
W186 N11687 MORSE DRIVE GERMANTOWN, WI 53022
262-502-6610 FAX 262-502-4743

TECHNICAL DATA SHEET

EP 691 CLEAR

TWO PART EPOXY CASTING RESIN

DESCRIPTION:

*Resinlab*TM EP 691 Clear 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 especially formulated to a 2A:1B volume mix ratio for use in side-by-side dispensing cartridges and meter/mix and dispense equipment. EP 691 Clear 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.

Color		Clear
Viscosity	Part A	10,000 cps
	Part B	4000 cps
	Mixed	6,500 cps (est)
Specific Gravity	Part A	1.16
	Part B	1.03
	Mixed	1.12
Pot Life		2 – 3 hours
Mass		100 grams
Tensile Elongation		6 % *
Tensile Strength		7000 psi *
Temperature Range **		-40 to 121°C

Hardness Method	80 Shore -D
Thermal Conductivity W/m° K	0.14 *
Glass Transition Temp (by DSC)	70 °C
Dielectric Constant (25°C, 100Hz)	4.2 *
Dielectric Strength	410 v/mil *
Volume Resistivity	8 x 10 ¹⁴ ohm-cm *
Linear Coefficient of Thermal Expansion (ppm/°C)	60 *

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 mixer contains material, 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 surface of casting. If product is used in a side-by-side cartridge, attach a new static mixer with each cartridge, 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.

SIDE - BY - SIDE CARTRIDGE SUITABILITY RATING

POOR FAIR AVERAGE GOOD EXCELLENT

This rating scale is a general guideline to give the user an expected level of success in a typical bench-top dispensing scenario.

Important process variables to consider are: Cartridge type and size, wall thickness; manual or pneumatic gun type; static mixer design and dimensions; product viscosity spread and ratio; shot size, shot frequency, flow rate; temperature range during use.

This scale also address's product stability in a cartridge. Factors such as filler content and settling rate, storage temperature and cartridge orientation are important factors which affect this.

It is important for the user to define the optimum static mix for each dispensing process, a change in any of the above variables can affect the mix quality. Dispensing the product on a flat surface using the dispensing pattern can help show the quality of mixing in terms of thoroughness and lead/lag consistency.

MIX RATIO:

100A:45B by weight or 2A:1B by volume.

* 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.

Notes:

Values presented above are considered to be typical properties, not to be used for specification purposes. Contact our Technical Department for further information.

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 phenomena. Heating the individual component to 120 to 140F while stirring can usually restore products to original state. Storage at 25 +/- 10°C is optimum for most products.

SHELF LIFE: 12 months at 25°C. Specialty packaging may be less.

Rev Date: 10/11/2004