

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

**DESCRIPTION:**

Resinlab EP9651T1 Black is a nonylphenol free reformulation of EP965T1 Black. Nonylphenol was removed from this product to address global regulatory concerns regarding its role as an endocrine disruptor and its persistence in the environment. Endocrine disruptors have been implicated in neurological diseases, reproductive disorders, thyroid dysfunction, immune and metabolic disorders. It is classified as a Substance of Very High Concern in the EU and production is banned, in 2014 the EPA added nonylphenol to the TRI/Toxic Release Inventory program. While it's not a regulatory requirement at this time Resinlab is revising the chemistry in many of our nonylphenol containing products.

Resinlab™ EP9651T1 Black is a two part unfilled electronic grade epoxy encapsulant designed for medium sized castings. It cures 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 and a smooth high gloss surface. It has very good resistance to water, acids and bases and most organic solvents.

It was formulated to a 1A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. EP9651T1 Black will reach full cure at room temperature within 24 hours. Cure time can be accelerated by the application of heat after product has gelled. Times and temperatures from 1 hour at 65°C to 20 minutes at 100°C are typical for small castings (less than 50 grams).

**TYPICAL PROPERTIES:**

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

<i>Property:</i>	<i>Value:</i>	<i>Test Method or Source:</i>
<b>Color</b>	Black	Visual
<b>Mix Ratio</b>	Part A to Part B	
<b>By weight</b>	1.18 to 1	
<b>By volume</b>	1 to 1	
<b>Cure Schedule</b>	1 hour @ 65 °C or 20 minutes @ 100°C 24 hours at room temperature	
<b>Viscosity – Part A</b>	214,500 cps @1/s	Rheometer parallel plate 25mm@1/s
<b>Viscosity – Part B</b>	11,200 cps @1/s	R050-49
<b>Viscosity - Mixed</b>	40,900 cps @1/s	
<b>Specific Gravity – Part A</b>	1.19	Calculated
<b>Specific Gravity – Part B</b>	1.01	
<b>Specific Gravity - Mixed</b>	1.10	
<b>Pot Life</b>	12 minutes 15 seconds	WI R050-59
<b>Gel Time</b>	35 minutes / 10cc sample	Sunshine Gel Timer
<b>Glass Transition Temperature/Tg</b>	52 °C	R050-61 by DSC
<b>Hardness</b>	85 Shore-D	R050-17/ASTM D2240
<b>Water Absorption</b>	0.05% after 24 hours	R050-35/ASTM D570
<b>Peak Exotherm</b>	116.5 °C after 21 minutes for 40mL sample	Thermocouple
<b>Tensile Properties:</b>		R050-36/ASTM D638
<b>Strength</b>	7,500 psi	
<b>Elongation</b>	<5%	
<b>Modulus</b>	340,100 psi	
<b>Lap Shear Strength</b>	1,400 psi	R050-37/ASTM D1002
<b>0.100" bond line Al to Al</b>		
<b>Compressive Properties:</b>		R050-38/ASTM D695
<b>Strength</b>	21,000 psi	
<b>Modulus</b>	197,600 psi	

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INSTRUCTIONS:

1. Bring both components to room temperature prior to mixing. Cartridges should be stored in a vertical position to allow any air to accumulate at the tip. 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.
2. If used in bulk, 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. If the product is used in a side-by-side cartridge, 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. 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:

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.