UNIGARD™ HP HFDA-1544 NT

Halogenated Flame Retardant Insulation Compound

The Dow Chemical Company

Message:

Control cable insulation
UNIGARD™HP HFDA-1544 Natural is a flame-retardant, peroxide-cured polyethylene copolymer used as a wire insulation material. It is recommended to apply it to 600 volt power cables and control cables. It is suitable for wet and dry occasions such as UL XHHW-2 or Canadian Standards Association (CSA) RW-90 at an operating temperature of 90°C. When this product was developed, it was considered to widen its processing temperature window to reduce the scorch phenomenon in the extrusion system that can cause problems, and reduce odor and head drop due to the use of peroxide curing system.
Specifications
HFDA-1544 Natural have been UL announced to meet the requirements of XHHW, XHHW-2, RHH, RHW, RHW-2, SIS, USE, USE-2 and VW-1 applications. The material is also applicable to applications specified by the Canadian Standards Association NMD-90 and RW-90.

General Information			
Uses	Flame Retardant Insulation Halogenated Insulation Low voltage insulation Wire and cable applications Insulating material Moisture-resistant insulating material		
Forms	Particle		
Processing Method	Extrusion		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.30	g/cm³	ASTM D1505
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength	13.8	MPa	ASTM D638
Tensile Elongation (Break)	330	%	ASTM D638
Flexural Modulus - 1% Secant	124	MPa	ASTM D790
Aging	**Nominal Value**	**Unit**	**Test Method**
Tensile strength retention-7 days (121°C)	100	%	ASTM D638
Elongation retention rate-7 days (121°C)	95	%	ASTM D638
Deformation (121°C)	10	%	UL 1581
Insulation resistance-in water (16°C)	50000	Mohms/1000 ft	UL 44
VW-1 - Vertical Burn Test (No. 14 AWG (1.63 mm dia.)	Pass		UL 44
Flame test-Horizontal, No. 14 AWG (1.63mm dia.) 0.030 in. wall	Pass		UL 44
Thermal	**Nominal Value**	**Unit**	**Test Method**
Brittleness Temperature	-55.0	°C	ASTM D746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Dielectric Constant (60 Hz)	3.20		ASTM D150
Dissipation Factor (60 Hz)	3.0E-3		ASTM D150

Flammability	Nominal Value	Unit	Test Method
Oxygen Index	29	%	ASTM D2863

Additional Information
变形,UL-1581,121°C:10%拉伸强度保持,ASTM D638,在 121°C 下 7 天后:100%拉伸伸长率保持,ASTM D638,在 121°C 下 7 天后:95%

Figure 5: EM-60 Data HFDA-1544 Specific Inductance Capacitance in 90°C water

Extrusion instructions

The Extrusion Profile summarizes conditions for a commercial extrusion run on UNIGARD-HP HFDA-1544 Natural. Using these conditions with a standard polyethylene screw afforded high quality finished wire meeting the specifications set forth in Underwriters Laboratories, Subject 44 (XHHW, SIS, USE, A, B or C applications and VW-1). Exact extrusion characteristics will, of course, be dependent on the equipment in use and can only be determined during cable trials. Hopper drying at 150°F (65°C) before extrusion is recommended to remove moisture and diminish the possibility of die drool.Extrusion Profile
Compound: HFDA-1544 on #14 7/STR (1.84 mm) Bare Copper, .030 in, 3 1/2 in Extruder
Head: 235°F (113°C)
Die: 180°F (82°C)
Zones: RF 235, 235, 235, 240, 250°F (113, 113, 113, 115,121°C)
Screw: 180°F (82°C)
Stock: 250°F (121°C)
Speed: Dependent on steam leg length. Allow for residence time of approximately 1 min. for 14 AWG (1.63 mm dia.) and 0.030 in. wall.

Recommended distributors for this material

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