

COMPOUND DATA SHEET

IC571E

SEMI-CONDUCTIVE COMPOUND FOR CONDUCTOR SHIELD and/or FULLY BONDED INSULATION SHIELD FOR MEDIUM AND HIGH VOLTAGE POWER CABLE

IC571E is a pelletized, crosslinkable semi-conductive compound for use as a conductor shield and/or fully bonded insulation shield for medium to high voltage power cables. It is formulated with a polymer system that has demonstrated compatibility with aluminum and copper conductors.

IC571E was developed as a conventional conductor shield with enhanced smoothness. It provides an interface between the extruded shield and insulation, which should lead to improved cable performance. Improvement in performance has been demonstrated in laboratory accelerated cable life test (ACLT) evaluations.

IC571E was designed for use with XLPE, TRXLPE, EAM, and EPR insulation compounds.

IC571E was developed for use in cables manufactured to the following specifications:

AEIC CS8-2000

ICEA S-94-649

ICEA/ANSI S-93-639

ICEA/ANSI S-97-682

CAN/CSA-C68.3-97

IC571E is protected by US patent Nos 6,291,772, 5,556,697 and other patents pending. The information contained herein is offered for your consideration and use. It is not to be construed as a warranty or representation of fitness for use, and expressly is not intended to give permission or recommendation to practice a patented invention without a license. Indianapolis Compounds may be consulted for recommendations for specific processing conditions when the intended application and equipment have been determined.

Typical Physical Properties on Plaque

<u>Property</u>	<u>Typical Value</u>	<u>Units</u>	<u>Test Method</u>
Specific Gravity, 23°C	1.14		ASTM D 792
Tensile Strength	2,800 (19)	psi (MPa)	ASTM D 412
Elongation	200	%	
Secant Modulus	26,900 (185)	psi (MPa)	
Retained Tensile Strength, Aged 7 days at 121°C	95	% of Orig.	
Aged 7 days at 140°C	85	% of Orig.	
Retained Elongation, Aged 7 days at 121°C	85	% of Orig.	
Aged 7 days at 140°C	80	% of Orig.	
Hot Creep, 150°C Elongation	30	%	ICEA T-28-562
Set	5	%	
Low Temperature Brittleness Point, F₅₀	- 40	°C	ASTM D 746
Durometer Hardness	35	Shore D	ASTM D 2240
Heat Distortion, 1 hour at 121°C, 2000g	7	%	ICEA T-27-581
Environmental Stress Crack Resistance 500 hours at 50°C in 100% Igepal	Pass	No cracks	ASTM D 1693

Typical Electrical Properties on Plaque

<u>Property</u>	<u>Typical Value</u>	<u>Units</u>	<u>Test Method</u>
DC Volume Resistivity			ASTM D 991
23°C	1	ohm-m	
90°C	5	ohm-m	
105°C	5	ohm-m	
140°C	5	ohm-m	

Typical Electrical Properties on Cable*

<u>Property</u>	<u>Typical Value</u>	<u>Units</u>	<u>Test Method</u>
DC Volume Resistivity			ICEA S-66-524
23°C	1	ohm-m	
90°C	10	ohm-m	
130°C	10	ohm-m	

*Cable tested: 1/0 AWG/19 wire AL, 15 kV XLPE, 100% insulation level, dry cure.

Process Parameters

The following process parameters are offered as a starting point, however adjustments may be needed to optimize **IC571E** depending upon equipment and cable design. A minimum 15:1 L/D extruder is recommended. Dehumidified hopper drying at 110-120°F (43-50°C) for 4-6 hours is recommended to remove moisture. Indianapolis Compounds can provide assistance in designing an extruder screw to optimize the processability of **IC571E**.

Extruder	Temperature	Profile
Zone 1	215°F	102°C
Zone 2	225°F	107°C
Zones 3, 4	230°F	110°C
Die & Head	240°F	116°C
Screw Cooling	None	
Screen Pack	20 Mesh	

Packaging

BULK BOX Heavy-duty gaylord box.

LINER Polyethylene, 4 mils (0.1 mm)

NOTE Compound can be supplied in intermediate bulk containers (IBC bags).

Handling/Storage

Product should be stored below 100°F (38°C) to avoid blocking. The use of box covers while unloading, and a pneumatic unload system equipped with pre-filters is recommended to maintain product cleanliness. Boxes can be stacked three high for storage. Bulk handling or storage is not recommended.

Environmental

HANDLING Under normal conditions of use, there are no known hazards associated with handling **IC571E**. The pelletized form of this product minimizes exposure to dust or mists.

DISPOSAL Deposit in waste containers and landfill in accordance with all governmental laws and regulations.

For further information contact:

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