

**Product Texts**

Product-nomenclature: ISO 16396-PA610,GF50,M1HR,S22-090

Bio based Polyamide

**Product Attributes**

Improved heat resistance, Improved UV resistance (outdoor use)

**Markets**

**Automotive**

Air intake systems, Compressed air systems, Hydraulic systems, Automotive electr. and electronics, lighting, Cooling and climate control, Fuel systems, Powertrain and Chassis, Interior, Exterior

**Electricals & Electronics**

Electrical appliances, Electrical equipment, Connectors, Mobile phones and other portable devices, Lighting

**Industry & Consumer goods**

Housewares, Hydraulics & Pneumatics, Mechanical Engineering, Power transmission, Sports & Leisure, Tools & Accessories

Processing/Physical Characteristics	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	0.1 / *	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	0.7 / *	%	ISO 294-4, 2577

[C]: CAMPUS

Mechanical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	15500 / 12000	MPa	ISO 527
<sup>[C]</sup> Stress at break	210 / 165	MPa	ISO 527
<sup>[C]</sup> Strain at break	4 / 5.5	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	95 / 90	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	95 / 90	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	17 / 20	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Charpy notched impact strength, -30°C	14 / 14	kJ/m <sup>2</sup>	ISO 179/1eA

[C]: CAMPUS

Thermal properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Melting temperature, 10°C/min	225 / *	°C	ISO 11357-1/-3
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	200 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 8.00 MPa	150 / *	°C	ISO 75-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	20 / *	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	80 / *	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion -40°C to +100°C, parallel	20	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion -40°C to +100°C, normal	80	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.8 / *	mm	-

[C]: CAMPUS

Electrical properties	dry / cond	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Volume resistivity	1E10 / 1E10	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	* / 1E11	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	42 / 41	kV/mm	IEC 60243-1
<sup>[C]</sup> Comparative tracking index	- / 600	-	IEC 60112

[C]: CAMPUS

## Grilamid XE 4105 natural

PA610-GF50

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Other properties	dry / cond	Unit	Test Standard
<sup>[C]</sup> Water absorption	1.9 / *	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	0.8 / *	%	Sim. to ISO 62
<sup>[C]</sup> Density	1530 / -	kg/m <sup>3</sup>	ISO 1183

[C]: CAMPUS

### Characteristics

#### Processing

Injection Molding

#### Delivery form

Granules, Natural Color

#### Special Characteristics

Light stabilized or stable to light, U.V. stabilized or stable to weather, Heat stabilized or stable to heat

#### Certifications

Contains renewable resources

#### Applications

Automotive, Electrical and Electronical, Sports Equipment

#### Regional Availability

North America, Europe, Asia Pacific, South and Central America, Near East/Africa