

EMS-Grivory Grivory® TR 90 PAMACM12

Category : Polymer , Thermoplastic , Nylon , Nylon 12

Material Notes:

Product description: Grilamid TR 90 natural is a high purity transparent thermoplastic polyamide, based on aliphatic and cycloaliphatic monomers. Grilamid TR 90 natural offers outstanding properties such as: Transparency and weathering stabilityUnlimited colorabilityStress crack resistanceToughness and stiffnessGood chemical resistanceHigh flexural fatigue strengthEU and FDA food approval Grilamid TR 90 natural is especially suited for injection moulded outdoor applications in the application fields of:

OpticsAutomotiveMechanical engineeringSafety technologySanitaryDomestic appliancesElectro / ElectronicsInformation provided by EMS Grivory

Order this product through the following link:

http://www.lookpolymers.com/polymer_EMS-Grivory-Grivory-TR-90-PAMACM12.php

Physical Properties	Metric	English	Comments
Density	1.00 g/cc	0.0361 lb/in³	ISO 1183
Water Absorption	3.0 %	3.0 %	ISO 62
Moisture Absorption	1.50 %	1.50 %	ISO 62
Linear Mold Shrinkage, Flow	0.0070 cm/cm	0.0070 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.0080 cm/cm	0.0080 in/in	ISO 294-4, 2577

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	90.0 MPa	13100 psi	conditioned; ISO 2039-1
Tensile Strength, Yield	60.0 MPa	8700 psi	conditioned; ISO 527-1/-2
	60.0 MPa	8700 psi	dry; ISO 527-1/-2
Elongation at Break	>= 50 %	>= 50 %	conditioned; ISO 527-1/-2
	<= 50 %	<= 50 %	dry; ISO 527-1/-2
Elongation at Yield	6.0 %	6.0 %	conditioned; ISO 527-1/-2
	6.0 %	6.0 %	dry; ISO 527-1/-2
Tensile Modulus	1.60 GPa	232 ksi	conditioned; ISO 527-1/-2
	1.60 GPa	232 ksi	dry; ISO 527-1/-2
Charpy Impact Unnotched	NB	NB	dry; ISO 179/1eU
	NB	NB	conditioned; ISO 179/1eU
	NB	NB	

Mechanical Properties	Metric @ Temperature 30.0 °C	English @ Temperature 86.0 °F	dry; ISO 179/1eU Comments
Charpy Impact, Notched	NB	NB	conditioned; ISO 179/1eU
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	0.900 J/cm²	4.28 ft-lb/in²	dry; ISO 179/1eA
	1.30 J/cm²	6.19 ft-lb/in²	conditioned; ISO 179/1eA
	0.900 J/cm²	4.28 ft-lb/in²	dry; ISO 179/1eU
	@Temperature 30.0 °C	@Temperature 86.0 °F	
	1.20 J/cm²	5.71 ft-lb/in²	conditioned; ISO 179/1eU
	@Temperature 30.0 °C	@Temperature 86.0 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	90.0 µm/m-°C	50.0 µin/in-°F	ISO 11359-1/-2
CTE, linear, Transverse to Flow	90.0 µm/m-°C	50.0 µin/in-°F	ISO 11359-1/-2
Maximum Service Temperature, Air	80.0 - 100 °C	176 - 212 °F	long term; EMS
	120 °C	248 °F	short term; EMS
Transformation Temperature, Tg	155 °C	311 °F	10°C/min; ISO 11357-1/-2
Deflection Temperature at 0.46 MPa (66 psi)	135 °C	275 °F	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	115 °C	239 °F	ISO 75-1/-2
Flammability, UL94	HB	HB	IEC 60695-11-10

Optical Properties	Metric	English	Comments
Transmission, Visible	90 %	90 %	transparent; thickness not quantified

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	34.0 kV/mm	864 kV/in	conditioned; IEC 60243-1
Comparative Tracking Index	600 V	600 V	conditioned; IEC 60112

Descriptive Properties	Value	Comments
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Automotive Descriptive Properties	Automotive electr. and electronics, lighting Value	Comments
	Cooling and climate control	
	Fuel systems	
	Interior	
	Powertrain and Chassis	
Electricals & Electronics	Connectors	
	Electrical appliances	
	Electrical equipment	
	Lighting	
	Mobile phones and other portable devices	
Food contact	EU Requirements	
	FDA	
Form	Granules	
Industry & Consumer goods	Heating systems	
	Housewares	
	Hydraulics & Pneumatics	
	Mechanical Engineering	
	Medical devices	
	Power transmission	
	Sanitary, water and gas supply	
	Sports & Leisure	
	Tools & Accessories	
Medical	FDA	
	USP VI	
Optics	Lenses	
	Optical components	
	Safety glasses	
	Spectacle frames	

Descriptive Properties	Value	Comments
Packaging	Cosmetics / Personal care	
	Medical packaging	
	Non oriented film	
Processing	Injection Molding	
	Other Extrusion	
Special Characteristics	Transparent	
Water Contact	DVGW W270	
	KTW	
	NSF 61	
	WRAS	

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