

Product: Genflam® XLPO MIL
Gendon Code: 4504 (Black)
4506 (Red)



Revision Date: February 7, 2020

Genflam® XLPO MIL Series are radiation crosslinked jacket materials designed to provide the wire and cable industry with a low smoke non halogenated jacketing compound that combines excellent physical properties with ease of processing in a Radiation Curable Sheath. The Genflam XLPO-MIL Series maintain a balance of excellent physical properties and ease of processing to aid in maximizing production efficiencies while minimizing cost. The XLPO-MIL Series has been designed specifically to meet the requirements of MIL-24640B and MIL-24643B military shipboard requirements and to process easily on standard wire and cable extruders.

Key Features:

- High flame retardancy
- Excellent processing
- No heavy metals or halogens – UL2885 compliant
- Colorable
- UV stabilized
- RoHS and REACH compliant

Physical Properties:

| | |
|-----------------------------|------------------------------------|
| Density: | 1.51 g/cm ³ |
| Tensile: | 1750 psi (typical) |
| Elongation: | 180% (typical) |
| Tear: | 45 lbf/in (typical) |
| Durometer: | 90 Shore A |
| Low Temp. Brittle Point: | -31°C |
| Deformation, 2000g: | < 100% @ 121°C |
| Hot Creep/Hot Set @ 200 °C: | Elongation <10% Percent Set <5% |

Combustion Properties:

| | |
|---|------|
| Limited Oxygen Index (LOI): | 39% |
| Acid Gas: | 0.2% |
| Smoke Index (NES711): | TBD |
| Cone Calorimeter (ASTM E1354): | |
| • Time to Ignition (s) | TBD |
| • Peak Heat Release (kW/m ²) | TBD |
| • Time to Peak Heat Release (s) | TBD |
| • Total Smoke Release (m ² /m ²) | TBD |

Heat Aging:

| | |
|----------------------|-------------------|
| | <u>7d @ 136°C</u> |
| Tensile Retention | 101% |
| Elongation Retention | 91% |

Fluid Resistance:

| | | | |
|----------------------|----------------------------|---------------------------|-----------------------|
| | <u>IRM 902 – 18h@121°C</u> | <u>Diesel – 24h@100°C</u> | <u>IPA – 24h@23°C</u> |
| Tensile Retention | 71% | 57% | 97% |
| Elongation Retention | 62% | 66% | 101% |

Weathering:

| | <u>720 Hours under QUV Testing</u> |
|----------------------|------------------------------------|
| Tensile Retention | TBD% |
| Elongation Retention | TBD% |

Suggested Running Conditions:

| | | | | | |
|-------------------|--|--------------------|----------------------|--------------|------------|
| Extruder L/D: | 15:1 or 20:1 | Comp. Ratio: | 1.25:1 | Screen Pack: | 20/40 Mesh |
| Screw Type: | Single Flight metering, without mixing section | | | | |
| Feed Zone: | 190°F | Center Zone: | 190-200°F | Head/Die: | 220°F |
| Screw Cooling: | 165°F | Die Cooling: | Not recommended | | |
| Gradient Cooling: | Not recommended | Color Concentrate: | EVA Binder preferred | | |

Processing Techniques:

The Genflam XLPO-MIL Series has been designed to process easily on standard extruders used in the production of wire and cable products. The material has been 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 higher than 280 °F (140 °C) should be avoided.

The material can be extruded using either pressure or sleeving techniques. For maximum physical properties, tooling utilizing a slight draw down ratio (1.15 to 1) can be used. Typical dosage levels will depend on the overall cable construction, but are generally in the 14-18 Mrad range.

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