel 4 point probe

Cure Schedule	Volume Resistivity	Surface Resistivity
1 hour @ 60 °C	1.6 x 10^{-3} ohm-cm	n/a
24 hours @ 25 °C	1.6 x 10^{-3} ohm-cm *	n/a
96 hours @ 25 °C	9 x 10^{-4} ohm-cm *	n/a

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.

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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:

As two-part side by side or dual syringes: 3 months DOP @ 5 °C (store horizontally).
As a jar kit or Twinpak in a foil bag: 6 months DOP @ 25 °C.
As a one-part pre-mixed and frozen: 6 months DOP @ -40 °C.
Specialty packaging may be less.
Product will tolerate ambient conditions during shipment of up to 7 days.

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.