

ThermaGon 9180UV (Natural)

Description

ThermaGon 9180UV is a non-halogenated, thermoplastic, low smoke, low corrosive and low toxicity flame-retarded compound designed for use as wire and cable jacketing. The compound is formulated to have a good balance of flame-retardant properties, processibility and physical properties. ThermaGon 9180UV is especially recommended for 90°C applications requiring good hot deformation resistance for electrical cables. ThermaGon 9180UV has excellent stability to ultraviolet light and is recommended for cables exposed to outdoor light. The compound is supplied as natural pellets and may be colored with EVA or PE masterbatch to the desired color.

ThermaGon 9180UV is designed to pass the IEEE-383, UL 1581, and IEC 332-3 Vertical Tray Cable Flame Tests and the IEC 332-1 Vertical Single Cable Flame Test for typical cable constructions. The compound is also designed to pass the UL 1277 Electrical Power and Control Cables Test, the UL 1655 Standard for Community-Antenna Television Cables and the UL 1666 Riser Cable Flame Test.

Typical Properties

Property	Test Method	Value	Unit
Density	ASTM D-1505	1.56	g/cm ³
Tensile Strength at Break *	ASTM D-638	1950 13.4	psi MPa
Elongation at Break *	ASTM D-638	170	%
Heat Aging *			
Retained Tensile at Break	ASTM D-638	2150 (110%)	psi
Aged 168 hours @ 121°C		14.8 (110%)	MPa
Retained Elongation at Break			
Aged 168 hours @ 121°C		140 (82%)	%
UV Exposure *			
Retained Tensile at Break	ASTM D-638	1900 (97%)	psi
Aged 1000 hr., QUV A		13.1 (97%)	MPa
Retained Elongation at Break			
Aged 1000 hr., QUV A		135 (79%)	%
UV Exposure *			
Retained Tensile at Break	ASTM D-638	1910 (98%)	psi
Aged 1000 hr., QUV B		13.1 (98%)	Mpa
Retained Elongation at Break			
Aged 1000 hr., QUV B		135 (79%)	%

* Properties determined from 50 mil (1.27 mm) compression-molded plaques; Specimens pulled at 2"/min. crosshead speed.

Typical Properties (cont.)

Property	Test Method	Value	Unit
Fluid Resistance * ASTM #2 Oil, 4 hr. @ 70°C Retained Tensile		1760 (90%) 12.1 (90%)	psi Mpa
Retained Elongation		180 (109%)	%
1 Molar HCl, 168 hr. @ 23°C Retained Tensile		1820 (93%) 12.5 (93%)	psi Mpa
Retained Elongation		160 (94%)	%
1 Molar NaOH, 168 hr. @ 23°C Retained Tensile		1720 (88%) 11.9 (88%)	psi Mpa
Retained Elongation		145 (85%)	%
Hot Deformation at 100°C	UL 1277, UL 1581	4.70	%
Durometer Hardness	ASTM D-2240	92	Shore A
Tear Strength	ASTM D-470	54	lb/in
Cold Bend**	- 25°C	Pass (no cracks)	
Heat Shock**	121°C for 1 hour	Pass (no cracks)	
Limiting Oxygen Index	ASTM D-2863	38	%
Smoke Density (50 mil plaques) Flaming Mode D _m (corrected) Time to 90% D _m	ASTM E-662	59 8.0	D (Max) minutes
Non Flaming Mode D _m (corrected) Time to 90% D _m		223 8.5	D (Max) minutes
Halogen Gas Release	IEC 60754-1	none	
Acid Gas Test	IEC 60754-2	4.75 4.00	pH μS/mm
Smoke Index (50 mil plaques)	NES 711	55.9	
Toxicity Index	NES 713	0.18	
Critical Temperature Index	NES 715	331	°C

* Properties determined from 50 mil (1.27 mm) compression-molded plaques; Specimens pulled at 2"/min. crosshead speed.

** Properties determined from 30 mil (0.76 mm) insulation on 14 AWG wires.

Processing

ThermaGon 9180UV can be processed with different commercially available extruders. For optimum conditions, it is recommended that 9180UV be processed with a low compression and low shear screw. For tubing operations, the draw down ratio should be kept low.

The processing temperature profile may be kept relatively flat from 280 to 330°F (138 to 166°C). Processing above 350°F (177°C) is not recommended because of possible degradation of the flame retardant filler.

For complete recommended processing conditions, see bulletin on ThermaGon 9180UV Processing.

Handling and Storage

Stenidy Industries recommends that ThermaGon 9180UV be stored at ambient temperature (10 to 27°C), tightly sealed in the original container and away from moisture and high humidity.

Drying before processing is not required for most applications. In the event that the compound is exposed to moisture for an extended period, the compound may be dried in a desiccant dryer set at 155°F (68°C) before processing. The compound should not be dried above 180°F (82°C).

Stenidy Industries, Inc. believes the information on this data sheet to be true and accurate. Stenidy Industries makes no warranty or representation regarding the results that may be obtained by the user. In using this material, the processor should establish the conditions most suitable for the processor's production equipment and methods.

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