Solvay Specialty Polymers Halar® 558 Polyethylene, Chlorotrifluoroethylene (ECTFE) (Unverified Data**)<

Category : Polymer , Thermoplastic , Fluoropolymer , ETFE/ECTFE , ECTFE Fluoropolymer

Material Notes:

Halar 558 fluoropolymer is a resin grade for foam extrusion applications, including primary insulations, coaxial cable cores, cross-webs, fire alarm cable, jackets, and foam tubing. Like other grades of Halar resin, this grade of resin offers broad use temperature capability, from cryogenic temperatures to 150°C, and excellent chemical resistance to a wide variety of acids, bases and organic solvents. Cables incorporating Halar 558 have met the fire performance requirements called out in NFPA 90a ("Standard for Air-Conditioning and Ventilating Systems"). To meet these requirements they must pass NFPA 262 Standard Method of Test for Flame Travel and Smoke of Wire and Cables. In addition Halar 558 resin has excellent mechanical properties even in thin walls. The resin melts at 242°C and has predominantly 1:1 alternating units of ethylene and chlorotrifluoroethylene in its polymer chains. Halar ECTFE can be machined on most standard metal working machines. Since heat may be generated due to the material's low thermal conductivity, coolants may be advisable to prevent softening of the part during machining.Additional Information: Color Master Batches - In common with all other grades of Halar resins, Halar 558 can be easily pigmented with commercially available color concentrates. When coloring primary insulation with color concentrates it is highly recommended that the percentage used less than 1% by weight. This is due to the fact that color concentrates will affect the electrical properties of the primary insulation. Safe Handling and Use - Processing of Halar 558 fluoropolymer at temperatures above 572°F (300°C) is not recommended. Thermal degradation can occur at significant rates. When degradation occurs Halar 558 liberated hydrochloric acid (HCL) and hydrofluoric acid (HF) which are irritating, corrosive, and toxic gases at relatively low concentrations. Please refer to the Safe Handling of Fluoropolymer Resins published by the Society of Plastics Industry. - To avoid inhalation of decomposition products, it is recommended that adequate local ventilation in the form of hoods or flexible duct be utilized to remove extrusion fumes. If handled inappropriately Halar 558 may release harmful toxic chemicals.Extrusion Notes: Halar 558 resin is a completely pre-compounded fluoropolymer which contains a nucleating agent, a chemical blowing agent that decomposes when the resin is extruded and a processing aid. There is no need to inject nitrogen gas into the system. The closed cell voids may be controlled from 0-70% by adjusting processing conditions such as melt temperature, head pressure and quench rates. If it is desired to reduce void content through reduction of blowing agent Halar 558 may be blended with Halar 500. Halar 558 has been processed successfully with a number of different screw designs including a standard fluoropolymer design, with or without a pineapple mixing head including 3:1 compression ratio with 12/5/9 flights of feed/transition/compression respectively. Specific screws to avoid are rapid (1-2 flight) transition and Maddox mixing head designs. Equipment/Tooling Recommendations - Extruder Size: 1in to 2.5in - Extruder L/D: 24:1 - Screens: 40 / 60 - Crosshead Type: Fixed or Adjustable - Cone Length: 0.25in to 0.75in - Line Speed: Up to 1700 fpm - Tooling Set: Pressure - Blow Up Ratio: 1.75 to 2.75Information provided by Solvay Specialty Polymers.

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http://www.lookpolymers.com/polymer_Solvay-Specialty-Polymers-Halar-558-Polyethylene-Chlorotrifluoroethylene-ECTFE-nbspUnverified-DataIt.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.68 g/cc	1.68 g/cc	ASTM D792
Water Absorption at Saturation	<= 0.10 %	<= 0.10 %	ASTM D570
Melt Flow	15 - 20 g/10 min	15 - 20 g/10 min	ASTM D3275

Thermal Properties	Metric	English	Comments
Melting Point	242 °C	468 °F	DSC
Flammability, UL94	V-0	V-0	UL 94
Oxygen Index	52 % @Thickness 1.60 mm	52 % @Thickness 0.0630 in	ASTM D2863

Processing Properties	Metric	English	Comments
Processing Temperature	252 °C	486 °F	Flange 1
	252 °C	486 °F	Flange 2
	254 °C	489 °F	Crosshead Temperature
Zone 1	243 °C	469 °F	
Zone 2	249 °C	480 °F	
Zone 3	263 °C	505 °F	
Zone 4	280 °C	536 °F	
Die Temperature	246 °C	475 °F	Die Holder Temperature
	274 °C	525 °F	

Descriptive Properties	Value	Comments
Additive	Blowing Agent	
	Nucleating Agent	
	Processing Aid	
Agency Ratings	NFPA Code 90a	
	UL 444	
Availability	Africa & Middle East	
	Asia Pacific	
	Europe	
	North America	
	South America	
Features	Acid Resistant	

Descriptive Properties	Value	Comments
	Base Resistant	
	Good Chemical Resistance	
	Nucleated	
	Solvent Resistant	
Forms	Pellets	
Generic	ECTFE	
Processing Method	Foam Extrusion	
Uses	Cable Jacketing	
	Electronic Insulation	
	Foam	
	Tubing	

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