

## EMS-Grivory Grivory® TR 90 NZZ nat PAMACM12-I

Category : Polymer , Thermoplastic , Nylon , Nylon 12

### Material Notes:

Product description: Grilamid TR 90 NZZ natural is an amorphous thermoplastic polyamide, based on aliphatic and cycloaliphatic units. Grilamid TR 90 NZZ natural offers a variety of interesting properties such as: Outstanding impact resistance even at low temperatures High flexural fatigue resistance Resistance to a wide range of solvents and chemicals Excellent stress crack resistance Low density Excellent weathering resistance Light opacity allows various colours Grilamid TR 90 NZZ natural is suitable for technically demanding parts such as safety and sports spectacles and can be processed in injection moulding and extrusion technologies. Information provided by EMS Grivory

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_EMS-Grivory-Grivory-TR-90-NZZ-nat-PAMACM12-I.php](http://www.lookpolymers.com/polymer_EMS-Grivory-Grivory-TR-90-NZZ-nat-PAMACM12-I.php)

Physical Properties	Metric	English	Comments
Density	0.990 g/cc	0.0358 lb/in <sup>3</sup>	ISO 1183
Water Absorption	3.0 %	3.0 %	ISO 62
Moisture Absorption	1.50 %	1.50 %	ISO 62
Linear Mold Shrinkage, Flow	0.0080 cm/cm	0.0080 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.0090 cm/cm	0.0090 in/in	ISO 294-4, 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	80.0 MPa	11600 psi	conditioned; ISO 2039-1
Tensile Strength at Break	45.0 MPa	6530 psi	conditioned; ISO 527-1/-2
Tensile Strength, Yield	50.0 MPa	7250 psi	conditioned; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	conditioned; ISO 527-1/-2
Elongation at Yield	7.0 %	7.0 %	conditioned; ISO 527-1/-2
Tensile Modulus	1.30 GPa	189 ksi	conditioned; ISO 527-1/-2
Charpy Impact Unnotched	NB	NB	conditioned; ISO 179/1eU
	NB	NB	conditioned; ISO 179/1eU
	@Temperature 30.0 °C	@Temperature 86.0 °F	
Charpy Impact, Notched	6.00 J/cm <sup>2</sup>	28.6 ft-lb/in <sup>2</sup>	conditioned; ISO 179/1eA
	2.50 J/cm <sup>2</sup>	11.9 ft-lb/in <sup>2</sup>	conditioned; ISO 179/1eU
	@Temperature 30.0 °C	@Temperature 86.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	120 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow	120 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-1/-2
Maximum Service Temperature, Air	70.0 - 90.0 $^\circ\text{C}$	158 - 194 $^\circ\text{F}$	long term; EMS
	115 $^\circ\text{C}$	239 $^\circ\text{F}$	short term; EMS
Transformation Temperature, Tg	155 $^\circ\text{C}$	311 $^\circ\text{F}$	10 $^\circ\text{C}/\text{min}$ ; ISO 11357-1/-2
Deflection Temperature at 0.46 MPa (66 psi)	130 $^\circ\text{C}$	266 $^\circ\text{F}$	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	110 $^\circ\text{C}$	230 $^\circ\text{F}$	ISO 75-1/-2
Flammability, UL94	HB	HB	IEC 60695-11-10

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	conditioned; IEC 60093
Surface Resistance	1.00e+12 ohm	1.00e+12 ohm	IEC 60093
Dielectric Strength	45.0 kV/mm	1140 kV/in	conditioned; IEC 60243-1
Comparative Tracking Index	600 V	600 V	conditioned; IEC 60112

Descriptive Properties	Value	Comments
Automotive	Exterior	
	Fuel systems	
	Interior	
Electricals & Electronics	Connectors	
	Electrical appliances	
	Electrical equipment	
	Energy distribution	
	Lighting	
	Mobile phones and other portable devices	
Form	Granules	
Industry & Consumer goods	Housewares	

Descriptive Properties	Hydraulics & Pneumatics Value	Comments
	Mechanical Engineering	
	Medical devices	
Optics	Spectacle frames	
Processing	Injection Molding	
	Other Extrusion	
Product Attributes	Co Polyamide	
	Hydrolysis resistant	
Special Characteristics	High impact or impact modified	
	Improved UV resistance (outdoor use)	

## Contact Songhan Plastic Technology Co.,Ltd.

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