EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

50-3182NC
THERMALLY CONDUCTIVE EPOXY RESIN

DESCRIPTION:
50-3182NC is a highly filled epoxy system with excellent physical, electrical, and thermal properties. 50-3182NC 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:
50-3182NC is ideal for high voltage applications such as power supplies, transformers, high voltage insulators, and bushings.

TYPICAL SPECIFICATIONS:

Viscosity, cps, 25 °C	
50-3182RNC Resin	85,000
Mixed with Cat.30TB	45,000
Mixed with Cat.45CL	10,000
Mixed with Cat.190CL	90,000
Mixed with Cat.140CL	15,000
Colors	Black, Blue, White
Hardness, Shore D	95
Operating Temperature Range, °C	-55 to +205
Specific Gravity, 25°C	
50-3182NC Resin	2.3
Compressive Strength, psi	17,000
Elastic Modulus Compressive, psi	1.5×10^{6}
Flexural Strength, psi	13,500
Flexural Modulus, psi	2.5×10^{8}
Izod Impact (ft.-lbs./in)	0.35
Shrinkage, cm/cm	0.001
Tensile Strength, psi	8,500
Dielectric Strength, V/mil	560
Dielectric Constant at 60 Hz	6.4
Dissipation Factor, 60 Hz	0.018
Volume Resistivity, ohm-cm	4.9×10^{16}
Coefficient of Expansion, °C	30×10^{-6}
Heat Distortion, °C	175
Thermal Conductivity, W/m·K	1.66

epoxies.com
21 Starline Way
Cranston, RI 02921 USA
t 401.946.5564
f 401.946.5526

Water Absorption, 7 Days	0.11
Machinability	Poor

INSTRUCTIONS FOR USE:

Note: Mix 50-3182RNC resin thoroughly to re-disperse fillers. Some settling during transit or storage is common. Warming resin to 40C prior to mixing will improve air release and lower viscosity.

A. Catalyst 190: 45-minute pot life. Tough and rigid at all temperatures up to 150 °C.
   1. By weight, thoroughly mix 100 parts 50-3182RNC resin to 3-4 parts Catalyst 190.
   2. Degas, pour, and cure according to one of the following recommended cure schedules:
      a) 25 °C 24 Hours
      b) 65 °C 2 Hours

B. Catalyst 30: Excellent for thermal and mechanical shock. Recommended for higher operating temperature applications.
   1. By weight, thoroughly mix 100 parts 50-3182RNC resin to 6.5 parts Catalyst 30.
   2. Degas, pour, and cure according to one of the following recommended cure schedules:
      a) 85 C 3-4 Hours
      b) 100 C 2-3 Hours

   For optimum performance, an additional 2 hours at 185 °C is recommended.

C. Catalyst 140: 30-minute pot life. Low viscosity with excellent adhesion. Service temperature of up to 150 °C. Will soften slightly above 121 °C.
   1. By weight, thoroughly mix 100 parts 50-3182RNC resin to 6.5 to 7.5 parts Catalyst 140.
   2. Degas, pour, and cure according to one of the following recommended cure schedules:
      a) 25 °C 24 Hours
      b) 65 °C 2 Hours

D. Catalyst 45: 45-minute pot life. Lowest viscosity with excellent adhesion.
   1. By weight, thoroughly mix 100 parts 50-3182RNC resin to 7.5 parts Catalyst 45
   2. Degas, pour, and cure according to one of the following recommended cure schedules
      a) 25°C 8 Hours
      b) 65°C 45 Minutes
      c) 120°C 20 Minutes

   For optimum performance, an additional 4 hours at 95°C is recommended.

epoxies.com
21 Starline Way
Cranston, RI 02921 USA
t 401.946.5564
f 401.946.5526

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:

This product is available in quarts and gallons and as black (50-3182RNCBK), blue (50-3182RNCBL), or white (50-3182RNCWH).

IMPORTANT:

EPOXIES, ETC. MAKES NO EXPRESS OR IMPLIED WARRANTIES OR MERCHANTABILITY, FITNESS OR OTHERWISE WITH RESPECT TO ITS PRODUCTS. The information in this brochure is based on data obtained by our own research and is considered reliable. However, no warranty is expressed or implied regarding the accuracy of these data, the results to be obtained from the use thereof, or that any such use will not infringe any patent. The properties given are typical values and are not intended for use in preparing specifications. 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.

06/25

epoxies.com
21 Starline Way
Cranston, RI 02921 USA
t 401.946.5564
f 401.946.5526