

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

DESCRIPTION:

ResinLab® product EP1400 is a two-part mineral filled, flame retardant epoxy syntactic foam. It utilizes glass and polymeric microspheres to reduce cured density and improve machinability resulting in a smooth feathered edge. The addition of glass microspheres allows the product to be resistant to crushing and reduction of cured density when pumped under high pressure in meter mix dispensing equipment. It has been tested under static pressures to 2500 PSI with less than 3% reduction in density.

EP1400 was formulated to a 2:1 volume mix ratio for use in side-by-side cartridges or meter-mix and dispense equipment. It has been tested for rheology and product flow under conditions emulating MMD pressures of 800 – 1200 PSI and has been shown to readily flow at low pressures, with low compressibility, and dispenses with even rheology among parts A and B. This product was formulated to pass FAR 25.853 60 second vertical ignition test as an edgefill on Nomex and aluminum honeycomb panels. It also provides excellent protection against water, humidity, salt spray and other chemicals.

EP1400 will cure to a firm handle strength at room temperature in about 2.5 to 3 hours. Full cure requires 24-48 hours but can usually be machined within 9 to 12 hours. Cure time can be accelerated by the application of heat. 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	Gray	Visual
Mix Ratio	Part A to Part B	
By weight	2.06 to 1	
By volume	2 to 1	
Cure Schedule	Work Life 1.5 to 2 hours/150g sample Handle Cure 2.5 to 3 hours/150g sample Sand Time 9 to 12 hours/150g sample Full Cure and Properties 24 – 48 hours	Visual / may be longer for small masses
Viscosity – Part A	1,200,000 cps @1/s	Rheometer parallel plate 25mm@1/s
Viscosity – Part B	230,000 cps @1/s	R050-49
Viscosity - Mixed	700,000 cps @1/s (estimated)	
Viscosity		Rheometer parallel plate 25mm
Yield Shear Stress Part A	70-110 Pa	R050-49
Yield Shear Stress Part B	100-140 Pa	
Specific Gravity – Part A	0.562	Calculated
Specific Gravity – Part B	0.544	
Specific Gravity - Mixed	0.556	
Glass Transition Temperature/Tg	86 °C	R050-61 by DSC
Heat of Reaction	196 J/g	R050-61 by DSC
Hardness	53 Shore D	R050-17/ASTM D2240

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Peak Exotherm	120 °F / 150 g sample	Handheld laser-guided infrared detector
Flame Resistance	<ul style="list-style-type: none"> ▪ PASSES UL94V-1 ▪ PASSES Aircraft materials fire test 	<ul style="list-style-type: none"> ▪ UL94 vertical burn ▪ FAR 25.853 60 second as edgefill 14 CFR Part 25.853 (a) Amdt 25-116 Appendix F Part I (a)(1)(i) as edgefill
Temperature Range	-40 to 150 °C**	

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

INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing.
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: 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. 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, acetone or other organic solvent.

SHELF LIFE AND STORAGE:

6 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.