

Mitsubishi Chemical Advanced Materials Nylatron® MD PA6, Metal-detectable Nylon (ASTM Product Data Sheet)

Categories: Polymer; Thermoplastic; Nylon (Polyamide PA); Nylon 6 (PA6)

- Material Notes:**
- 1 Broadest size range availability
 - 1 Good mechanical and electrical properties
 - 1 Ideal balance of strength and toughness
 - 1 Cast as finished parts and near net shapes (nylon 6)

Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.25 g/cc	1.25 g/cc	ASTM D792
Water Absorption	0.60 %	0.60 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	7.0 %	7.0 %	Immersion; ASTM D570(2)

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	85	85	ASTM D785
Hardness, Rockwell R	119	119	ASTM D785
Hardness, Shore D	85	85	ASTM D2240
Tensile Strength	79.3 MPa	11500 psi	ASTM D638
Tensile Strength at 65°C (150°F)	41.4 MPa	6000 psi	ASTM D638
Elongation at Break	15 %	15 %	ASTM D638
Tensile Modulus	4.14 GPa	600 ksi	ASTM D638
Flexural Strength	117 MPa	17000 psi	ASTM D790
Flexural Modulus	3.45 GPa	500 ksi	ASTM D790
Compressive Strength	96.5 MPa	14000 psi	10% Def.; ASTM D695
Compressive Modulus	2.21 GPa	320 ksi	ASTM D695
Izod Impact, Notched	0.320 J/cm	0.600 ft-lb/in	ASTM D256
Coefficient of Friction, Dynamic	0.30	0.30	Dry vs. Steel; QTM 55007
K (wear) Factor	806 x 10 ⁻⁶ mm ³ /N-M	400 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55007
Limiting Pressure Velocity	0.175 MPa-m/sec	5000 psi-ft/min	4:1 safety factor applied; QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	EOS/ESD S11.11

Thermal Properties	Metric	English	Comments
CTE, linear	90.0 µm/m-°C @Temperature -40.0 - 149 °C	50.0 µin/in-°F @Temperature -40.0 - 300 °F	ASTM E831
Melting Point	216 °C	420 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	93.3 °C	200 °F	Long Term
Deflection Temperature at 1.8 MPa (264 psi)	93.3 °C	200 °F	ASTM D648
Flammability, UL94	HB @Thickness 3.17 mm	HB @Thickness 0.125 in	Estimated Rating

Compliance Properties	Metric	English	Comments
FDA	Yes	Yes	
USP Class VI	No	No	

Chemical Resistance Properties	Metric	English	Comments
Acids, Strong (pH 1-3)	Unacceptable	Unacceptable	
Acids, Weak	Limited	Limited	
Alcohols	Limited	Limited	
Alkalies, Strong (pH 11-14)	Unacceptable	Unacceptable	
Alkalies, Weak	Limited	Limited	
Chlorinated Solvents	Limited	Limited	
Conductive / Static Dissipative	No	No	
Continuous Sunlight	Limited	Limited	
Hot Water / Steam	Limited	Limited	
Hydrocarbons - Aliphatic	Acceptable	Acceptable	
Hydrocarbons - Aromatic	Acceptable	Acceptable	
Inorganic Salt Solutions	Acceptable	Acceptable	
Ketones, Esters	Acceptable	Acceptable	



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