

DOW™ Electrical & Telecommunications

HFDB-4201 SC K

Super Clean Polyethylene Compound for High Voltage Power Cable Insulation

The Dow Chemical Company

Message:

HFDB-4201 SC K is a long-life, cross linkable, low-density, polyethylene insulation compound of high cleanliness and purity developed especially for the insulation of High Voltage power cables. HFDB-4201 SC K is equipped with a non-migrating stabilizer providing high thermal stability, long term storage stability, and optimum cross-linking behavior.

Applications:

HFDB-4201 SC K is recommended especially for the insulation of High Voltage power transmission and distribution cables, <= 220kV.

Specifications:

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

IEC: 62067, 60840

CENELEC: HD 632 S2

AEIC: CS9

ANSI/ICEA: 108-720-2004

GB/T 11017, GB/T 18890

General Information			
Agency Ratings	AEIC CS9		
	HD 632 S2		
	ICEA S-108-720		
	IEC 60840		
	IEC 62067		
Forms	Particle		
Physical	Nominal Value	Unit	Test Method
Density ¹	0.921	g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (130°C/2.16 kg)	0.30	g/10 min	ISO 1133
Moisture ²		ppm	Internal method
Change in Tensile Properties - 10 days (150°C)		%	IEC 60811-1-1
Thermoset ³			IEC 811-2-1
Elongation under Load : 200°C		%	IEC 811-2-1
Permanent Deformation : 200°C		%	IEC 811-2-1
Gottfert Elastograph - Torque	0.60	N·m	ISO 6502
Reaction Speed - t90 (180°C)	5.0	min	ISO 6502
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength	20.0	MPa	IEC 60811-1-1
Tensile Elongation (Break)	500	%	IEC 60811-1-1
Electrical	Nominal Value	Unit	Test Method

Volume Resistivity	> 1.0E+16	ohms·cm	IEC 60093
Dielectric Strength	> 30	kV/mm	IEC 60243-1
Dielectric Constant (1 MHz)	< 2.30		IEC 60250
Dissipation Factor (50 Hz)	< 3.0E-4		IEC 60250
Additional Information	Nominal Value	Unit	Test Method

Cleanliness:

High cleanliness is assured through a number of precautions taken during the manufacturing of DOW HFDB-4201 SC K

The specifications are set to exclude contaminants >100µm.

These specifications are based on online continuous sampling and testing.

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.

Packaging:

HFDB-4201 SC K can be delivered in 500kg UNICLEAN™ big bags or in 1000kg bottom unloading octabins.

Extrusion	Nominal Value	Unit
Melt Temperature	115 - 140	°C

Extrusion instructions

HFDB-4201 SC K provides outstanding output rates over a broad range of conditions. For optimum results, melt extrusion temperatures of ≤ 135°C are recommended.

Screen packs are only required if there is a need to improve the homogenization of the melt or as protection from contamination entering during unloading and processing. HFDB-4201 SC K allows the use of fine mesh screens. Specific recommendations for processing conditions can be determined when the application and processing equipment type are known.

At start-up, it is recommended to use DFDK-4850 NT start-up compound to achieve stable extruder conditions

NOTE	
1.	Base resin
2.	Karl Fischer titration
3.	0.2 MPa

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