

Mitsubishi Chemical Advanced Materials Nylatron® 4.6 (ASTM Product Data Sheet)
Categories: Polymer; Thermoplastic; Nylon (Polyamide PA); Nylon 46 (PA46); Nylon 46, Unreinforced

Material Notes: Quadrant Engineering Plastic Products is now Mitsubishi Chemical Advanced Materials.

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Water Absorption	0.60 %	0.60 %	Immersion, 24hr; ASTM D570
Water Absorption at Saturation	7.0 %	7.0 %	ASTM D 570

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	97	97	ASTM D785
Tensile Strength	103 MPa	15000 psi	ASTM D638
Tensile Strength at 150°C (300°F)	1.72 MPa	250 psi	ASTM D638
Tensile Strength at 65°C (150°F)	41.4 MPa	6000 psi	ASTM D638
Elongation at Break	25 %	25 %	ASTM D638
Tensile Modulus	3.24 GPa	470 ksi	ASTM D638
Flexural Strength	117 MPa	17000 psi	ASTM D790
Flexural Modulus	3.10 GPa	450 ksi	ASTM D790
Compressive Strength	110 MPa	16000 psi	10% Def.; ASTM D695
Compressive Modulus	2.24 GPa	325 ksi	ASTM D695
Izod Impact, Notched	0.320 J/cm	0.600 ft-lb/in	ASTM D256
K (wear) Factor	201 x 10 ⁻⁸ mm ³ /N-M	100 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55100
Limiting Pressure Velocity	0.0946 MPa-m/sec	2700 psi-ft/min	QTM 55007

Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	ASTM D257

Thermal Properties	Metric	English	Comments
CTE, linear	90.0 µm/m-°C @Temperature -40.0 - 150 °C	50.0 µin/in-°F @Temperature -40.0 - 302 °F	ASTM E831
Thermal Conductivity	0.303 W/m-K	2.10 BTU-in/hr-ft ² -°F	
Melting Point	290 °C	554 °F	Crystalline, Peak; ASTM D3418
Maximum Service Temperature, Air	149 °C	300 °F	Continuous
Deflection Temperature at 1.8 MPa (264 psi)	160 °C	320 °F	ASTM D648

Compliance Properties	Metric	English	Comments
3A-Dairy	No	No	
Canada AG	No	No	
FDA	No	No	
NSF	No	No	
USDA	No	No	
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	