UNIGARD™ RE DFDA-1980 NT

Non-Halogen, Flame Retardant, Thermoplastic Jacket Compound

The Dow Chemical Company

Message:

Color sheath/various telecommunications and industrial applications

General Information			
Uses	Flame Retardant Jacketing		
	Industrial Cable Jacketing		
	LSZH Jacketing		
	Wire and cable applications		
	Communication wire sheath		
Forms	Particle		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity [1]	1.60	g/cm³	ASTM D792
Hardness	**Nominal Value**	**Unit**	**Test Method**
Durometer Hardness [2]			ASTM D2240
Shaw A	94		ASTM D2240
Shaw D	55		ASTM D2240
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Strength [3]	12.4	MPa	ASTM D638
Tensile Elongation [4] (Break)	120	%	ASTM D638
Flexural Modulus - 1% Secant [5]	259	MPa	ASTM D790
Aging	**Nominal Value**	**Unit**	**Test Method**
Tensile strength retention-10 days(110°C) [6]	110	%	ASTM D638
Elongation retention rate-10 days(110°C) [7]	80	%	ASTM D638
Oxygen sensing time-Al pans, no screen, 100 ml oxygen/min(225°C)	40	min	ASTM D3895
VW-1	Pass		UL 83
Toxicity	1.12		NES 713
Acid gas emission pH	4.30		IEC 754-2
Acid gas emission conductivity	4.00	µS/mm	IEC 754-2
Temperature index (combustion)-Critical	> 380	°C	NES 715
Smoke (2.54mm)	5.36		NES 711
Smoke Density			ASTM E662
Flaming Mode - D1.5 : 2.54 mm	1.7		ASTM E662
Flaming Mode - D4.0 : 2.54 mm	2.6		ASTM E662
Flaming Mode - Dm, (corr.) : 2.54 mm	52		ASTM E662
Non-flaming Mode - D1.5 : 2.54 mm	1.2		ASTM E662

Non-flaming Mode - D4.0 : 2.54 mm	5.6		ASTM E662
Non-flaming Mode - Dm, (corr.) : 2.54 mm	210		ASTM E662
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature [8]	-17.0	°C	ASTM D746
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	2.3E+14	ohms·cm	ASTM D257
Dielectric Constant			ASTM D150
60 Hz	4.32		ASTM D150
100 kHz	4.10		ASTM D150
1 MHz	3.87		ASTM D150
6 MHz	3.64		ASTM D150
Dissipation Factor			ASTM D150
60 Hz	3.8E-3		ASTM D150
100 kHz	0.015		ASTM D150
1 MHz	0.034		ASTM D150
6 MHz	0.029		ASTM D150
Flammability	Nominal Value	Unit	Test Method
Oxygen Index	48	%	ASTM D2863

Extrusion instructions

DFDA-1980 Natural can be processed on commercial thermoplastic extrusion equipment. Recommended conditions are:Extruder
Extruder L/D: 20:1 to 24:1
Screw Suggested: Polyethylene type single flight with metering section
Metering Depth: Shallow rather than deep
Compression Ratio: 2:1 to 3:1
Screen Pack: 20/80/20 mesh
Extrusion Temperatures
Feed Zone: 395°F (202°C)
Center Zones: 415°F (213°C)
Metering Zone: 440°F (225°C)
Head/Die Zones: 445°F (230°C)
Melt Temperature: 418°F (215°C)
Tooling
Pressure or tube-on
Die
Single tapered short land die preferred for tube on applications
Draw-Down Ratio (DDR)
Tube-On: 1.6 to 2.0
Extrusion temperatures over 434°F (240°C) should be avoided to prevent premature decomposition of some components in the compound, resulting in porosity and deterioration of properties.
Compound Drying
Drying before extrusion in a dehumidifying hot air dryer for 24 hours at 146°F (80°C) is recommended to avoid jacket porosity and to improve the extrusion quality. Do not heat over 146°F (80°C).
Colorability
UNIGARD RE DFDA-1980 Natural is a colorable compound. Color masterbatch materials recommended for use in DFDA-1980 Natural should be of the type used in ethylene copolymer wire and cable products. Generally speaking, color masterbatch added at the 0.5 to 1.0% by weight gives adequate color and disperses well in the extrusion process.

NOTE

1.	Tests based on extruded tapes 0.5 mm thickness.
2.	Tests based on extruded tapes 0.5 mm thickness.

3.	Tests based on extruded tapes 0.5 mm thickness.The typical values of DFDA-1980 Natural shown above are based #14 AWG solid copper wire (1.63 mm dia.) with 0.030 in (0.76mm) insulation.
4.	Tests based on extruded tapes 0.5 mm thickness.The typical values of DFDA-1980 Natural shown above are based #14 AWG solid copper wire (1.63 mm dia.) with 0.030 in (0.76mm) insulation.
5.	Tests based on extruded tapes 0.5 mm thickness.
6.	Tests based on extruded tapes 0.5 mm thickness.The typical values of DFDA-1980 Natural shown above are based #14 AWG solid copper wire (1.63 mm dia.) with 0.030 in (0.76mm) insulation.
7.	Tests based on extruded tapes 0.5 mm thickness.The typical values of DFDA-1980 Natural shown above are based #14 AWG solid copper wire (1.63 mm dia.) with 0.030 in (0.76mm) insulation.
8.	Tests based on extruded tapes 0.5 mm thickness.

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

WECHAT