

3M™ Scotchcast™ Flame-Retardant Compound 2131

Data Sheet

July 2013

Description

3M™ Scotchcast™ Flame-Retardant Compound 2131 is a two-part polyurethane resin designed to replace the cable jacket when splicing or repairing mine and portable cables. Its formulation makes it particularly suited to withstand the rugged conditions under which mine and portable cables must operate.

Flame-Retardant Compound 2131 is also used as the insulating material for cable splices operating at up to 1000 volts and designed for 194°F (90°C) continuous use/266°F (130°C) overload.

When used in accordance with the appropriate kit configuration, Compound 2131 meets Part 7, Title 30 CFR and carries the following MSHA approvals:

| | |
|------------------|--|
| 07-KA060002-MSHA | 3M™ Scotchcast™ Inline Splice Kit for Flexible Cable 82-F Series 3M™ Scotchcast™ Flexible Power Cable Tap Splice 82-BF1 |
| 07-KA060007-MSHA | 3M™ Scotchcast™ Mine and Portable Splice Kits 8096 Series 3M™ Three-Conductor Inline Splicing Kits 5750 and 5760 Series 3M™ Scotchcast™ Jacket Repair Kits M Series* |

* The Compound 2131 is not included with the "M" Series kits and must be ordered separately.

This compound is available in a convenient, pre-measured, two-part closed mixing pouch of the following sizes:

| Bag | Weight oz (g) | Volume in ³ (cm ³) |
|--------|------------------|--|
| B Size | 7.5 (213) | 10.6 (175) |
| C Size | 21.5 (612) | 30.6 (502) |

Bulk components of Compound 2131 are also available separately in 5 gallon (18,9 L) containers:

- Each container of Part A contains 44.5 pounds (20,1 kg) [635 fl.oz. (18,7 L)]
- Each container of Part B contains 46.5 pounds (21,0 kg) [566 fl.oz. (16,7 L)]

Agency Approvals & Self Certifications

RoHS
2011/65/EU

"RoHS 2011/65/EU" means that the product or part does not contain any of the substances in excess of the maximum concentration values ("MCVs") in EU RoHS Directive 2011/65/EU. The MCVs are by weight in homogeneous materials. This information represents 3M's knowledge and belief, which may be based in whole or in part on information provided by third party suppliers to 3M.

3M™ Scotchcast™ Flame-Retardant Compound 2131

Features

- Flame-retardant
- Bonds to most modern cable jackets
- Bonds to itself
- Tough, yet flexible
- Available in two-part closed mixing pouch for easy mixing and pouring
- Excellent multi-purpose moisture sealing resin

Applications

- To replace or repair the jacket on both single and multi-core power cables
- To insulate between conductors of multi-core splices operating at up to 1000 volts
- To seal the crotch or sheath when terminating multi-core cables

Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

| Physical Properties (Test Method) | Typical Value US units (metric) |
|--|---|
| Color | Black |
| Hardness (ASTM D2240) | 82 Shore A |
| Density | 0.703 oz/in ³ (1,217 g/cm ³) |
| Tensile Strength (ASTM D412) | 1038 psi (73,0 kg/cm ²) |
| Elongation (ASTM D412) | 339% |
| Glass Transition Temperature, T_g (DSC) | -103 °F (-75°C) |
| Maximum Exotherm, 100g (3M TM-67) | 147°F (64°C) rise |
| Gel Time @ 75°F (23°C) (3M Method TM-67) | 17 minutes |
| Moisture Absorption (ASTM D471) 168 hrs. Immersion @ 212°F (100°C) | 4.9% |
| Adhesion to Metals (lb/in²) (3M TM-456) | |
| Copper | 550.2 |
| Brass | 274 |
| Steel | 491.3 |
| Aluminum | 221 |
| Adhesion to Cable Jackets (lb/in²) (3M TM-457) | |
| Vinyl | 125 |
| Neoprene | 115 |
| Nylon | >72 |
| XLPE | 208.5 |

| Electrical Properties (Test Method) | Typical Value |
|---|---|
| Dielectric Strength (ASTM D149) | 343 V/mil (13,5 kV/mm) |
| Dielectric Constant, @ 60Hz (ASTM D150) | 5.22 @ 73°F (23°C) 6.33 @ 140°F (60°C) 6.56 @ 194°F (90°C) |
| Dissipation Factor, @ 60Hz (ASTM D150) | 5.6% @ 73°F (23°C) 7.9% @ 140°F (60°C) 17.0% @ 194°F (90°C) |

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Usage Information **IMPORTANT:**

Product should remain in the sealed container/envelope until ready to use. In cold weather, warm closed mixing pouch to 60°F (16°C) or warmer before mixing. Keep in a warm area, such as truck cab or inside pocket, until ready to use.

Closed Mixing Pouch:

- Tear open the protective envelope and remove the closed mixing pouch
- Before breaking the barrier, squeeze the bag to premix the separate components.
- Firmly grasp each flat side of the bag near the center barrier, while pulling the sides of the barrier apart and rolling the 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 (30 seconds).
- Strip the resin from the corners of the bag and continue to mix until the color is uniform (additional 30 seconds, maximum).
- Clip off a corner of the closed mixing pouch and pour

Bulk Components:

Measure the appropriate quantity of each component as indicated in the table below, then thoroughly mix to a uniform color and consistency prior to use. Bulk components should be blanketed with nitrogen to prevent moisture contamination

| Component | Color | Weight Ratio (w/w) | Volume Ratio (v/v) |
|-----------|-------------|--------------------|--------------------|
| Part A | Pale Yellow | 1 | 1 |
| Part B | Black | 2.1 | 1.69 |

Typical De-Mold/Cure Time:

| Temperature | De-Mold Time | Approximate Cure Time |
|-------------|--------------|-----------------------|
| 70°F (21°C) | 1.5 – 2 hrs | 16 – 24 hours |
| 50°F (10°C) | 3.5 – 4 hrs | 24 – 30 hours |
| 32°F (0°C) | 6 – 8 hrs | 36+ hours |

NOTE: Values are typical, not to be considered minimum or maximum. Always confirm that material is no longer tacky prior to de-molding.



Caution

Working around energized electrical systems may cause serious injury or death. Installation should be performed by personnel familiar with good safety practice in handling electrical equipment. De-energize and ground all electrical systems before installing product.

Handling and Safety Precautions:

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

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Shelf Life & Storage

3M™ Scotchcast™ Flame-Retardant Compound 2131 has a 3-year shelf life from date of manufacture when stored in the factory-sealed packaging under humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).

Availability

Please contact your local distributor; available from 3M.com/electrical [Where to Buy] or call 1.800.245.3573.

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