EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

50-3155
THERMALLY CONDUCTIVE EPOXY RESIN

DESCRIPTION:
50-3155 is a highly filled epoxy system with excellent physical, electrical, and thermal properties. 50-3155 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:
50-3155 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. It has a service temperature of up to 150°C (300°F). Will soften slightly above 121°C (250°F).

CATALYST 30: Heat curing with a pot life of 4 hours. Low viscosity with excellent handling properties. Excellent thermal and mechanical shock.

TYPICAL PROPERTIES:

Viscosity, 25°C, cps	
Cat.30	6,000
Cat.190	15,000
Cat.140	5,000
Mix Ratio, By Weight, (Resin:Catalyst)	
Cat.30	100:9
Cat.190	100:5
Cat.140	100:9.5
Color	
Hardness, Shore D	90
Operating Temperature Range, °C	-55 to +205
Specific Gravity, 25°C	1.93
Shrinkage, in/in	0.003
Elastic Modulus Compressive, psi	1.5×10^6
Tensile Strength, psi	8,900
Compressive Strength, psi	16,000
Flexural Strength, psi	13,500
Flexural Modulus, psi	2.5×10^8
Izod Impact (ft.-lbs./in)	0.35
Water Absorption, 7 Days	0.11
Machinability	Poor

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Coefficient of Thermal Expansion, /°C	30×10^{-6}
Heat Distortion, °C	175
Thermal Conductivity, W/m-K	0.67
Dielectric Strength, V/mil	560
Dielectric Constant at 60 Hz	6.4
Volume Resistivity, ohm-cm	4.9×10^{16}
Dissipation Factor, 60 Hz	0.018

INSTRUCTIONS FOR USE:

Since 50-3155 resin may settle upon storage, remix prior to each use.

CATALYST 190:

1. By weight, thoroughly mix 5 parts Catalyst 190 to 100 parts 50-3155 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 9-10 parts Catalyst 140 to 100 parts 50-3155 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 30:

(Recommended for higher operating temperature and physical property applications)
By weight, thoroughly mix 9 parts Catalyst 30 to 100 parts 50-3155 resin.
Pour and cure according to one of the following recommended cure schedules:

a) 85°C (185°F)	3-4 hours
b) 100°C (212°F)	2-3 hours

For optimum performance, an additional 2 hours at 365°F (185°C) is recommended.

STORAGE, HANDLING & SAFETY:

Store both components at 25 °C in original containers. The expected shelf life is 12 months in original containers.

Please read the Safety Data Sheet before using this or any other chemical.

AVAILABILITY:

50-3155 is available in quart and gallon containers.

IMPORTANT:

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