

Product: GenNex® 59N
Gendon Code: 3301



Revision Date: Dec 17, 2019

GenNex® 59N is a peroxide crosslinked, Low Smoke Zero Halogen (LSZH) primary insulation compound designed to meet the requirements of UL44 for RHH/RHW-2 for both 600V and 2 kV constructions. The GenNex® DS3350 has been designed to process easily on standard wire and cable equipment and provide an excellent balance of physical, electrical and flame performance to the finished cable.

Key Features:

- High flame retardancy
- Good Processibility
- Colourable
- Excellent Wet Electrical properties
- No Heavy Metals or Halogens
- RoHS and REACH compliant

Physical Properties:

Density:	1.50 g/cm ³
Tensile:	1700 psi (typical)
Elongation:	170% (typical)
Durometer:	95 Shore A
Cold Bend (14 awg sample):	
• 4 hrs. at -25 °C	Pass
• 4 hrs. at -40 °C	Pass

Electrical Properties:

Capacitance & Relative Permittivity @ 90 °C		
• SIC (24h)	3.63	(UL2556)
• Capacitance Increase, 1-14 days	1.67%	
• Capacitance Increase, 7-14 days	0.38%	
• Stability Factor	<1	
Long Term Insulation Resistance in Water @ 90 °C	Pass	(UL2556)
Insulation Resistance Value after immersion in water @90 °C		
• 52 weeks (min. value >5 MΩ-1000 feet)	Pass	(UL2556)
• 104 weeks(min. value >5 MΩ-1000 feet)	Pass	

Combustion Properties:

Limited Oxygen Index (LOI):	38%	
Acid Gas:	0.2%	
Vertical Flame Testing:		
• IEEE 1202 Flame (14 awg, 30 mil wall)	Pass	(UL1685)
• Limited Smoke	Pass	

Heat Aging:

	<u>7d@121°C</u>
Tensile Retention	110%
Elongation Retention	94%

Fluid Resistance:

	<u>IRM 902 - 96h@100°C</u>	<u>IRM 902- 60d@75°C</u>
Tensile Retention	65%	67%
Elongation Retention	137%	138%

Suggested Running Conditions:

Extruder L/D:	15:1 or 20:1	Comp. Ratio:	1.25:1	Screen Pack:	20 Mesh or none
Screw Type:	Single Flight metering, without mixing section				
Feed Zone:	190°F	Center Zone:	210°F	Head/Die:	230°F
Screw Cooling:	165°F	Die Cooling:	Recommended		
Gradient Cooling:	Not recommended	Color Concentrate:	EVA Binder preferred		

Processing Techniques:

GenNex® 59N primary insulation compound has been designed to process easily on standard extruders used in the production of wire and cable. These materials are designed to process similar to elastomeric compounds, attaining maximum output levels at relatively low shear rates. Care should be taken to ensure that screw compression ratio levels are below 1.5:1, and flow restrictions in the crosshead are kept to a minimum. Melt temperatures above 260°F (125 °C) should be avoided.

The material can be extruded using either pressure or sleeving techniques. For generation of optimum physical properties, a drawdown ratio of 1.15:1 can be used. Conductor preheating is recommended, with a suggested temperature of 150°F(65°C).

GenNex DS3350 can be coloured in line, however for maximum resistance to flame it is recommended the material be supplied pre-pigmented to maximize both colour consistency and flame performance.

All material are supplied as free flowing pellets, packaged in sealed foil lined boxes and do not need to be dried prior to use. It is recommended that the foil liners be re-sealed after use to prevent outside contamination or water absorption during storage. If the material has been exposed to high humidity environment, or the foil liner has not been sealed, it is recommended that the material be dried for a minimum of 4 hours at 140°F(60°C) in a standard desiccant style dryer prior to use.
