

Parylene Coating Services C Poly (P-Xylylene)

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

Material Notes:

Monomer is monochloro para-xylylene. Parylene C is recommended where excellent barrier protection is needed. It can be used up to 125°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-C-Poly-P-Xylylene.php

Physical Properties	Metric	English	Comments
Density	1.289 g/cc	0.04657 lb/in ³	
Water Absorption	0.060 %	0.060 %	0.029 inches; 24 hrs.
Moisture Vapor Transmission	0.0551 cc-mm/m ² -24hr-atm	0.140 cc-mil/100 in ² -24hr-atm	37°C; 90% RH
Oxygen Transmission	2.80 cc-mm/m ² -24hr-atm	7.10 cc-mil/100 in ² -24hr-atm	23°C
Nitrogen Transmission	0.374 cc-mm/m ² -24hr-atm	0.950 cc-mil/100 in ² -24hr-atm	23°C
Carbon Dioxide Transmission	3.03 cc-mm/m ² -24hr-atm	7.70 cc-mil/100 in ² -24hr-atm	23°C
Hydrogen Sulfide Transmission	5.12 cc-mm/m ² -24hr-atm	13.0 cc-mil/100 in ² -24hr-atm	23°C
Sulfur Dioxide Transmission	4.33 cc-mm/m ² -24hr-atm	11.0 cc-mil/100 in ² -24hr-atm	23°C
Chlorine Transmission	0.138 cc-mm/m ² -24hr-atm	0.350 cc-mil/100 in ² -24hr-atm	23°C

Mechanical Properties	Metric	English	Comments
Tensile Strength, Ultimate	68.9 MPa	10000 psi	
Tensile Strength, Yield	55.2 MPa	8000 psi	
Elongation at Break	200 %	200 %	

Mechanical Properties	Metric	English	Comments
Tensile Modulus	3.20 GPa	464 ksi	
Coefficient of Friction, Dynamic	0.29	0.29	
Coefficient of Friction, Static	0.29	0.29	

Thermal Properties	Metric	English	Comments
CTE, linear	35.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	19.4 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	
	@Temperature 20.0 $^{\circ}\text{C}$	@Temperature 68.0 $^{\circ}\text{F}$	
Thermal Conductivity	0.0820 W/m-K	0.569 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	290 $^{\circ}\text{C}$	554 $^{\circ}\text{F}$	
Maximum Service Temperature, Air	125 $^{\circ}\text{C}$	257 $^{\circ}\text{F}$	Continuous

Optical Properties	Metric	English	Comments
Refractive Index	1.639	1.639	
Transmission, Visible	90 %	90 %	Optically clear, but reports do not quantify.

Electrical Properties	Metric	English	Comments
Volume Resistivity	6.00e+16 ohm-cm	6.00e+16 ohm-cm	50% RH
Surface Resistance	1.00e+15 ohm	1.00e+15 ohm	50% RH
Dielectric Constant	2.95	2.95	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	3.1	3.1	
Dielectric Strength	@Frequency 1000 Hz	@Frequency 1000 Hz	
	3.15	3.15	
	@Frequency 60 Hz	@Frequency 60 Hz	
Dissipation Factor	0.013	0.013	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	
	0.019	0.019	
	@Frequency 1000 Hz	@Frequency 1000 Hz	

Electrical Properties	0.020 Metric	0.020 English	Comments
	@Frequency 60 Hz	@Frequency 60 Hz	

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