



PROFESSIONAL PLASTICS, INC.

Leading Global Supplier of Engineered Plastic Shapes

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Nylatron® GSM Nylon, Type 6, MoS2 filled, cast

Nylatron GSM cast nylon contains finely divided particles of molybdenum disulfide to enhance its load bearing capabilities while maintaining the impact resistance inherent to nylon. It is the most commonly used grade for gears, sheaves, sprockets and custom parts. It is gray-black in color.

Physical Properties	Metric	English	Comments
Specific Gravity	1.16 g/cc	0.0419 lb/in ³	ASTM D792
Water Absorption	0.6 %	0.6 %	Immersion, 24hr; ASTM D570(2)
Water Absorption at Saturation	7 %	7 %	Immersion; ASTM D570(2)
Mechanical Properties			
Hardness, Rockwell M	80	80	ASTM D785
Hardness, Rockwell R	110	110	ASTM D785
Hardness, Shore D	85	85	ASTM D2240
Tensile Strength, Ultimate	75.8 MPa	11000 psi	ASTM D638
Elongation at Break	30 %	30 %	ASTM D638
Tensile Modulus	2.76 GPa	400 ksi	ASTM D638
Flexural Modulus	3.45 GPa	500 ksi	ASTM D790
Flexural Yield Strength	110 MPa	16000 psi	ASTM D790
Compressive Strength	96.5 MPa	14000 psi	10% Def.; ASTM D695
Compressive Modulus	2.76 GPa	400 ksi	ASTM D695
Shear Strength	72.4 MPa	10500 psi	ASTM D732
Coefficient of Friction	0.2	0.2	Dry vs. Steel; QTM55007
K (wear) Factor	181 x 10 ⁻⁸ mm ³ /N-M	90 x 10 ⁻¹⁰ in ³ -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.105 MPa-m/sec	3000 psi-ft/min	4:1 safety factor; QTM 55007
Izod Impact, Notched	0.267 J/cm	0.5 ft-lb/in	ASTM D256 Type A
Electrical Properties			
Surface Resistivity per Square	Min 1e+013 ohm	Min 1e+013 ohm	EOS/ESD S11.11
Dielectric Constant	3.7	3.7	1MHz; ASTM D150
Dielectric Strength	15.7 kV/mm	400 V/mil	Short Term; ASTM D149

Thermal Properties

CTE, linear 68°F	90 µm/m-°C	50 µin/in-°F	(-40°F to 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 (Estimated Rating)	HB	HB	1/8 inch

Qualitative Processing Properties

Compliance - FDA	Not Compliant	
Machinability	1	1-10, 1=Easier to Machine
Service in Alcohols	Limited	
Service in Aliphatic Hydrocarbons	Acceptable	
Service in Aromatic Hydrocarbons	Acceptable	
Service in Chlorinated Solvents	Limited	
Service in Ethers	Acceptable	
Service in Ketones	Acceptable	
Service in Strong Acids	Unacceptable	
Service in Strong Alkalies	Unacceptable	
Service in Sunlight	Limited	
Service in Weak Acids	Limited	
Service in Weak Alkalies	Limited	

All statements, technical information and recommendations contained in this database are presented in good faith, based upon tests believed to be reliable and practical field experience. The reader is cautioned, however, that Quadrant EPP and Professional Plastics, Inc. cannot guarantee the accuracy or completeness of this information, and it is the customer's responsibility to determine the suitability of Quadrant EPP's products in any given application.

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