



PROMANYL 32 EM

Product Description.

Promanyl is a natural color, general purpose nylon 66 resins, They are designed principally for injection molding fabrication. These resins offer a well balanced combination of engineering properties characterized by high strength, rigidity, good toughness, high melt point, good surface lubricity, abrasion resistance, and resistance to many chemicals, solvents, gasoline, and machine and motor oils.

Material Notes:

1.4% Deformation under 14 MPa (2000 psi) load. High productivity molding grade with external and internal lubrication

Typical property data. PROMANYL 32 EM

Physical Properties	Metric	English	Comments
Density	1.14 g/cc	0.0412 lb/in ³	ASTM D792
Water Absorption	1.3 %	1.3 %	24 hours; ASTM D570
Water Absorption at Saturation	8 %	8 %	ASTM D570
Linear Mold Shrinkage	0.015 - 0.02 cm/cm	0.015 - 0.02 in/in	ASTM D955

Mechanical Properties

Hardness, Rockwell M	85	85	ASTM D785
Hardness, Rockwell R	120	120	ASTM D785
Tensile Strength, Yield	83 MPa	12000 psi	83 MPa at room temp. Value at -40°C is 107 MPa.; ASTM D638
Tensile Strength, Yield at Elevated Temperature	62 MPa	8990 psi	ASTM D638; 77°C (170°F)
Elongation at Break	70 %	70 %	at room temp. Value at -40°C is 20%. ASTM D638
Elongation at Break at Elevated Temperature	300 %	300 %	ASTM D638; 77°C (170°F)
Elongation at Yield	10 %	10 %	at room temp. Value at -40°C is 5%. Value at 77°C (170°F) is 30%. ASTM D638
Tensile Modulus	3 GPa	435 ksi	D638
Flexural Modulus	3 GPa	435 ksi	ASTM D790
Flexural Yield Strength	90 MPa	13100 psi	ASTM D790
Compressive Yield Strength	34 MPa	4930 psi	at 1% deformation; ASTM D695
Shear Strength	69 MPa	10000 psi	ASTM D732
Izod Impact, Notched	0.5 J/cm	0.937 ft-lb/in	0.125 (3.2 mm).; ASTM D256
Izod Impact, Notched Low Temp	0.3 J/cm	0.562 ft-lb/in	at -40°C; ASTM D256, 0.125 (3.2 mm).
Tensile Impact Strength	170 kJ/m²	80.9 ft-lb/in ²	Type S specimen; ASTM D1822

Electrical Properties

Electrical Resistivity	6e+015 ohm-cm	6e+015 ohm-cm	ASTM D257
Dielectric Constant	3.1	3.1	1 MHz; ASTM D150
Dielectric Constant, Low Frequency	3.6	3.6	1000 Hz. ASTM D150
Dielectric Constant, Low Frequency	3.7	3.7	100 Hz. ASTM D150
Dielectric Strength	21.3 kV/mm	541 kV/in	Step by step; ASTM D149
Dielectric Strength	22.4 kV/mm	569 kV/in	Short Time; ASTM D149
Dissipation Factor	0.03	0.03	1 MHz; ASTM D150
Dissipation Factor, Low Frequency	0.02	0.02	100 Hz. ASTM D150
Dissipation Factor, Low Frequency	0.02	0.02	1000 Hz. ASTM D150

Thermal Properties

CTE, linear 20°C	81 µm/m-°C	45 µin/in-°F	from -40° to 82°C (-40° to 180°F). ASTM D696
Specific Heat Capacity	1.7 J/g-°C	0.406 BTU/lb-°F	Mfr. internal test
Thermal Conductivity	0.24 W/m-K	1.67 BTU-in/hr-ft ² -°F	Mfr. internal test
Melting Point	260 °C	500 °F	ASTM D789
Maximum Service Temperature, Air	82 °C	180 °F	Deflection temperature at 1.8 MPa
Deflection Temperature at 0.46 MPa (66 psi)	232 °C	450 °F	Unannealed; 0.125 in (3.2 mm); ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	82 °C	180 °F	Unannealed; 0.125 in (3.2 mm); ASTM D648
Brittleness Temperature	-79 °C	-110 °F	
Flammability, UL94	V-2	V-2	
Oxygen Index	30 %	30 %	ASTM D2863

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