HALAR® FILM

HALAR® thin gauge films
Data Sheet

Halar® ECTFE is a semi-crystalline and melt-processable fluoropolymer resin manufactured by Solvay Solexis. Because of its chemical structure - a 1:1 alternating copolymer of ethylene and chlorotrifluoroethylene - Halar® ECTFE offers a unique combination of properties.

Ajedium's Halar® film is a strong, hard, tough, abrasion resistant film that retains its useful properties over a broad range of temperatures. Its low-temperature properties, especially those related to impact, are particularly outstanding. Halar® ECTFE films also have good tensile, flexural and wear resistant properties.

In addition, Halar® ECTFE films have demonstrated excellent weathering properties and are extremely resistant to UV radiation and common industrial or environmental pollutants.

Halar® film is an excellent barrier to water vapor in a wide range of temperatures. This lower permeability is a key advantage in applications where protection from water as well as oxygen or other small gaseous molecules is required.

Halar® ECTFE films exhibit high bulk and surface resistivity, high dielectric strength, low dielectric constant, and moderate dissipation factor. The dissipation factor varies slightly with frequencies above 1 kHz. The dielectric constant of Halar® is stable across broad temperature and frequency ranges.

MANUFACTURING

Halar® ECTFE transparent films are extruded by Ajedium in a wide range of thicknesses, widths and lengths. Surface treated films are also available.

For further information on Halar® films produced by Ajedium Films, a division of Solvay Solexis, Inc. contact your Solvay Solexis representative or go to ***www.ajedium.com****.*

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a division of Solvay Solexis, Inc.

Solvay Solexis

SOLVAY

HALAR® FILM

HALAR® TRANSPARENT THIN GAUGE FILMS TYPICAL PROPERTIES

	Test Method	Typical Values			
		SI Units		US Customary Units	
Physical and Thermal Properties					
Density	ASTM D-1505	1.66-1.70	g/cm^3	132-135	lb/ft^3
Thickness Range		25-200	µm	1-8	Mil
Melting Point	ASTM D-3418	240-244	°C	464-471	°F
Thermal Conductivity @ 40 °C (104 °F)	ASTM C-177	0.15	W/(m·K)	0.9	$BTU·in/(h·ft^2·°F)$
Water Vapor Transmission Rate @ 38°C (100°F) and 90% RH For a 50 µm film Cast film	ASTM F-1249	1.6	$g/m^2·d$		
Mechanical Properties		***MD***	***TD***	***MD***	***TD***
Stress at Break @ 23 °C (73 °F)	ASTM D 882	53 MPa	50 MPa	7700 psi	7300 psi
Elongation at Break @ 23 °C (73 °F)	ASTM D 882	280 %	280 %	280 %	280 %
Modulus @ 23 °C (73 °F)	ASTM D 882	1550 MPa	1500 MPa	225 kpsi	218 kpsi
Shrinkage		***MD***	***TD***	***MD***	***TD***
Free shrink % @ 200°C	30 min in oven	4.4 %	0 %	4.4 %	0 %
Electrical Properties					
Surface Resistivity at 23°C	ASTM D 257	$> 10^{17}$	Ohm	$> 10^{17}$	Ohm
Volume Resistivity	ASTM D 257				
@ 23°C – 73°F		$6·10^{16}$	Ohm·cm	$6·10^{16}$	Ohm·cm
@ 80°C – 176°F		$4·10^{15}$	Ohm·cm	$4·10^{15}$	Ohm·cm
@ 130°C – 266°F		$2·10^{13}$	Ohm·cm	$2·10^{13}$	Ohm·cm
Dielectric Constant at 1 kHz	ASTM D 150				
@ 23°C - 73°F		2.5		2.5	
@ 100°C - 212°F		2.6		2.6	
Dissipation factor at 1 kHz	ASTM D 150				
@ 23°C - 73°F		$1·10^{-3}$		$1·10^{-3}$	
@ 100 °C – 212°F		$2·10^{-3}$		$2·10^{-3}$	

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