

ThermaGon 6161N (Natural)

Description

ThermaGon 6161N is a non-halogenated, thermoplastic, low smoke, low corrosive and low toxicity flame-retarded compound designed for use as wire and cable insulation and jacketing. The compound is formulated for outstanding processibility along with good flame-retardant properties and physical properties, including good hot deformation and good tear strength. ThermaGon 6161N can be processed at temperatures up to 220°C, providing faster extrusion throughput for faster wire line speeds. This compound can be used for cables rated at 75°C and 90°C. Supplied as natural pellets, ThermaGon 6161N can be colored with standard color concentrates based on EVA or PE resins.

ThermaGon 6161N 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	1.59	g/cm ³
Tensile Strength at Break *	ASTM D-638	1900 13.1	psi MPa
Elongation at Break *	ASTM D-638	160	%
Heat Aging *			
Retained Tensile at Break Aged 168 hours @ 121°C	ASTM D-638	2300 (121%) 15.9 (121%)	psi MPa
Retained Elongation at Break Aged 168 hours @ 121°C		130 (81%)	%
Cold Bend**	- 25°C	Pass (no cracks)	
Heat Shock**	121°C for 1 hour	Pass (no cracks)	
Fluid Resistance *			
ASTM #2 Oil, 4 hr. @ 70°C Retained Tensile		1650 (87%) 11.4 (87%)	psi Mpa
Retained Elongation		175 (109%)	%
Hot Deformation at 100°C	UL 1277, UL 1581	4.9	%
Durometer Hardness	ASTM D-2240	91	Shore A
Tear Strength	ASTM D-470	73	lb/in

* 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.

Typical Properties (cont.)

Property	Test Method	Value	Unit
Limiting Oxygen Index	ASTM D-2863	38	%
Smoke Density (50 mil plaques)	ASTM E-662		
Flaming Mode			
D _m (corrected)		41	D (Max)
Time to 90% D _m		8.4	minutes
Non Flaming Mode			
D _m (corrected)		222	D (Max)
Time to 90% D _m		8.9	minutes
Halogen Gas Release	IEC 60754-1	none	
Acid Gas Test	IEC 60754-2	5.60 4.00	pH μS/mm
Smoke Index (50 mil plaques)	NES 711	39	
Toxicity Index	NES 713	0.04	
Critical Temperature Index	NES 715	347	°C

Processing

ThermaGon 6161N demonstrates outstanding processibility compared to similar non-halogenated flame-retardant polyolefins. The compound can be processed at temperatures up to 220°C with commercially available extruders and can be run on wire lines using standard polyolefin extrusion equipment. For optimum conditions and to achieve maximum wire and cable production rates, 6161N may 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 356 to 401°F (180 to 205°C). Processing above 428°F (220°C) is not recommended because of possible degradation of resin and loss of physical properties.

For complete recommended processing conditions, see bulletin on ThermaGon 6161N processing.

Handling and Storage

Stenidy Industries recommends that ThermaGon 6161N 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.

Stenidy Industries, Inc.
10305 Cottonwood Court
Zionsville, Indiana 46077
USA

www.stenidy.com
Telephone 317-873-5343

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