Polyethylene Chlorotrifluoroethylene (ECTFE or Halar®)

Reference Information supplied by our sources: HALAR is a registered trademark of Solvay Solexis.

HALAR

TECHNICAL DESCRIPTION

Halar® is a high molecular weight crystalline thermoplastic polymer -- Ethylene-ChloroTriFluoro-Ethylene or ECTFE.

GENERAL PROPERTIES

Halar® has excellent corrosion and chemical resistance and performs in many applications up to 300°F (149°C). Made from the toughest of all fluoropolymers, this material has nylon-like durability with excellent mechanical properties and impact strength. In addition, it has extremely low permeability to liquids, gases, and vapors. Halar® ECTFE is resistant to most chemicals (including acids, alkalines, and organic solvents) except hot amines and ketones.

OTHER KEY PROPERTIES

• High purity • Good thermal stability • Good tensile strength • Excellent impact resistance
• Machinable, weldable, and thermoformable

TYPICAL APPLICATIONS

• Solid and Lined Pipe • Fittings • Pump & Valve Components • Filter Housings • Components for Wet Process Stations • Tanks & Tank Linings

TYPICAL PROPERTIES of HALAR®

ASTM or UL test	Property	Halar® ECTFE
	PHYSICAL	
D792	Density (lb/in³) (g/cm³)	0.061 1.68
D570	Water Absorption, 24 hrs (%)	< 0.1
	MECHANICAL	
D638	Tensile Strength (psi)	7,000
D638	Tensile Modulus (psi)	240,000
D638	Tensile Elongation at Break (%)	200
D790	Flexural Strength (psi)	-
D790	Flexural Modulus (psi)	240,000
D695	Compressive Strength (psi)	-
D695	Compressive Modulus (psi)	-
D2240	Hardness, Rockwell	R93
D256	IZOD Notched Impact (ft-lb/in)	No Break

	THERMAL	
D696	Coefficient of Linear Thermal Expansion (x 10^{-5} in./in./°F)	5.6
D648	Heat Deflection Temp (°F / °C) at 264 psi	240 / 115
D3418	Melting Temp (°F / °C)	460 / 238
-	Max Operating Temp (°F / °C)	300 / 149
C177	Thermal Conductivity (BTU-in/ft²-hr-°F) (x 10^{-4} cal/cm-sec-°C)	1.09 3.75
UL94	Flammability Rating	V-O
	ELECTRICAL	
D149	Dielectric Strength (V/mil) short time, 1/8" thick	500
D150	Dielectric Constant at 1 MHz	2.5
D150	Dissipation Factor at 1 MHz	-
D257	Volume Resistivity (ohm-cm)at 50% RH	10^{15}

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets.
All values at 73°F (23°C) unless otherwise noted.

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