Parylene C

Polyparaxylylene

Specialty Coating Systems (SCS)

Message:

Parylene is the name for members of a unique polymer series. The basic member of the series, Parylene N, is poly(para-Xylylene), a completely linear, highly crystalline material.
Parylene C, the second commercially available member of the series, is produced from the same raw material (dimer) as Parylene N, modified only by the substitution of a chlorine atom for one of the aromatic hydrogens. Parylene C has a useful combination of electrical and physical properties plus a very low permeability to moisture and corrosive gases.

General Information	
Features	Biocompatible
	Good Chemical Resistance
	Highly Crystalline
	Linear Polymer Structure
	Radiation (Gamma) Resistant
Uses	Aerospace Applications
	Automotive Applications
	Coating Applications
	Electrical/Electronic Applications
	Medical/Healthcare Applications
	Military Applications
	Printed Circuit Boards
Agency Ratings	ISO 10993
	MIL I-46058C
	USP Class VI
RoHS Compliance	RoHS Compliant
Appearance	Clear/Transparent
	Colorless

Physical	Nominal Value	Unit	Test Method
Density	1.29	g/cm³	ASTM D1505
Water Absorption (24 hr)	< 0.10	%	ASTM D570
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness (R-Scale)	80		ASTM D785
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Coefficient of Friction			ASTM D1894
Dynamic	0.29		

Static	0.29		
Films	**Nominal Value**	**Unit**	**Test Method**
Secant Modulus - MD	2760	MPa	ASTM D882
Tensile Strength - MD			ASTM D882
Yield	55.2	MPa	
Break	68.9	MPa	
Tensile Elongation - MD			ASTM D882
Yield	2.9	%	
Break	< 200	%	
Oxygen Permeability (25°C)	2.8	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Water Vapor Transmission Rate (37°C, 90% RH)	0.080	$g \cdot mm/m^2/atm/24\ hr$	ASTM F1249
Carbon Dioxide Permeability (25°C)	3.0	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Nitrogen Permeability (25°C)	0.40	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Service Temperature - Short-Term	100	°C	
Hydrogen (H2) Gas Permeation (25°C)	43	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Thermal	**Nominal Value**	**Unit**	**Test Method**
Continuous Use Temperature	80.0	°C	
Melting Temperature	290	°C	DSC
CLTE - Flow (25°C)	3.5E-5	cm/cm/°C	TMA
Specific Heat (20°C)	712	J/kg/°C	
Thermal Conductivity (25°C)	0.084	W/m/K	ASTM C177
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity [1]	1.0E+14	ohms	ASTM D257
Volume Resistivity [2] (23°C)	8.8E+16	ohms·cm	ASTM D257
Dielectric Strength	220	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	3.15		
1 kHz	3.10		
1 MHz	2.95		
Dissipation Factor			ASTM D150
60 Hz	0.020		
1 kHz	0.019		
1 MHz	0.013		
Optical	**Nominal Value**		
Refractive Index [3]	1.639		
NOTE			
1.	23°C, 50% RH		
2.	50% RH		
3.	Abbe Refractometer		

Recommended distributors for this material

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