EPOXIES
INNOVATIVE BONDING SOLUTIONS ETC.

TECHNICAL BULLETIN

20-3301
Epoxy Potting Compound
Thermal Shock and Cycling Resistant

DESCRIPTION:

20-3301 is a two component epoxy resin system that provides a long working time and easy to use 1:2 mix ratio. Its low viscosity is ideal for many potting, sealing, encapsulating, and casting applications. 20-3301 is an electronic grade system designed to protect devices with outstanding thermal shock, vibration absorption, and thermal cycling properties. This epoxy system passes the Navy Hex Bar Test, MIL-I-16923C, consisting of 10 cycles from -55 to +155°C.

20-3301 is superior to most room temperature curing epoxies in terms of chemical resistance, wide service temperature range, electrical insulation, and overall physical properties. It is typically cured at 80°C for 1-2 hours; however a post cure of 150°C for 3 hours will enhance performance properties.

Applications for 20-3301 include electronic potting and encapsulating, casting, coating, and electrical varnishes. This epoxy system is a good choice for high temperature applications that require a material that is not rigid and brittle.

Features:

- Toughness over a wide temperature range
- Thermal shock resistance
- Long working time
- Chemical resistance
- RoHS and REACH compliant
- DOT Non-Hazardous
- Unfilled with easy to use mix ratio

TYPICAL SPECIFICATIONS:

Color	Transparent amber
Viscosity @ 25°C cps, Resin	12,000
Viscosity @ 25°C, cps, Curing Agent	2,000
Viscosity @ 25°C, cps, Mixed	5,800
Specific Gravity, 25°C, Resin	1.10
Specific Gravity, 25°C, Curing Agent	1.00
Working Time, 25°C, 200 grams, hours	4-6
Hardness, Shore D	60
Elongation, %, 25°C	100
Thermal Shock Resistance, 10 cycles Navy Hex Bar, MIL-I-16923C	-55 to +155°C, Passes

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Water Absorption, % 7 days, 25°C	<1
Tensile Strength, psi	1,800
Operating Temp. Range,°C	-55 to +155°C
Dielectric Strength, V/mil	>440
Dielectric Constant, 25°C, 10^6 Hz	2.9
Volume Resistivity, ohm-cm, 25°C	1.5 x 10^{15}
Dissipation Factor, 25°C, 10^6 Hz	.010
Thermal Conductivity, W/m- °K	0.4
Coefficient of Expansion, in/in x 10^{-6}/°C	70-80

INSTRUCTIONS FOR USE:

1. By weight, thoroughly mix 100 parts Epoxy Resin (20-3301R) to 200 parts Curing Agent (20-3301C).
2. For a completely air free casting degas mixture.
3. Cure according one of the following cure schedules:
   A. 80°C for 1-2 hours
   B. 80°C for 1-2 hours, plus 150°C for 3 hours
   (Post cure enhances performance properties)

SAFETY, STORAGE, AND HANDLING:

Please refer to the Safety Data Sheet (SDS) for the most current safety and handling information.

The shelf life is 12 months in the original sealed container when stored between 50-77°F. Store away from excessive heat and humidity.

Availability:

20-3301 is available in FreezeBond™ premixed and frozen 5cc, 10cc, 30cc, and 50cc syringes. Also available in bulk packaging; quarts, gallons, 5 gallon pails, and 55 gallon drums.

IMPORTANT:

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