

**Grilamid 1S XE 4224 nat**  
 PA1010

EMS-GRIVORY | a unit of EMS-CHEMIE AG

**Product Texts**

 Product-nomenclature according to ISO 1874:  
 PA 1010, G, 18-020

Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	<b>2000 / 1300</b>	MPa	ISO 527-1/-2
Yield stress	<b>55 / 50</b>	MPa	ISO 527-1/-2
Yield strain	<b>5 / 20</b>	%	ISO 527-1/-2
Nominal strain at break	<b>30 / 45</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy impact strength (-30°C)	<b>N / N</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	<b>6 / 9</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	<b>7 / 6</b>	kJ/m <sup>2</sup>	ISO 179/1eA

Mechanical properties (TPE)	dry / cond	Unit	Test Standard
Ball indentation hardness	<b>110 / 80</b>	MPa	ISO 2039-1

Thermal properties	dry / cond	Unit	Test Standard
Melting temperature (10°C/min)	<b>200 / -</b>	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	<b>50 / -</b>	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	<b>125 / -</b>	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	<b>110 / -</b>	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	<b>80 / -</b>	E-6/K	ISO 11359-1/-2
Burning Behav. at thickness h	<b>HB / -</b>	class	IEC 60695-11-10
Thickness tested	<b>0.8 / -</b>	mm	IEC 60695-11-10

Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	<b>1E9 / 1E9</b>	Ohm*m	IEC 60093
Surface resistivity	<b>- / 1E10</b>	Ohm	IEC 60093
Electric strength	<b>38 / 38</b>	kV/mm	IEC 60243-1
Comparative tracking index	<b>- / 600</b>	-	IEC 60112

Other properties	dry / cond	Unit	Test Standard
Water absorption	<b>2.1 / -</b>	%	Sim. to ISO 62
Humidity absorption	<b>1 / -</b>	%	Sim. to ISO 62
Density	<b>1040 / -</b>	kg/m <sup>3</sup>	ISO 1183

**Characteristics**
**Processing**

Extrusion - cast film, Other Extrusion

**Product Attributes**

High viscosity, Bio based Polyamide, Nucleated

**Delivery form**

Granules

**Automotive**

Powertrain and Chassis

**Special Characteristics**

Improved UV resistance (outdoor use), Improved heat resistance

**Electricals & Electronics**

Cables &amp; Tubes, Connectors

**Regional Availability**

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

**Industry & Consumer goods**

 Housewares, Mechanical Engineering, Sports & Leisure, Tools &  
 Accessories