



50-3185 THERMALLY CONDUCTIVE POTTING & ENCAPSULATING RESIN

DESCRIPTION:

50-3185 is a filled epoxy encapsulant possessing excellent physical, electrical, and thermal properties. 50-3185 is an excellent choice where low thermal expansion, outstanding electrical insulation and/or high thermal conductivity is required. Three catalysts are available to choose from.

50-3185 when cured with Catalyst #190 and Catalyst #105 meets NASA's outgassing requirements.

FEATURES:

- * Low Thermal Expansion
- * High Thermal Conductivity
- * Excellent Electrical Insulator
- * Protects & Conceals Circuitry

APPLICATIONS:

50-3185 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:

	Catalyst #190	Catalyst #140	Catalyst #105
Viscosity resin, 25°C, cps	47,740	----	----
Mixed viscosity, 25°C, cps	16,800	3,440	40,853
Hardness, shore D	96	94	96
Specific gravity, @ 25°C	2.31	2.25	2.32
Flexural strength, psi	15,000	15,000	18,000
Compressive Strength, psi	24,000	16,000	27,100
Linear shrinkage, in/in	.004	.004	.005
Water absorption, % 24 hr.	.01	.05	.03
Fungus resistance	Non-Nutrient	Non-Nutrient	Non-Nutrient
Coefficient of thermal expansion, 1°C	29.7x10 ⁻⁶	31.9x10 ⁻⁶	27.4x10 ⁻⁶
Glass transition temperature, °C	77	47	111
Thermal conductivity, btu/hr.ft ² /°F/in	9.4	7.8	9.1
Thermal shock resistance cycles	>10	>10	>10
Outgassing % TML	0.44	----	0.44
% CVCM	0.01	----	0.01
Dielectric strength, volts/Mil	390	380	370
Dielectric constant, 1MHz	5.21	5.41	5.41
Dissipation Factor, 1MHz	0.036	0.059	0.047
Volume Resistivity, ohm-cm @ 25°C	4.9x10 ¹⁶	4.9x10 ¹⁶	4.9x10 ¹⁶

INSTRUCTIONS FOR USE:

Since 50-3185 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 50-3185 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 50-3185 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 50-3185 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).

EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

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.

06/03