

## Parylene Coating Services D Poly (P-Xylylene)

Category : Polymer , Thermoplastic , Poly (P-Xylylene)

### Material Notes:

Monomer is dichloro para-xylylene. Parylene D is recommended where high temperature resistance is needed; it can be used up to 140°C where oxygen is present. Parylene is a generic name for poly-para-xylylene polymers used as conformal coatings in protective applications. The coating process exposes objects to the gas-phase monomer at low pressure. Through vacuum deposition, Parylene condenses on the surface in a polycrystalline fashion, providing a coating that is truly conformal and pinhole free. Compared to liquid processes, the effects of gravity and surface tension are negligible -- so there is no bridging, thin-out, pinholes, puddling, run-off or sagging. And, since the process takes place at room temperature, there is no thermal or mechanical stress on the object. Parylene is physically stable and chemically inert within its usable temperature range. Parylene provides excellent protection from moisture, salt spray, corrosive vapors, solvents, airborne contaminants and other hostile environments. Property data obtained following ASTM methods.

Information provided by Parylene Coating Services, Inc. (PCS)

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Parylene-Coating-Services-D-Poly-P-Xylylene.php](http://www.lookpolymers.com/polymer_Parylene-Coating-Services-D-Poly-P-Xylylene.php)

Physical Properties	Metric	English	Comments
Density	1.418 g/cc	0.05123 lb/in <sup>3</sup>	
Moisture Vapor Transmission	0.0984 cc-mm/m <sup>2</sup> -24hr-atm	0.250 cc-mil/100 in <sup>2</sup> -24hr-atm	37°C; 90% RH
Oxygen Transmission	12.6 cc-mm/m <sup>2</sup> -24hr-atm	32.0 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C
Nitrogen Transmission	1.77 cc-mm/m <sup>2</sup> -24hr-atm	4.50 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C
Carbon Dioxide Transmission	5.12 cc-mm/m <sup>2</sup> -24hr-atm	13.0 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C
Hydrogen Sulfide Transmission	0.571 cc-mm/m <sup>2</sup> -24hr-atm	1.45 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C
Sulfur Dioxide Transmission	1.87 cc-mm/m <sup>2</sup> -24hr-atm	4.75 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C
Chlorine Transmission	0.217 cc-mm/m <sup>2</sup> -24hr-atm	0.550 cc-mil/100 in <sup>2</sup> -24hr-atm	23°C

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	75.8 MPa	11000 psi	
Tensile Strength, Yield	62.1 MPa	9000 psi	
Elongation at Break	10 %	10 %	
Elongation at Yield	3.0 %	3.0 %	

Mechanical Properties	Metric	English	Comments
Coefficient of Friction, Dynamic	0.31	0.31	
Coefficient of Friction, Static	0.33	0.33	

Thermal Properties	Metric	English	Comments
Melting Point	380 °C	716 °F	
Maximum Service Temperature, Air	140 °C	284 °F	

Optical Properties	Metric	English	Comments
Refractive Index	1.669	1.669	
Transmission, Visible	90 %	90 %	Optically clear, but reports do not quantify.

Electrical Properties	Metric	English	Comments
Volume Resistivity	2.00e+16 ohm-cm	2.00e+16 ohm-cm	50% RH
Surface Resistance	5.00e+16 ohm	5.00e+16 ohm	50% RH
Dielectric Constant	2.8	2.8	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	2.84	2.84	
	@Frequency 60 Hz	@Frequency 60 Hz	
	2.95	2.95	
	@Frequency 1000 Hz	@Frequency 1000 Hz	
Dielectric Strength	217 kV/mm	5500 kV/in	Short Time; 1 mil
Dissipation Factor	0.0020	0.0020	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.0030	0.0030	
	@Frequency 1000 Hz	@Frequency 1000 Hz	
	0.0040	0.0040	
	@Frequency 60 Hz	@Frequency 60 Hz	

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