

# Grilamid® XE 4028 nat

Polyamide 12

EMS-GRIVORY

## Message:

Grilamid® XE 4028 nat is a Polyamide 12 (Nylon 12) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America for blow molding, extrusion, or injection stretch blow molding.

Important attributes of Grilamid® XE 4028 nat are:

Flame Rated

RoHS Compliant

Food Contact Acceptable

Typical applications include:

Food Contact Applications

Containers

Medical/Healthcare

Packaging

General Information	
Features	Food Contact Acceptable
Uses	Blow Molding Applications Blown Containers Medical/Healthcare Applications Packaging
Agency Ratings	EU Food Contact, Unspecified Rating FDA Food Contact, Unspecified Rating
RoHS Compliance	RoHS Compliant
Appearance	Clear/Transparent Natural Color
Forms	Granules
Processing Method	Blow Molding Extrusion Injection Stretch Blow Molding

Physical	Dry	Conditioned	Unit	Test Method
Density	1.06	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	0.70	--	%	
Flow	0.60	--	%	
Water Absorption				ISO 62
Saturation, 23°C	3.5	--	%	
Equilibrium, 23°C, 50% RH	1.5	--	%	

Hardness	Dry	Conditioned	Unit	Test Method
Ball Indentation Hardness	--	120	MPa	ISO 2039-1
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	--	2200	MPa	ISO 527-2
Tensile Stress				ISO 527-2
Yield	--	75.0	MPa	
Break	--	50.0	MPa	
Tensile Strain				ISO 527-2
Yield	--	9.0	%	
Break	--	> 50	%	
Nominal Tensile Strain at Break	--	> 50	%	ISO 527-2
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	--	7.0	kJ/m <sup>2</sup>	
23°C	--	8.0	kJ/m <sup>2</sup>	
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	145	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	130	--	°C	ISO 75-2/A
Continuous Use Temperature				Internal Method
-- <sup>1</sup>	80.0 to 100	--	°C	
-- <sup>2</sup>	120	--	°C	
Glass Transition Temperature <sup>3</sup>	160	--	°C	ISO 11357-2
CLTE				ISO 11359-2
Flow	8.0E-5	--	cm/cm/°C	
Transverse	8.0E-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	--	31	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
Additional Information	Dry	Conditioned	Unit	Test Method

ISO Type	PA 12/MACMI, GT, 11-020 --	ISO 1874
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NOTE

1.	Long Term
2.	Short Term
3.	10°C/min

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