

**Grilamid XE 4180 nat**  
PA1010

EMS-GRIVORY | a unit of EMS-CHEMIE AG

**Product Texts**

Product-nomenclature according to ISO 1874:  
PA1010-HIP, E, 24-005

| Mechanical properties                  | dry / cond             | Unit              | Test Standard |
|--|------------------------|-------------------|---------------|
| Tensile Modulus                        | <b>600 / 480</b>       | MPa               | ISO 527-1/-2  |
| Stress at 50% strain                   | <b>30 / 30</b>         | MPa               | ISO 527-1/-2  |
| Strain at break                        | <b>&gt;50 / &gt;50</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>N / N</b>           | kJ/m <sup>2</sup> | ISO 179/1eA   |
| Charpy notched impact strength (-30°C) | <b>5 / 5</b>           | kJ/m <sup>2</sup> | ISO 179/1eA   |

| Thermal properties                           | dry / cond     | Unit  | Test Standard   |
|--|----------------|-------|-----------------|
| Melting temperature (10°C/min)               | <b>194 / -</b> | °C    | ISO 11357-1/-3  |
| Temp. of deflection under load (1.80 MPa)    | <b>55 / -</b>  | °C    | ISO 75-1/-2     |
| Temp. of deflection under load (0.45 MPa)    | <b>115 / -</b> | °C    | ISO 75-1/-2     |
| Coeff. of linear therm. expansion (parallel) | <b>170 / -</b> | E-6/K | ISO 11359-1/-2  |
| Coeff. of linear therm. expansion (normal)   | <b>120 / -</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>35 / 35</b>   | kV/mm | IEC 60243-1   |
| Comparative tracking index | <b>- / 600</b>   | -     | IEC 60112     |

| Other properties    | dry / cond      | Unit              | Test Standard  |
|---------------------|-----------------|-------------------|----------------|
| Water absorption    | <b>1.5 / -</b>  | %                 | Sim. to ISO 62 |
| Humidity absorption | <b>0.6 / -</b>  | %                 | Sim. to ISO 62 |
| Density             | <b>1050 / -</b> | kg/m <sup>3</sup> | ISO 1183       |

**Characteristics**

**Processing**

Injection Molding

**Delivery form**

Granules

**Special Characteristics**

High impact or impact modified, Light stabilized or stable to light, Improved UV resistance (outdoor use)

**Regional Availability**

North America, Europe, Asia Pacific

**Product Attributes**

Improved flowability and demoulding, Bio based Polyamide

**Automotive**

Compressed air systems, Hydraulic systems, Automotive electr. and electronics, lighting, Fuel systems, Powertrain and Chassis , Interior, Exterior

**Electricals & Electronics**

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

**Industry & Consumer goods**

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