

Product  
Bulletin

# E50-501

## High Temperature, Long Pot Life, 100% Solids Epoxy

### GENERAL DESCRIPTION

E50-501 is a 100% solids, heat curing, two-component epoxy with high temperature resistance. It can be exposed to 200°C continuous or 300-400°C for many hours.

E50-501 displays superb resistance to many kinds of chemicals and solvents making it suitable for bonding metals, glass, fiber-optics, ceramics and most plastics.

E50-501 has a long pot-life, low dermatetic response, and good handling characteristics. It can be wicked, superbly, into fiber optic bundles.

The epoxy is self-extinguishing with respect to flammability (FED-STD 406, Method 2021).

Moisture resistance (MIL-1-16923-D), after 7 days at 96% RH, the epoxy exhibits a 0.03% mass increase.

### APPLICATION

E50-501 changes color upon curing, from amber to red, so one can cure by color. It can be applied by dipping, brush, pouring, or mechanical dispensing techniques.

E50-501 is ideally used only in thin or thick film applications. Where extra thick sections are needed, it is suggested to gel the system at 25°C followed by a post cure at high temperatures.

It is not recommended to exceed 25 grams of mixed quantity of the system.

### SPECIFICATIONS

#### HANDLING CHARACTERISTICS

Mix Ratio, Catalyst to Resin, by Weight: 10:1

Workable Pot Life, 100 g @ 25°C: 4 hrs.

Mixed Viscosity @ 25°C cps: 2,000

Mixed Color: red

Shelf Life: 1 yr @ room temp.

#### OPTICAL CHARACTERISTICS

Index of Refraction: 1.5600

Spectral Transmission:

> 50% @ 5,000 angstroms

> 95% @ 7,000 - 9,000 angstroms

#### PHYSICAL CHARACTERISTICS

Flexural Strength, psi: 10,600

Compressive Strength, psi: 20,200

Hardness, Shore D: 87

Specific Gravity, 25°C / 25°C: 1.18

Lap Shear Strength (@ 25°C, Al to Al): 1,500 psi

Coefficient of Expansion (CTE), in / in / °C,

Below Tg: 54 x 10<sup>-6</sup>

Above Tg: 160 x 10<sup>-6</sup>

Impact Resistance, ft / lb · in: 0.38

Operating Temperature Range, °C: -50 to +200

Tg (150° / 1 hr): 124°C

Thermal Conductivity, btu / hr / ft<sup>2</sup> / °F / in: 0.34

Thermal Shock Resistance: passed,

10 cycles, -50 to +130°C

### CURE SCHEDULE

155°C – 1 min.

125°C – 2 min.

100°C – 5 min.

80°C – 15 min.

60°C – 1.5 hrs.