

**Product Texts**

Product-nomenclature: ISO 16396-PA MACM12,GF40,M1H,C12-100

**Markets**

**Automotive**

Automotive electr. and electronics, lighting, Cooling and climate control, Powertrain and Chassis

**Electricals & Electronics**

Electrical appliances, Electrical equipment, Energy distribution, Mobile phones and other portable devices

**Industry & Consumer goods**

Heating systems, Housewares, Hydraulics & Pneumatics, Mechanical Engineering, Medical devices, Power transmission, Tools & Accessories

**Approvals**

**Potable Water Contact**

NSF 61

<b>Processing/Physical Characteristics</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Molding shrinkage, parallel	<b>0.1 / *</b>	%	ISO 294-4, 2577
<sup>[C]</sup> Molding shrinkage, normal	<b>0.4 / *</b>	%	ISO 294-4, 2577
<sup>[C]</sup> Density of melt	<b>1050</b>	kg/m <sup>3</sup>	-
<sup>[C]</sup> Thermal conductivity of melt	<b>0.24</b>	W/(m K)	-
<sup>[C]</sup> Spec. heat capacity of melt	<b>1600</b>	J/(kg K)	-
<sup>[C]</sup> Eff. thermal diffusivity	<b>1.43E-7</b>	m <sup>2</sup> /s	-
<sup>[C]</sup> Ejection temperature	<b>150</b>	°C	-

[C]: CAMPUS

<b>Mechanical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Tensile Modulus	<b>10000 / 9000</b>	MPa	ISO 527
<sup>[C]</sup> Stress at break	<b>130 / 130</b>	MPa	ISO 527
<sup>[C]</sup> Strain at break	<b>3.5 / 2</b>	%	ISO 527
<sup>[C]</sup> Charpy impact strength, +23°C	<b>65 / 45</b>	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy impact strength, -30°C	<b>65 / 45</b>	kJ/m <sup>2</sup>	ISO 179/1eU
<sup>[C]</sup> Charpy notched impact strength, +23°C	<b>14 / 14</b>	kJ/m <sup>2</sup>	ISO 179/1eA
<sup>[C]</sup> Charpy notched impact strength, -30°C	<b>13 / 13</b>	kJ/m <sup>2</sup>	ISO 179/1eA

[C]: CAMPUS

<b>Thermal properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Glass transition temperature, 10°C/min	<b>155 / *</b>	°C	ISO 11357-1/-2
<sup>[C]</sup> Temp. of deflection under load, 1.80 MPa	<b>135 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Temp. of deflection under load, 8.00 MPa	<b>125 / *</b>	°C	ISO 75-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, parallel	<b>20 / *</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Coeff. of linear therm. expansion, normal	<b>80 / *</b>	E-6/K	ISO 11359-1/-2
<sup>[C]</sup> Burning Behav. at thickness h	<b>HB / *</b>	class	IEC 60695-11-10
Thickness tested	<b>0.8 / *</b>	mm	-

[C]: CAMPUS

<b>Electrical properties</b>	<b>dry / cond</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
<sup>[C]</sup> Volume resistivity	<b>1E11 / 1E11</b>	Ohm*m	IEC 62631-3-1
<sup>[C]</sup> Surface resistivity	<b>* / 1E12</b>	Ohm	IEC 62631-3-2
<sup>[C]</sup> Electric strength	<b>27 / 27</b>	kV/mm	IEC 60243-1
<sup>[C]</sup> Comparative tracking index	<b>- / 600</b>	-	IEC 60112

[C]: CAMPUS

## Grilamid TRV-4X9 natural

PAMACM12-GF40

EMS-GRIVORY | a unit of EMS-CHEMIE AG

Other properties	dry / cond	Unit	Test Standard
<sup>[C]</sup> Water absorption	1.5 / *	%	Sim. to ISO 62
<sup>[C]</sup> Humidity absorption	0.8 / *	%	Sim. to ISO 62
<sup>[C]</sup> Density	1320 / -	kg/m <sup>3</sup>	ISO 1183

[C]: CAMPUS

Test specimen production	Value	Unit	Test Standard
<b>ISO Data</b>			
<sup>[C]</sup> Injection Molding, melt temperature	290	°C	ISO 294
Injection Molding, mold temperature	80	°C	ISO 294
Injection Molding, injection velocity	300	mm/s	ISO 294
Injection Molding, pressure at hold	75	MPa	ISO 294

[C]: CAMPUS

### Characteristics

#### Processing

Injection Molding

#### Delivery form

Granules, Natural Color

#### Certifications

Drinking water contact, Drinking water contact NSF 61

#### Applications

Automotive, Electrical and Electronical, Medical

#### Regional Availability

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