



Scotchcast™

Electrical Resin 5133

One-Part, Rigid Filled, Epoxy Powder Resin

- Excellent thin film coating properties
- Excellent for electrostatic coating techniques

3M™ Scotchcast™ Electrical Resin 5133 is a blue pigmented, one part rapid heat-curing product. The product is ideal for electrostatic coating techniques due to the ease with which it accepts a charge. This feature permits the coating of cold as well as heated parts. Resin 5133 can also be applied by various other coating methods such as fluid bed, spray, vibrating bed and cascade.

Resin 5133 is manufactured by a fusion blend process, insuring that each individual particle of powder contains all the components necessary to effect a complete cure and attain stated performance properties.

Applications for resin 5133 include coating capacitor cans, transformer covers, stators, rotors, coils, resistors and electronic hardware such as brackets, boards and frames.

Scotchcast™ Electrical Resin 5133 – Typical Properties

Property	Value
Color	Light Blue
Specific Gravity (cured)	1.45
Dielectric Strength ⁴ (0.10" {.25mm} thickness)	500 vpm (19.7 Kv/mm)
Thermal Shock 10 cycles 75°C to 155°C	
10-15 mil coating on 1/8" steel panel	Passes
Impact Resistance ¹ Gardner 5/8" Radius Impact: Tester	120 inch-lbs
Cut-Through Resistance ¹ - 1 lb wt: 18 AWG wire	160°C (320°F)
Abrasion Resistance ² - Removed from 12-15 mil coating	.55 grams
Edge Coverage ¹ 12-15 mil coating on flat	15-25%
Adhesion to steel ¹	3000 psi, 210 kg/cm ²
Thermal Conductivity ³	4 x 10 ⁴ , (cal/sec/cm ² /°C/cm)
Dissipation Factor @ 23°C and 100 Hz ⁵	2.5%
Dielectric Constant @ 23°C and 100 Hz ⁵	6.4
Volume Resistivity @ 23°C ohm/cm ⁶	5 x 10 ¹⁴

*Not recommended for specification purposes. Product specifications will be provided upon request.

Test Methods

¹ 3M Method - Available upon request

² Tabor Abrader, 1000 gm/wheel CS-10 wheel, 5,000 cycles

³ MIL-1-16923E

⁴ ASTM D-149

⁵ ASTM D-150

⁶ ASTM D-257

Usage Information

Method of Application

The rapid cure of Scotchcast™ Electrical Resin 5133 permits the use of highspeed production methods. The powder can be readily applied by spraying techniques as well as through the use of fluid bed dipping of preheated parts. Automated and manual types of application equipment are both available. Equipment manufacturers' names can be suggested upon request.

Curing

The cure of resin 5133 to a thermoset condition is a time-temperature relationship. The retained heat in application units having high heat capacity is sufficient in many cases to effect a cure of the resin without the need for post-curing facilities. For example, if an application surface can retain a temperature of 205°C (400°F) for 30 seconds after coating, it will be fully cured. Small articles, or those with a large surface-to mass ratio, lose heat rapidly and may require a higher preheat temperature and/or additional oven-curing.

The following indicates the period of time the resin must be held at a given temperature in order to reach a fully cured state.

Cure Temperature	Time
149°C (300°F)	30 minutes
177°C (350°F)	10 minutes
204°C (400°F)	30 seconds
232°C (450°F)	20 seconds

Time does not include that required to reach the cure temperature. The user must determine the time required for the coated substrate to reach listed temperatures.

Ordering Information

For ordering technical or product information, or a copy of the Material Safety Data Sheet, call:

Phone: 800/722-6721 or 512/984-1038

Fax: 800/828-9329 or 512/984-2210

Important Notice

All statements, technical information, and recommendations related to Seller's products are based on information believed to be reliable, but the accuracy or completeness thereof is not guaranteed. Before utilizing the product, the user should determine the suitability of the product for its intended use. The user assumes all risks and liability whatsoever in connection with such use.

Any statements or recommendations of the Seller which are not contained in the Seller's current publications shall have no force or effect unless contained in an agreement signed by an authorized officer of Seller. The statements contained herein are made in lieu

Preheat Temperature Range

Prior to applying resin 5133, the part must be preheated to a temperature ranging from 149°C (300°F) to 246°C (475°F). The optimum preheat temperature depends upon the size and configuration of the object to be coated, as well as the method of application. The ideal coating temperature will vary for each application and is best determined by experimentation.

Handling and Safety Precautions

Read all Health Hazard, Precautionary, and First Aid statements found in the Material Safety Data Sheet and/or product label of chemicals prior to handling or use.

Storage

Laboratory evaluation indicates that the usable shelf life of the product is twenty four (24) months from the date of manufacture when stored at temperatures not exceeding 16°C (60°F), providing the material is stored in its original container. Care should be taken when removing the resin from the original container to prevent inclusion of foreign material. After the resin removal, the bag should be retied immediately. This will help to avoid agglomeration caused by excess moisture. For best results, store in a cool, dry place.

3M

Corrosion Protection Department

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40% Pre-consumer waste paper
10% Post-consumer waste paper

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