

N109 W13300 ELLSWORTH DRIVE GERMANTOWN, WI 53022

262-253-5900 FAX 262-253-5919

DESCRIPTION:

Resinlab® EP750 Black is a food grade two part unfilled epoxy structural adhesive designed for bonding applications. It is comprised of raw materials listed in the Code of Federal Regulations Title 21:175.105 (Adhesives) and 175.300 (Resinous and polymeric coatings)¹. EP750 Black can be used safely in applications where there is direct or indirect food contact. This includes coatings intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting or holding food.

EP750 Black cures completely at room temperature to a tough, semi rigid polymer. It has good wetting and adhesion to most surfaces and has a free flowing viscosity. It has very good resistance to water, acids and bases and most organic solvents.

A harder version of EP750 Black is obtained with a 1A:1B volume mix ratio, while a softer more flexible version of EP750 can be obtained with a 1A:2B volume mix ratio. Both versions can be used in side by side dispensing cartridges and meter/mix and dispense equipment. EP750 Black will reach full cure at room temperature within 24-48 hours. Cure time can be accelerated by the application of heat. Times and temperatures from 1 hour at 65 °C to 15 minutes at 100 °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: 1:1 mix ratio	1:2 mix ratio	Test Method or Source:
Mix Ratio	Part A to Part B	Part A to Part B	Calculated
By weight	1.18 to 1	0.60 to 1	
By volume	1 to 1	1 to 2	
Color	Black	Black	Visual
Cure Schedule	Room temperature 24-72 hours 10 minutes @ 110 °C 15 minutes @100 °C 1 hour @ 65 °C	Room temperature 24-72 hours 10 minutes @ 110 °C 15 minutes @100 °C 1 hour @ 65 °C	
Viscosity – Part A	16,000 cps	16,000 cps	Rheometer parallel plate
Viscosity – Part B	14,000 cps	14,000 cps	25mm@1/s
Viscosity - Mixed	15,000 cps (estimated)	14,500 cps (estimated)	455300006291
Specific Gravity – Part A	1.16	1.16	Calculated
Specific Gravity – Part B	0.98	0.98	
Specific Gravity - Mixed	1.07	1.03	
Pot Life, defined as the time it takes for initial mixed viscosity to double	45 minutes	1 hour	Rheometer parallel plate 25mm@1/s 455300006291
Glass Transition Temperature/Tg	70 °C	24 °C	453560822409 by DSC
Hardness	80 Shore D	65 Shore D	455300006287/ASTM D2240
Water Absorption	0.06% after 24 hours	3.50% after 24 hours	457561824543/ASTM D570
Tensile Properties:			455300006285/ASTM D638
Strength	5,000 psi	1,550 psi	
Elongation	4-10%	75%	
Modulus	350,000 psi	28,000 psi	



TECHNICAL DATA SHEET EP750 Black

AN ELLSWORTH ADHESIVES COMPANY 

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Lap Shear Strength (0.010" bond line)			455300005642/ASTM D1002
Al to Al	2,500 psi	1,550 psi	
Stainless Steel to Stainless Steel	Not tested	1,050 psi	
Acrylic to Acrylic	Not tested	260 psi	
PVC to PVC	Not tested	500 psi	
ABS to ABS	Not tested	300 psi	
Compressive Properties:			455300006265/ASTM D695
Strength	8,500 psi	27,000 psi	
Modulus	350,000 psi	250,000 psi	
Coefficient of Thermal Expansion by TMA	62 ppm/ °C (below Tg)* 150 ppm/ °C (above Tg)*	72 ppm/ °C (below Tg) 214 ppm/ °C (above Tg)	
Dielectric Constant (25 °C/100Hz)	3.5*	3.4	455300006513/ASTM D150
Dielectric Strength	410 V/mil*	410 V/mil*	ASTM D149 Method A, immersed in ASTM D3487 Type II Oil
Volume Resistivity	8.3×10^{14} ohm-cm*	3.4×10^{13} ohm-cm	455300006612/ASTM D257
Temperature Range	-40 – 150 °C**	-40 – 150 °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.
2. Cartridge format: Cartridges should be stored vertically. 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. Ease of dispensing will be affected by the ambient temperature of the material.
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.

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- Clean up uncured resin with suitable organic solvent such as MEK, acetone or other organic solvent.

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.

¹The FDA does not approve products for direct or indirect food contact. EP750Black is comprised solely of materials listed under these regulations and can be “used in accordance with” or “used in compliance with CFR Title 21 175.300”. It is the responsibility of the end user to determine if this conformance is appropriate to the final product’s end uses. The specific requirements of an application for food, drug or potable water are detailed by the FDA, USDA (food plants) or NSF (water).