

## Quadrant EPP Nylatron® NSM PA6, solid lubricant filled, cast (ASTM Product Data Sheet)

**Categories:** Polymer; Thermoplastic; Nylon; Nylon 6; Nylon 6, Glass Fiber/Solid Lube Filled

**Material Notes:** Nylatron NSM is the premium bearing and wear nylon product available today. Solid lubricant additives impart self-lubricating, high pressure/velocity and superior wear resistance characteristics. This wear resistance is delivered without either start-up or running lubrication making it ideal for bearings, gears and wear pads. It is a proprietary type 6 nylon formulation produced using Quadrant EPP's Monocast process. Nylatron NSM was developed specifically for demanding applications where larger size parts are required. In wear applications, Nylatron NSM lasts up to 10 times longer than standard Type 6 nylon.

Data provided by Quadrant Engineering Plastic Products.

- Self lubricating Nylon 6 for superior wear resistance
- Highest wear resistant thermoplastic available
  - k-factor = 12
  - PV = 5 X standard cast nylons
- Extended part life
- Excellent Cost vs. Performance Ratio Value
- Continues to outperform others or other materials time and time again

**Key Words:** Polyamide 6; PA6; PA 6

Physical Properties	Metric	English	Comments
Specific Gravity	1.15 g/cc	1.15 g/cc	ASTM D792
Water Absorption	0.30 %	0.30 %	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	80	80	ASTM D785
Hardness, Rockwell R	110	110	ASTM D785
Hardness, Shore D	85	85	ASTM D2240
Tensile Strength	75.8 MPa	11000 psi	ASTM D638
Elongation at Break	20 %	20 %	ASTM D638
Tensile Modulus	2.83 GPa	410 ksi	ASTM D638
Flexural Strength	110 MPa	16000 psi	ASTM D790
Flexural Modulus	3.28 GPa	475 ksi	ASTM D790
Compressive Strength	96.5 MPa	14000 psi	10% Def.; ASTM D695
Compressive Modulus	2.76 GPa	400 ksi	ASTM D695
Shear Strength	68.9 MPa	10000 psi	ASTM D732
Izod Impact, Notched	0.267 J/cm	0.500 ft-lb/in	ASTM D256 Type A
Coefficient of Friction, Dynamic	0.18	0.18	Dry vs. Steel; QTM55007
K (wear) Factor	24.2 x 10 <sup>-8</sup> mm <sup>3</sup> /N-M	12.0 x 10 <sup>-10</sup> in <sup>3</sup> -min/ft-lb-hr	QTM 55010
Limiting Pressure Velocity	0.525 MPa-m/sec	15000 psi-ft/min	4:1 safety factor; QTM 55007
Electrical Properties	Metric	English	Comments
Surface Resistivity per Square	>= 1.00e+13 ohm	>= 1.00e+13 ohm	EOS/ESD S11.11
Dielectric Strength	15.7 kV/mm	400 kV/in	Short Term; ASTM D149
Thermal Properties	Metric	English	Comments
CTE, linear	99.0 µm/m-°C @Temperature -40.0 - 149 °C	55.0 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	HB	1/8 inch (Estimated Rating)
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

#### Descriptive Properties

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