Parylene D

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 D, the third available member of the series, is produced from the same raw material as the Parylene N dimer, modified by the substitution of chlorine atoms for two of the aromatic hydrogens. Parylene D is similar in properties to Parylene C with the added ability to withstand slightly higher use temperatures.

General Information	
Features	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	MIL I-46058C
RoHS Compliance	RoHS Compliant
Appearance	Clear/Transparent
	Colorless

Physical	Nominal Value	Unit	Test Method
Density	1.42	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	0.31		
Static	0.33		
Films	**Nominal Value**	**Unit**	**Test Method**
Secant Modulus - MD	2620	MPa	ASTM D882
Tensile Strength - MD			ASTM D882

Yield	62.1	MPa	
Break	75.8	MPa	
Tensile Elongation - MD			ASTM D882
Yield	3.0	%	
Break	< 200	%	
Oxygen Permeability (25°C)	13	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Water Vapor Transmission Rate (37°C, 90% RH)	0.090	$g \cdot mm/m^2/atm/24\ hr$	ASTM E96
Carbon Dioxide Permeability (25°C)	5.1	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Nitrogen Permeability (25°C)	1.8	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Service Temperature - Short-Term	120	°C	
Hydrogen (H2) Gas Permeation (25°C)	95	$cm^3 \cdot mm/m^2/atm/24\ hr$	ASTM D1434
Thermal	**Nominal Value**	**Unit**	**Test Method**
Continuous Use Temperature	100	°C	
Melting Temperature	380	°C	DSC
CLTE - Flow (25°C)	3.8E-5	cm/cm/°C	TMA
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity [1]	1.0E+16	ohms	ASTM D257
Volume Resistivity [2] (23°C)	1.2E+17	ohms·cm	ASTM D257
Dielectric Strength	220	kV/mm	ASTM D149
Dielectric Constant			ASTM D150
60 Hz	2.84		
1 kHz	2.82		
1 MHz	2.80		
Dissipation Factor			ASTM D150
60 Hz	4.0E-3		
1 kHz	3.0E-3		
1 MHz	2.0E-3		
Optical	**Nominal Value**		
Refractive Index [3]	1.669		
NOTE			
1.	23°C, 50% RH		
2.	50% RH		
3.	Abbe Refractometer		

Recommended distributors for this material

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