TECHNICAL DATA SHEET

W022504

Revision date: 4/19/2022

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

DESCRIPTION:

Resinlab® W022504 is a modification to EP1295 halogen free flame retardant epoxy casting resin system. EP1295 is recognized under the Component Recognition Program of Underwriters Laboratories Inc., (File# E186034) for UL Standard 94. EP1295 qualifies for a vertical burn rating of V-0 at 6.1 mm thickness.

It also gives very good resistance to water, salt spray, inorganic acids and bases, and most organic solvents. It cures quickly at room temperature to a tough, semi-rigid polymer. It has good wetting and adhesion to most surfaces and is free flowing to penetrate voids and give good air release. It provides a smooth high gloss tack free surface unlike halogen containing systems.

W022504 was formulated to a 1:1 by volume mix ratio for ease of use in automatic mixing equipment with static mixers. It contains soft, low-abrasion fillers. If used in side-by-side cartridge format, they should be stored in a cool place, rotating stock on a FIFO basis.

W022504 will generally reach handle cure at room temperature within 1 to 4 hours depending upon mass and ambient temperature. Full cure usually achieved within 24 – 48 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 2 hours at 65 °C to 30 minutes at 100 °C are typical for most castings (less than 100 grams).

TYPICAL PROPERTIES:

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

Property:	*Value:*	*Test Method or Source:*
Color	Black	Visual
Mix Ratio	Part A to Part B	Calculated
Mix Ratio by weight	1.12 to 1	
Mix Ratio by volume	1 to 1	
Cure Schedule	2 hrs @ 65 °C 30 min @ 100 °C	
Viscosity - Part A	516,000 cP	TA HR20 Rheometer 25mm parallel plate @ 1/s DCV6100723
Viscosity - Part B	112,000 cP	
Viscosity - Mixed	260,000 cP	
Specific Gravity - Part A	1.51	Calculated
Specific Gravity - Part B	1.34	
Specific Gravity - Mixed	1.42	
Pot Life defined as the time it takes for initial mixed viscosity to double	57 minutes	TA HR20 Rheometer parallel plate 25mm @ 1/s DCV6100723
Hardness	65 Shore D	455300006287/ASTM D2240
Glass Transition Temperature/Tg	1 °C	453560822409 by DSC

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Property:	*Value:*	*Test Method or Source:*
Water Absorption	0.17 %	24 hr immersion 457561824543/ASTM D570
Peak Exotherm	72 °C after 1 minutes for 50 mL sample	455300005593 by Type K thermocouple
Tensile Properties:		4535601224470/ASTM D638
Strength	960 psi	
Elongation	19.5 %	
Modulus	5,600 psi	
Lap Shear Strength		4535601224468/ASTM D1002
0.010" Bond Line, Al to Al	1,600 psi	
Compressive Properties:		4535601224467/ASTM D695
Yield Strength	5,900 psi	
Ultimate Strength	6,300 psi	
Modulus	17,000 psi	
Flame Resistance	Passes with V-0 Rating @ 6.0 mm	45376013225560/UL94V
Tested at ResinLab, not UL Certified		
Thermal Conductivity by Transient Plane Heat Source (TPS)	0.51 W/m.K	Thermtest TPS Hot Disk ISO 22007-2 45376013225604
Electrical Resistivity:		455300006612/ASTM D257 @ 22 °C @ 52 %RH
Volume	5.0 x 10^{12} ohm-cm	
Surface	1.8 x 10^{14} ohm/sq	
Dielectric Constant & Dissipation Factor:		455300006513/ASTM D150
@ 100 Hz	5.6, 0.08	
@ 100 kHz	4.2, 0.05	
Coefficient of Thermal Expansion by TMA:		455300005340/ASTM E831 TMA, 5 °C/min
below Tg	72 ppm/°C	
above Tg	177 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.

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.