



Scotchcast™ 2130

Electrical Insulating Resin

Data Sheet

Product Description

3M™ Scotchcast 2130 Electrical Insulating Resin is a special flame-retardant, two-part, polyurethane resin that is designed to replace the cable jacket when splicing or repairing mine and portable cables. Its unique formulation makes it particularly suited to withstand the rugged conditions under which mine and portable cables must operate. Scotchcast 2130 is also used as the insulating material for cable splices operating at 1000 volts or less and is rated for continuous use at 194°F (90°C) with an overload rating of 266°F (130°C). Scotchcast 2130 conforms to MSHA CFR 30 Part 18.64.

Scotchcast 2130 is packaged in the convenient 3M two-part Unipak bag. The contents of the Unipak bag are:

Size B	7.6 oz (216 gms)
	10.7 cu. in. (175,3 cu. cm.)
Size C	21.7 oz (616 gms)
	30.5 cu. in. (500 cu. cm.)

Resin Features:

- Flame retardant
- Bonds to all modern cable jackets
- Bonds to itself
- Tough yet flexible
- Unipak container for mixing and pouring
- Excellent multipurpose moisture sealing resin

Applications

To replace or repair the jacket on both single and multi-core power cables and particularly where flexibility is required.

To insulate between the conductors of multi-core splices operating at 1000 volts or less.

To seal the crotch or sheath when terminating multi-core cables.

Physical Properties

Color Black

Hardness
ASTM D-2240 80 Shore A

Density 0.766 oz/in³
(1,32 g/cm³)

Tensile Strength 845 psi
ASTM D-412 (59,4 Kg/cm²)

Elongation
ASTM D-412 175%

Glass Transition Temperature
(by DTA) 3M Test Method -112°F
(-80°C)

Maximum Exotherm (100g) 144°F
3M Test Method (62°C)

Gel Time
@ 73°F (23°C) 15 min.

Moisture Absorption
(wt. gain, 168 hrs. @ 100°C)
3M Test Method 2.6%

Adhesion to portable cable jacket materials:

Neoprene	45 psi (3,2 Kg/cm ²)
Hypalon	45 psi (3,2 Kg/cm ²)
Nitrile/PVC	40 psi (2,8 Kg/cm ²)
PVC	40 psi (2,8 Kg/cm ²)
EPDM	10 psi (0,7 Kg/cm ²)
Urethane (itself)	45 psi (3,2 Kg/cm ²)

Adhesion to metals:

Steel	35 psi (2,5 Kg/cm ²)
Aluminum	35 psi (2,5 Kg/cm ²)
Copper	35 psi (2,5 Kg/cm ²)
3M Test Method	

Electrical Properties

Dielectric Strength 450 v/mil
ASTM D-149 (17,7 Kv/mm)

Dielectric Constant (60 Hz)
ASTM D-150
73°F (23°C) 4.6
140°F (60°C) 4.9
194°F (90°C) 5.4

Dissipation Factor (60 Hz)
ASTM D-150
73°F (23°) 3.8%
140°F (60°C) 4.9%
194°F (90°C) 7.5%

This data is not to be used for specifications. Values listed are for typical properties and should not be considered minimum or maximum.

Specifications

Product

The material must be supplied in a two-part polyethylene bag with a barrier separating a prepolymer and a polyol. The barrier must be capable of being broken to permit mixing the two parts without opening the bag.

Engineering/Architectural

The material must be Scotchcast™ 2130 polyurethane resin. It must be packaged in the 3M Unipak two-part polyethylene bag. The resin must be mixed within the Unipak container simply by separating the barrier between the two parts of the bag and working the contents back and forth within the bag.

Installation

CAUTION:

IF THERE IS ANY EVIDENCE OF MOISTURE IT MUST BE REMOVED AND THE SUBSTRATE DRIED BEFORE APPLYING THE RESIN. POLYURETHANES SUCH AS 2130 RESIN REACT WITH MOISTURE TO PRODUCE A FOAMED STRUCTURE.

Thoroughly clean and dry the surface of the substrate to which the material is desired to bond. In the case of synthetic cable jackets, the resin must be poured immediately after the surface is prepared or a bond may not result.

Remove the Unipak container from the envelope.

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Premix the black side of the resin by squeezing to a smooth consistency before breaking the barrier. Firmly grasp each flat side of the bag near the center barrier and at the same time pull sides of the barrier apart and roll sides of thumbs through the barrier. Break the barrier all the way across to the side seals.

Alternately squeeze each end of the bag forcing the resin back and forth. Strip the resin from the corners of the bag. Mix until the color is completely uniform (30 to 40 squeezes).

Clip off corner of the Unipak container and immediately pour into mold fill spout maintaining 1/2-inch head. When a mold is used it may be removed when the compound is no longer tacky or after one and a half hours at 73°F (23°C).

Typical Minimum Cure Times

<u>Temp.</u>	<u>Demold</u>	<u>Cure</u>
70°F (21°C)	1.5 hrs.	16-24 hrs.
50°F (10°C)	4.0 hrs.	24-30 hrs.
32°F (0°C)	6-8 hrs.	36 hrs.

Caution: May be irritating to eyes and skin on direct contact. Vapors may cause respiratory sensitization in susceptible individuals.

Contains diphenylmethane diisocyanate.

Precautions: Avoid direct eye and skin contact. Avoid breathing the vapors. Use only in well ventilated areas with sufficient air movement to maintain airborne concentration levels at recognized health and safety levels.

Do not take internally; after mixing and handling, wash thoroughly before eating, drinking or smoking.

Suggested First Aid:

Eye contact - immediately flush eyes with plenty of water; call a physician.
Skin contact - wash with soap & water.
Inhalation - remove to fresh air.

Refer to Material Safety Data Sheet for additional precautionary information.

Shelf Life

Scotchcast 2130 resin is stable for a period of one year from date of manufacture providing the guard bag (the white aluminized bag) is not opened when stored under the following recommended storage conditions. Store behind present stock in a clean dry place at a temperature of 70°F and 40 to 50% relative humidity. Good stock rotation is also recommended. If the guard bag is removed the shelf life could be reduced to as little as two hours under conditions of high humidity. Scotchcast 2130 is not impaired by freezing; however it should be warmed to at least 32°F (0°C) before being mixed or poured.

Availability

3M Scotchcast 2130 resin is available from your electrical distributor.



Recycled paper
40% pre-consumer
10% post-consumer

Litho in USA
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