



50-3182 THERMALLY CONDUCTIVE EPOXY RESIN

DESCRIPTION:

50-3182 is a highly filled epoxy system with excellent physical, electrical, and thermal properties. 50-3182 offers very high thermal conductivity, excellent electrical insulation, and low thermal expansion. This unique combination of properties makes this system ideal for applications where electrical insulation and mechanical protection must be maintained while transferring heat.

APPLICATIONS:

50-3182 is ideal for high voltage applications such as power supplies, transformers, high voltage insulators, bushings, 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 140: 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 @ 65°C (Cat.105) cps	3,000
Viscosity @ 25°C (Cat.190) cps	90,000
Viscosity @ 25°C (Cat.140) cps	15,000
Specific Gravity, 25°C/25°C	2.3
Hardness, Shore D	95
Shrinkage, cm/cm	.001
Elastic Modulus Compressive, psi	1.5 x 10 ⁶
Tensile Strength, psi	8,500
Compressive Strength, psi	17,000

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Epoxy, Urethane & Silicone Formulations

Flexural Strength, psi	13,500
Flexural Modulus, psi	2.5×10^8
Izod Impact (ft. lbs./in)	.35
Water Absorption, 7 Days	.11
Machinability	Poor
Operating Temp. Range, °C	-55 to +205
Coefficient of Expansion, °C	30×10^{-6}
Heat Distortion, °C	175
Dielectric Strength, Volts/Mil	560
Dielectric Constant at 60 HZ	6.4
Volume Resistivity, OHM-CM	4.9×10^{16}
Dissipation Factor, 60 HZ	.018
Thermal Conductivity, BTU/hr/ft ² /°F/in.	11.5

INSTRUCTIONS FOR USE:

Since 50-3182 resin may settle upon storage, remix prior to each use.

CATALYST 190:

1. By weight, thoroughly mix 3-4 parts Catalyst 190 to 100 parts 50-3182 resin.
2. Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
3. Pour and allow to cure overnight or with heat for 2 hours at 66°C (155°F).

CATALYST 140:

1. By weight, thoroughly mix 6.5 to 7.5 parts Catalyst 140 to 100 parts 50-3182 resin.
2. Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
3. Pour and allow to cure overnight or with heat for 2 hours at 66°C (155°F).

CATALYST 105:

1. By weight, thoroughly mix 4-5 parts Catalyst 105 to 100 parts 50-3182 resin.
2. Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
3. Pour and cure with one of the following schedules:
 - a. 74°C (165°F) for 16 hours
 - b. 100°C (212°F) for 2 hours
 - c. 125°C (257°F) for 1 hour

For optimum high temperature performance, post cure for 4-5 hours at 150°C (300°F).

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IMPORTANT:

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