

Grilamid® TR 90 TL

Polyamide 12

EMS-GRIVORY

Message:

Grilamid® TR 90 TL is a Polyamide 12 (Nylon 12) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for injection molding.

Important attributes of Grilamid® TR 90 TL are:

- Flame Rated
- Impact Resistant
- Lubricated

Typical applications include:

- Electrical/Electronic Applications
- Automotive
- Appliances
- Engineering/Industrial Parts
- Household Applications

General Information				
Additive		Lubricant		
Features	High Impact Resistance			
	Hydrolysis Resistant			
	Lubricated			
Uses	Appliance Components			
	Automotive Applications			
	Automotive Exterior Parts			
	Cell Phones			
	Connectors			
	Electrical/Electronic Applications			
	Engineering Parts			
	Household Goods			
	Hydraulic Applications			
	Lighting Applications			
	Medical/Healthcare Applications			
	Pneumatic Applications			
Appearance		Clear/Transparent		
Forms		Granules		
Processing Method		Injection Molding		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.02	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	0.60	--	%	
Flow	0.50	--	%	

Water Absorption				ISO 62
Saturation, 23°C	2.5	--	%	
Equilibrium, 23°C, 50% RH	2.0	--	%	
Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	--	120	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	--	1850	MPa	ISO 527-2
Tensile Stress				ISO 527-2
Yield	--	75.0	MPa	
Break	--	55.0	MPa	
Tensile Strain				ISO 527-2
Yield	--	7.0	%	
Break	--	> 50	%	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	--	11	kJ/m ²	
23°C	--	10	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	--	No Break		
23°C	--	No Break		
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	110	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	90.0	--	°C	ISO 75-2/A
Maximum Use Temperature				Internal Method
Long Term	80 to 100	--	°C	
Short Term	110	--	°C	
ISO Type	PA MACM12,MACMI/MACMT/12,12, GT, 11-20			ISO 1874
Glass Transition Temperature ¹	135	--	°C	ISO 11357-2
CLTE				ISO 11359-2
Flow	9.5E-5	--	cm/cm/°C	
Transverse	9.5E-5	--	cm/cm/°C	
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+12	ohms	IEC 60093
Volume Resistivity	--	1.0E+13	ohms·cm	IEC 60093
Electric Strength	--	33	kV/mm	IEC 60243-1
Comparative Tracking Index	--	600	V	IEC 60112

Flammability	Dry	Conditioned	Unit	Test Method
Flammability Classification (0.800 mm)	HB	--		IEC 60695-11-10, -20
NOTE				
1.	10°C/min			

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