



# 50-3100

## HIGH THERMAL K HEAT TRANSFER EPOXY RESIN

### DESCRIPTION:

50-3100 is designed for the fastest and most continuous high heat transfer. 50-3100 measures several times faster heat dissipation than other commercially available types. The most important breakthrough is the handling of 50-3100. This system can be easily mixed and poured to form a dimensionally stable heat transfer package.

Mil Spec Thermal Shock Requirements are exceeded by 50-3100 while maintaining low thermal expansion.

Outstanding features are the excellent thermal shock and high temperature resistance (class H with catalyst 105) properties.

50-3100 is ideal for large castings because of its low shrinkage and low exotherm during cure.

Typical applications include encapsulation of power supplies, transformers, coils, insulators, protective covering for chips, temperature probes, etc...

### CHOICE OF CURING AGENTS:

CATALYST 190: Room temperature curing with a 45 minute pot life. Tough and rigid at all temperatures up to 150°C.

CATALYST 150: Room temperature curing with a 30 minute pot life. Low viscosity and easy handling properties. Excellent adhesion. Has a service temperature up to 150°C (300°F). Will soften slightly above 121°C (250°F).

CATALYST 105: Heat curing with a pot life of 4 hours. Low viscosity with excellent handling properties. Excellent thermal and mechanical shock. Best catalyst for electrical and physical properties at temperatures above 121°C (250°F). Can be used up to 205°C (400°F).

### TYPICAL SPECIFICATIONS:

Viscosity @ 25°C, Resin	180,000	
Viscosity @ 25°C (Cat.190) cps	32,000	
Viscosity @ 25°C (Cat.150) cps	6,000	
Viscosity @ 65°C (Cat.105) cps	45,000	**over

**1-800-EPOXIES (376-9437) • 401-946-5564 • Fax: 401-946-5526**

21 Starline Way • Cranston, RI 02921 USA  
www.epoxies.com • service@epoxies.com



# Epoxy, Urethane & Silicone Formulations

Specific Gravity, 25°C/25°C, Resin	2.0
Hardness, Shore D	90
Linear Shrinkage, in./in.	.003
Tensile Strength, psi	8,800
Compressive Strength, psi	15,000
Operating Temp. Range, °C	-60 to +205
Coefficient of Expansion, °C	$30 \times 10^{-6}$
Dielectric Strength, Volts/Mil	485
Dielectric Constant at 60 HZ	6.4
Volume Resistivity, OHM-CM	$1.5 \times 10^{15}$
Dissipation Factor, 60 HZ	.015
Heat Distortion, °C	120
Thermal Conductivity, BTU/hr/ft <sup>2</sup> /°F/in.	15

## **INSTRUCTIONS FOR USE:**

### **A. WITH CATALYST 190**

1. By weight, thoroughly mix 5 parts Catalyst 190 to 100 parts 50-3100 resin.
2. By volume, thoroughly mix 10 parts Catalyst 190 to 100 parts 50-3100 resin.
3. Degas and pour, cure at room temperature for 24 hours @ 25°C ambient or for 2 hours at 66°C (155°F).

### **B. WITH CATALYST 105**

1. By weight, thoroughly mix 6 parts Catalyst 105 to 100 parts 50-3100 resin.
2. By volume, thoroughly mix 9 parts Catalyst 105 to 100 parts 50-3100 resin.
3. Degas and pour, cure with one of the following schedules:

- a. 74°C (165°F) 16 hours
- b. 100°C (212°F) 2 hours
- c. 125°C (275°F) 1 hour

### **C. WITH CATALYST 150**

1. By weight, thoroughly mix 12 parts Catalyst 150 to 100 parts 50-3100 resin.
2. By volume, mix 24 parts Catalyst 150 to 100 parts 50-3100 resin.
3. Degas and pour, cure for 24 hours at room temperature or for 2 hours at 66°C (155°F).

### **IMPORTANT:**

The information in this brochure is based on data obtained by our own research and is considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data, the results to be obtained from the use thereof, or than any such use will not infringe any patent. This information is furnished upon the condition that the person receiving it shall make his own tests to determine the suitability thereof for his particular purpose.

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