

ThermaGon 9100N (Natural)

Description

ThermaGon 9100N 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. This compound is especially recommended for thin wall applications requiring 75°C rating. ThermaGon 9100N is supplied as natural pellets.

ThermaGon 9100N 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 1655 Standard for Community-Antenna Television Cables and the UL 1666 Riser Cable Flame Test, depending on the cable construction.

Typical Properties

Property	Test Method	Value	Unit
Density	ASTM D-1505	1.52	g/cm ³
Tensile Strength at Break *	ASTM D-638	2000 13.9	psi MPa
Elongation at Break *	ASTM D-638	165	%
Heat Aging *			
Retained Tensile at Break	ASTM D-638	2120 (106%)	psi
Aged 168 hours @ 100°C		14.6 (106%)	MPa
Retained Elongation at Break			
Aged 168 hours @ 100°C		135 (82%)	%
Durometer Hardness	ASTM D-2240	92	Shore A
Tear Strength	ASTM D-470	62	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	33	%
Smoke Density (50 mil plaques)	ASTM E-662		
Flaming Mode			
D _m (corrected)		79	D (Max)
Time to 90% D _m		7.4	minutes
Non Flaming Mode			
D _m (corrected)		232	D (Max)
Time to 90% D _m		8.0	minutes

* 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
Halogen Gas Release	IEC 60754-1	none	
Acid Gas Test	IEC 60754-2	5.40 3.00	pH $\mu\text{S}/\text{mm}$
Smoke Index (50 mil plaques)	NES 711	67	
Toxicity Index	NES 713	0.15	
Critical Temperature Index	NES 715	309	$^{\circ}\text{C}$

Processing

ThermaGon 9100N demonstrates outstanding processibility compared to similar non-halogenated flame-retardant polyolefins. The compound can be processed with different commercially available extruders. For optimum conditions and to achieve maximum wire and cable production rates, it is recommended that 9100N 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 9100N processing.

Handling and Storage

Stenidy Industries recommends that ThermaGon 9100N 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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