

DOW™ Electrical & Telecommunications

HFDB-4201 EC

Crosslinkable Power Cable Insulation Compound

The Dow Chemical Company

Message:

HFDB-4201 is a long-life, unfilled, crosslinkable, low density, polyethylene insulation compound designed for medium and high voltage (5 kV and higher) power cable insulation applications. It has a very low level of contamination and bears the designation Extra Clean (EC). HFDB-4201 EC has been designed to have an extremely low level of additive bloom for a long storage life, low dusting, and an enhanced degree of scorch retardance for fine mesh filtering and long production run lengths during cable manufacture.

Specifications

HFDB-4201 EC is designed for use in power distribution and sub-transmission cables. Cables insulated with HFDB-4201 EC, using sound commercial fabrication manufacturing practice, would be expected to meet the latest editions of the following specifications and regulations:

ANSI/ICEA: S-94-649, S-97-682, S-93-639 / NEMA WC74

AEIC: CS8

RUS: 50-70 (U-I)

CEA: WCWG-01, WCWG-02

UL 1072

IEC: 60502, 60840

CENELEC: HD 620 S1/A3, HD 632 S2, HD 629 S1

DIN VDE: 0207, DIN VDE 0276-620

BSI BS: 6622

GB/T 12706

General Information	
Uses	Underground cable
	Wire and cable applications
	Insulating material
	Medium voltage insulation
Agency Ratings	AEIC CS8
	BS 6622
	DIN VDE 0276-620
	HD 620 S1
	HD 632 S2
	ICEA S-93-639
	ICEA S-94-649
	ICEA S-97-682
	IEC 60502
	IEC 60840
	NEMA WC-74
	UL 1072
	VDE 207
Forms	Particle

Physical	Nominal Value	Unit	Test Method
Specific Gravity	0.920	g/cm ³	ASTM D792
The degree of cross-binding-Extractables		%	ASTM D2765A
Hot Creep (200°C)		%	ICEA T-28-562
Thermoset (200°C)		%	ICEA T-28-562
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength	20.7	MPa	ASTM D638
Tensile Elongation (Break)	530	%	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			

Nominal property values above represent tests on molded stress-relieved slabs. Cure times were 15 minutes at (175°C).Extra-Clean Requirements HFDB-4201 EC meets the strictest standards for cleanliness established for an unfilled, crosslinkable cable insulation compound. Throughout the production process, the product is tested to ensure the highest 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 or exceeds extra-clean standards.

Maximum Allowable in 1.0 Kg Tape: HFDB-4201 EC

125-250 µm: 2

250-625 µm: 0

>625 µm: 0

In addition, as HFDB-4201 EC is packaged, a continuous side stream of pellets is analyzed using an electronic pellet inspector. A review of detected contamination is incorporated into our EC quality program.

Storage

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.

NOTE	
1.	Method A (short time)
2.	Method B (step by step)

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