

DOW™ Electrical & Telecommunications

HFDB-4201 NT K

Crosslinkable Power Cable Insulation Compound

The Dow Chemical Company

Message:

HFDB-4201 NT K is a long-life, cross linkable, low-density, polyethylene insulation compound for the insulation of medium voltage power cables. HFDB-4201 NT K is equipped with a non-migrating stabilizer providing high thermal stability, long term storage stability, and optimum cross-linking behavior.

Applications:

HFDB-4201 NT K is designed for use in power distribution and sub-transmission cables.

Specifications:

Cables insulated with HFDB-4201 NT K would be expected to meet the requirements in the following standards when processed using state-of-the-art cable manufacturing practices:

IEC: 60502

CENELEC: HD 620 S1

AEIC: CS8

ANSI/ICEA: S-94-649, S-97-682, S-93-639/NEMA WC 74

GB/T 12706

BSI BS 6622

General Information			
Uses	Medium voltage insulation		
Agency Ratings	AEIC CS8		
	ICEA S-66-524		
	ICEA S-93-639		
	ICEA S-94-649		
	IEC 60502		
	NEMA WC-74		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.920	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (190°C/2.16 kg)	2.1	g/10 min	ASTM D1238
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength	20.0	MPa	ASTM D638
Tensile Elongation (Break)	500	%	ASTM D638
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity (23°C)	> 1.0E+15	ohms · cm	ASTM D257
Dielectric Strength			ASTM D149
3.18 mm ¹	26	kV/mm	ASTM D149
3.18 mm ²	23	kV/mm	ASTM D149
Dielectric Constant (60 Hz)	2.30		ASTM D150

Dissipation Factor (60 Hz)	3.0E-4	ASTM D150
Additional Information		
<p>Cleanliness Requirements</p> <p>HFDB-4201 NT meets strict standards for cleanliness. Throughout the production process, the product is tested to ensure a level of cleanliness. Extruded tapes are scanned by an automatic inspection system in a class 10,000 clean room. The purity data is managed using an acceptance sampling plan which ensures that the product in the shipping container meets the quality standards.</p> <p>Maximum Allowable in 1.0 Kg Tape: HFDB-4201 NT</p> <p>125-250 μm (5-9 mils): 3</p> <p>250-625 μm (10-25 mils): 2</p> <p>>625 μm (>25 mils): 0</p> <p>In addition, as HFDB-4201 NT is packaged, a continuous side stream of pellets is analyzed using an electronic pellet inspector. A review of detected contamination is incorporated into our quality program.</p> <p>Storage</p> <p>The environment or conditions of storage greatly influences the recommended storage time. Storage under extreme conditions may affect the quality, processing, or performance of the product. Storage should be in accordance with good manufacturing practices. The recommended storage conditions are dry conditions with temperatures between 50°F and 86°F (10°C and 30°C). When stored under these conditions, the product may be used by the customer for up to one year from the date of sale or two years from the date of manufacture, whichever comes first. It is recommended that the practice of using the product on a first-in / first-out basis be established.</p>		
Extrusion	Nominal Value	Unit
Melt Temperature	116 - 138	°C
Extrusion instructions		
<p>HFDB-4201 NT provides excellent surface finish and outstanding output rates over a broad range of conditions. For optimum results, melt extrusion temperatures in the range of 240 to 280°F (116-140°C) are recommended, although higher melt temperatures are possible on certain equipment with due care. Generally, a 60-40-20 screen pack is recommended. However, specific recommendations for processing conditions can be determined when the application and type of processing equipment are known.</p>		
NOTE		
1.	Method A (short time)	
2.	Method B (step by step)	
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