

Product Data Sheet

Product : Quadrant Polypenco Korea Nylatron® MC 907 NATURAL - PA6, unfilled, cast

Categories : Polymer; Thermoplastic; Nylon ; Nylon 6; Nylon 6 , Cast

Material Notes : Data provided by Polypenco Korea and Quadrant Engineering Plastic Products

Properties	Units	Test Methods	Nylatron® MC 907
Physical Properties			
Specific Gravity	g/cc	ASTM D 792	1.15
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	0.6
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	7.0
Mechanical Properties			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	118
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	85.2
Tensile Modulus	GPa	ASTM D 638	2.87
Elongation at Break	%	ASTM D 638	29
Flexural Yield Strength	MPa	ASTM D 790	103
Flexural Modulus	GPa	ASTM D 790	2.94
Compressive Strength	MPa	10% Def.; ASTM D 695	103
Compressive Modulus	GPa	ASTM D 695	2.76
Shear Strength	MPa	ASTM D 732	75.8
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	0.20
K (wear) Factor	mm ³ /N-M	QTM 55010	201 x 10 ⁻⁸
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	0.105
Izod Impact, Notched	J/m	ASTM D 256	36.0
Electrical Properties			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	≥ 1X10 ¹³
Dielectric Constant	-	ASTM D 150	3.70 @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	19.7

Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	90.0 @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	0.245
Melting point ; Crystalline, Peak	°C	ASTM D 3418	216
Maximum Service Temperature, Air	°C	Long Term	93.3
Deflection Temperature at 1.8 Mpa (264psi)	°C	ASTM D 648	200
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	HB

Compliance Property

Comments

SVHC (Substance of Very High Concern)_REACH	Yes
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Descriptive Properties

Color	Natural
Machinability	1-10, 1=Easier to Machine

Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Limited
Alcohols	Limited
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Limited
Chlorinated Solvent	Limited
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Acceptable
Hydrocarbons – Aromatic	Acceptable
Inorganic Salt Solution	Acceptable
Ketones, Esters	Acceptable

Miscellaneous Properties

Targeted Usage	Load + Bearing
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Product Data Sheet

Product : Quadrant Polypenco Korea Nylatron® MC 907 BLACK - PA6, unfilled, cast

Categories : Polymer; Thermoplastic; Nylon ; Nylon 6; Nylon 6 , Cast

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Properties	Units	Test Methods	Nylatron® MC 907
Physical Properties			
Specific Gravity	g/cc	ASTM D 792	1.15
Water Absorption, Immersion, 24hr	%	ASTM D 570(2)	0.6
Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	7.0
Mechanical Properties			
Rockwell Hardness, M	M scale	ASTM D 785	-
Rockwell Hardness, R	R scale	ASTM D 785	118
Hardness, Shore D	D	ASTM D 2240	-
Tensile Strength	MPa	ASTM D 638	85.2
Tensile Modulus	GPa	ASTM D 638	2.87
Elongation at Break	%	ASTM D 638	29
Flexural Yield Strength	MPa	ASTM D 790	103
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Compressive Strength	MPa	10% Def.; ASTM D 695	103
Compressive Modulus	GPa	ASTM D 695	2.76
Shear Strength	MPa	ASTM D 732	75.8
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	0.20
K (wear) Factor	mm ³ /N-M	QTM 55010	201 x 10 ⁻⁸
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	0.105
Izod Impact, Notched	J/m	ASTM D 256	36.0
Electrical Properties			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	≥ 1X10 ¹³
Dielectric Constant	-	ASTM D 150	3.70 @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	19.7

Thermal Properties

Coefficient of Thermal Expansion; CTE, linear	µm/m-°C	ASTM E 831	90.0 @Temperature -40.0 - 149 °C
Thermal Conductivity	W/m-K	ASTM F 433	0.245
Melting point ; Crystalline, Peak	°C	ASTM D 3418	216
Maximum Service Temperature, Air	°C	Long Term	93.3
Deflection Temperature at 1.8 Mpa (264psi)	°C	ASTM D 648	200
Flammability, UL94 ; 1/8inch(Estimated Rating)	-	-	HB

Compliance Property

Comments

SVHC (Substance of Very High Concern)_REACH	Yes
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Descriptive Properties

Color	BLACK
Machinability	1-10, 1=Easier to Machine

Chemical Resistance Properties

Acid, Strong (pH1-3)	Unacceptable
Acids, Weak	Limited
Alcohols	Limited
Alkalies, Weak	Unacceptable
Alkalies, Strong (pH 11-14)	Limited
Chlorinated Solvent	Limited
Conductive / Static Dissipative	No
Continuous Sunlight	Limited
Hot Water / Steam	Limited
Hydrocarbons – Aliphatic	Acceptable
Hydrocarbons – Aromatic	Acceptable
Inorganic Salt Solution	Acceptable
Ketones, Esters	Acceptable

Miscellaneous Properties

Targeted Usage	Load + Bearing
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Water Absorption at Saturation, Immersion	%	ASTM D 570(2)	7.0
Mechanical Properties			
Rockwell Hardness, M	M scale	ASTM D 785	85
Rockwell Hardness, R	R scale	ASTM D 785	115
Hardness, Shore D	D	ASTM D 2240	85
Tensile Strength	MPa	ASTM D 638	82.7
Tensile Modulus	GPa	ASTM D 638	2.76
Elongation at Break	%	ASTM D 638	20
Flexural Yield Strength	MPa	ASTM D 790	110
Flexural Modulus	GPa	ASTM D 790	3.45
Compressive Strength	MPa	10% Def.; ASTM D 695	103
Compressive Modulus	GPa	ASTM D 695	2.76
Shear Strength	MPa	ASTM D 732	75.8
Coefficient of Friction; Dry vs. Steel	-	QTM 55007	0.20
K (wear) Factor	mm ³ /N-M	QTM 55010	201 x 10 ⁻⁸
Limiting Pressure Velocity; 4:1 safety factor	MPa-m/sec	QTM 55007	0.105
Izod Impact, Notched	J/m	ASTM D 256	39.2
Electrical Properties			
Surface Resistivity per Square	Ω	EOS/ESD S11.11	≥ 1X10 ¹³
Dielectric Constant	-	ASTM D 150	3.70 @Frequency 1e+6 Hz
Dielectric Strength; Short term	kV/mm	ASTM D 149	19.7

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