



Scotchcast™

Electrical Resin 5388

One-Part, Epoxy Powder Resin

- Specially formulated for use in electrostatic fluid bed process
- Superior cold flow resistance
- UL 1446 Electrical Insulation Systems (EIS) approval at class 120(E), 130(B), 155(F), and 180(H).
- Excellent heat, chemical and moisture resistance
- Superior cut-through resistance

3M™ Scotchcast™ Electrical Resin 5388 is a one-part, blue pigmented, rapid heat curing powder resin, designed to provide a continuous, tough moisture and chemical resistant dielectric coating to a variety of substrates.

Resin 5388 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.

Resin 5388 is applied to a cold object via the electrostatic fluid bed process. The negatively charged resin particles are attracted to the grounded object to be coated. Coating thicknesses up to 25 mils may be obtained. Because of its superior charging capabilities resin 5388 exhibits excellent slot penetration on motor stators and armatures. Uses for electrical resin 5388 include moisture-proofing and insulating armatures, stators, buss bars and toroid cores.

Scotchcast™ Electrical Resin 5388 – Typical Properties

Property	Value
Color	Blue
Specific Gravity ¹ (cured)	1.57
Dielectric Strength ² 12 to 15 mil coating	1100 v/mil
Impact Resistance ³ 12-15 mil coating 1/8" sandblasted steel panel Gardner 5/8" Radius Impact Tester	100 inch-lbs
Cut-Through Resistance ³ - 1 lb wt: 18 AWG wire	340°C (644°F)
Edge Coverage ³ - Typical edge coverage attainable on a variety of coated motor iron parts.	35%
Gel time ³ @ 193°C hot plate	25-35 seconds

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

Test Methods

¹ ASTM D-792

² ASTM D-149

³ 3M Test Method

Usage Information

Method of Application

Before resin is applied, the object to be coated should be clean, dry and free of oils. 3M™ Scotchcast™ Electrical Resin 5388 is first placed in an electrostatic fluid bed and charged (40 to 90KV), causing the epoxy resin particles to repel each other and move upward. This results in a cloud of charged particles above the surface of the bed. A grounded object is coated when passed through or placed in this cloud. Resin 5388 can be deposited in film thicknesses up to 25 mils on objects at room temperature. Because it is applied to a room temperature substrate, the powder can be selectively removed. Air used for fluidizing should be dried to a 30° to 35°F dew point.

Automated and manual types of application equipment are both available. Equipment manufacturers' names can be suggested upon request.

Curing

The cure of Scotchcast Electrical Resin 5388 is accomplished by heating the coated part to a temperature above the melting point of the resin. The resin then melts, flows to a controlled extent, and coalesces into a smooth, continuous, thin, essentially uniform coating, which cures and bonds to the substrate. The coating maintains its uniformity on flat surfaces as well as in corners and on high points of the part. Either convection oven or induction heating may be used as a heat source for curing the resin.

The figures below represent nominal guidelines for obtaining the resin's adhesion impact and chemical resistance characteristics.

Cure Temperature	Time
177°C (350°F)	15 minutes
204°C (400°F)	6 minutes
232°C (450°F)	3 minutes

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.

Storage

Laboratory evaluation indicates that the usable shelf life of the product is eighteen (18) 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.

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

UL Recognition

Resin 5388 has UL 1446 system approval as major insulation for use motor, transformer and coil constructions. The product is listed under File Number E163090, System Designation 3M120-1, 3M130-1, 3M155-1 and 3M180-1. These systems are rated class E, B, F, and H respectively.

Users interested in applying these insulation systems to their design are invited to contact 3M for approval letter to obtain access to the UL file for further information.

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.



Corrosion Protection Department

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