

DGDB-3485 NT Provides Performance Advantages for Non-grease-filled Cables



Dow Wire & Cable

Dow Wire & Cable, the global market and technology leader in polyolefin-based and elastomeric wire and cable materials, now offers an improved expandable, high-molecular weight, high-density polyethylene cellular foam insulation compound designed for use in telephone wire insulation.

DGDB-3485 NT insulation compound from Dow Wire & Cable is formulated with an identical stabilization system as is found in DGDA-3485 NT and provides long-term insulation stability performance. This highly stabilized material has been designed for high-speed temperature-controlled extrusion.

DGDB-3485 NT is an enhanced grade of DGDA-3485 NT. The chemical blowing-agent system has been optimized for enhanced additive dispersion. Enhanced compound mixing will result in reduced batch-to-batch variation.

Physical and Electrical Properties

	Test Method ⁽¹⁾	Typical Value ⁽²⁾
Physical		
Density, 23°C Solid Expanded	ASTM D792	0.943 g/cm ³ 0.44 g/cm ³
Melt Index ⁽³⁾	ASTM D1238	0.85 g/10 min
Tensile Strength Solid Expanded ⁽⁴⁾	ASTM D638	2900 psi (20.0 MPa) 1200 psi (8.3 MPa)
Tensile Elongation Solid Expanded ⁽⁴⁾	ASTM D638	400% 300%
Thermal Stress Crack, F ₀	ASTM D2951	> 96 hours
Electrical		
Dielectric Constant, at 1 MHz Solid Expanded	ASTM D1531	2.33 1.50
Dissipation Factor, at 1 Mhz, Solid	ASTM D1531	0.00030
Volume Resistivity, 23°C	ASTM D257	> 1x10 ¹⁵ ohm-cm

Product advantages

DGDB-3485 NT provides superior age testing and stability performance and meets major international standards and specifications for foam/skin applications. Additional product advantages include:

- More uniform product – reduced batch-to-batch variation requires fewer extrusion adjustments
- Increased voltage breakdown strength
- Potentially lower scrap due to reduction in spark fault failures
- No trade-offs in performance as compared to DGDA-3485 NT

Performance characteristics

In addition to product performance continuity and increased voltage breakdown performance, characteristics include:

- No change in physical property performance from current DGDA-3485 NT product
- Same stabilization package
- Chemically equivalent blowing-agent system to DGDA-3485 NT
- Laboratory extrusion studies have noted only minor processing temperature adjustments (1-2°F may be required) in extruder metering zones

Spark Fault Reduction

Voltage Breakdown Performance	DGDA-3485 NT	DBDB-3485 NT
Defects/Minute 3.0 kV	125	10.5
2.8 kV	35	3.8
2.6 kV	3.5	1
2.4 kV	2	0

An increase in voltage breakdown strength can lead to reduced scrap. Results shown for 8 mil foam-only insulation on 24 AWG wire.



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Innovative, technology-based solutions

Dow Wire & Cable solutions include a combination of materials that exhibit mechanical strength, flexibility and aging stability. Our goal is to help provide the materials and expertise our customers and end users need to add longer life and improved performance and consistency to their systems.

Dow Wire & Cable materials include very high standards of processability and performance, combined with a beneficial balance of properties, including excellent electrical properties and stress crack resistance and high thermal stability and toughness. You can count on Dow Wire & Cable for cleanliness, consistency, reliability, performance and quality.

Dow Wire & Cable provides solutions that are designed to address the processing and performance requirements of current and next-generation wire and cable products, along with technical support that extends from formulation through installation.



A full range of services

Dow Wire & Cable is the leading global provider of plastics-enhanced materials, technology solutions and expertise for wires and cables essential to the transmission, distribution and consumption of power, voice and data. For more than 60 years, Dow Wire & Cable, a business unit of The Dow Chemical Company and its subsidiaries, has set the global standard for assurance of wire and cable longevity, efficiency, ease of installation and protection.

Backed by sophisticated technology and compounding facilities in Asia, Europe and the Americas, Dow Wire & Cable can efficiently leverage assets to address challenges that are specific to the manufacture of most types of cables.

Please contact your Dow Wire & Cable sales representative for more information about our technology, materials, performance and service.

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- use in cardiac prosthetic devices regardless of the length of time involved (cardiac prosthetic devices include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems and ventricular bypass-assisted devices);
- use as a critical component in medical devices that support or sustain human life; or
- use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

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