

# 20-3035

## LOW DENSITY EPOXY POTTING COMPOUND

### DESCRIPTION:

20-3035 is a low density, two component epoxy potting and encapsulating system. The 20-3035 is less than half the weight of most commercially available potting compounds.

20-3035 exhibits very low shrinkage during the cure cycle and also has a low coefficient of thermal expansion. This unique epoxy system is an ideal material for the potting of electronic assemblies where a low dielectric constant and low weight are required.

This epoxy syntactic foam system utilizes an advanced micro balloon technology filler. The 20-3035 provides high strength and stiffness, thermal and environmental stability, creep resistance, and water resistance.

In addition to the standard bulk packaging, 20-3035 can be supplied in the ready-to-use FreezeBond® premixed and frozen synges for elimination of waste and consistent quality.

### FEATURES:

- Low Dielectric Constant
- Low Coefficient of Thermal Expansion
- Low Shrinkage
- Low Density
- Excellent Moisture Resistance

### TYPICAL SPECIFICATIONS:

	Resin	Cat.190	Cat.30	Cat.140
Viscosity resin, 25°C, cps	45,000	-----	-----	-----
Mixed viscosity, 25°C, cps		25,000	15,000	5,000
Specific gravity, @ 25°C		.82	.83	.84
Pot life, 100 gram mass, @ 25°C		45 Min.	4 Hrs.	30 Min.
Hardness, Shore D		80D	82D	78D
Flexural strength, psi		7,000	6,800	5,000
Compressive strength, psi		12,000	12,000	10,000
Tensile strength, psi		3,000	4,800	4,300
Linear shrinkage, in/in		.001	.002	.001
Water absorption, % (24 hr.)		.13	.05	.40
Coefficient of thermal expansion, °C		43x10 <sup>-6</sup>	40x10 <sup>-6</sup>	43x10 <sup>-6</sup>
Thermal conductivity, W/m- °K		0.19	0.19	0.19
Operating temperature, °C		-40 to +130	-55 to +155	-65 to +105
Outgassing				
% TMLV		.46	.49	.74
% CVCM		.06	.06	.09
Dielectric strength, V/mil		375	375	375
Dielectric constant, 1 MHz		2.70	2.73	2.9

**TYPICAL SPECIFICATIONS (continued):**

	<b>Cat.190</b>	<b>Cat.30</b>	<b>Cat.140</b>
Dissipation factor, 1 MHz	.05	.05	.05
Volume resistivity, ohm-cm @ 25°C	>10 <sup>13</sup>	>10 <sup>13</sup>	>10 <sup>13</sup>
Mix ratio by weight (Resin: Catalyst)	100:11	100:21	100:23

**MIXING INSTRUCTIONS:**

Since some separation of fillers is common during shipping and storage we recommend that 20-3035 be mixed prior to use.

**ROOM TEMPERATURE CURING CATALYST 190:**

- 1) By weight thoroughly mix 11 parts Catalyst 190 to 100 parts 20-3035 Resin.
- 2) Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
- 3) Pour and cure according to one of the following cure schedules:
  - a) 25°C                      16-24 Hours
  - b) 45°C                      4-6 Hours
  - c) 65°C                      1-2 Hours

**ROOM TEMPERATURE CURING CATALYST 140:**

- 1) By weight thoroughly mix 23 parts Catalyst 140 to 100 parts 20-3035 Resin.
- 2) Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
- 3) Pour and cure according to one of the following cure schedules:
  - a) 25°C                      16-24 Hours
  - b) 45°C                      4-6 Hours
  - c) 65°C                      1-2 Hours

**HEAT CURING CATALYST 30** (Recommended for higher operating temperature and physical property applications):

- 1) By weight thoroughly mix 21 parts Catalyst 30 to 100 parts 20-3035 Resin.
- 2) Slight warming (40°C) of the resin prior to mixing will improve pourability and air release.
- 3) 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 @ 365°F (185°C) is recommended.

**IMPORTANT:**

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