TECHNICAL DATASHEET

# Grilamid L 20 GM black 9288

PA12

EMS-GRIVORY
Material Database

**Physical**
Low moisture absorption, High dimensional stability

**Mechanical**
Good abrasion resistance

**Processing**
Injection molding

**Delivery form**
Granules

**Additives**
Lubricants

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

## Product Information

Product-nomenclature: ISO 16396-PA12,,M1HR,C18-010

| Mechanical Properties | dry/cond | Unit | Standard |
|---|---|---|---|
| Tensile modulus | 1400 / 1100 | MPa | ISO 527 |
| Yield stress | 45 / 40 | MPa | ISO 527 |
| Yield strain | 10 / 12 | % | ISO 527 |
| Nominal strain at break | >50 / >50 | % | ISO 527 |
| Charpy impact strength, +23°C | - / N | kJ/m² | ISO 179/1eU |
| Charpy impact strength, -30°C | - / N | kJ/m² | ISO 179/1eU |
| Charpy notched impact strength, +23°C | - / 7 | kJ/m² | ISO 179/1eA |
| Charpy notched impact strength, -30°C | - / 6 | kJ/m² | ISO 179/1eA |
| Ball indentation hardness | - / 70 | MPa | ISO 2039-1 |

| Thermal Properties | dry/cond | Unit | Standard |
|---|---|---|---|
| Melting temperature, 10°C/min | 178 / - | °C | ISO 11357-1/-3 |
| Temp. of deflection under load, 1.80 MPa | 45 / - | °C | ISO 75-1/-2 |
| Temp. of deflection under load, 0.45 MPa | 115 / - | °C | ISO 75-1/-2 |
| Max. usage temperature (long term) | 100 | °C | ISO 2578 |
| Max. usage temperature (short term) | 150 | °C | EMS |

| Electrical Properties | dry/cond | Unit | Standard |
|---|---|---|---|
| Electric strength | - / 32 | kV/mm | IEC 60243-1 |
| Comparative tracking index | - / 600 | | IEC 60112 |
| Volume resistivity | 1E11 / 1E11 | Ohm*m | IEC 62631-3-1 |
| Surface resistivity | - / 1E12 | Ohm | IEC 62631-3-2 |

| General Properties | dry/cond | Unit | Standard |
|---|---|---|---|
| Density | 1010 / - | kg/m³ | ISO 1183 |

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| General Properties | dry/cond | Unit | Standard |
|---|---|---|---|
| Burning behav. at thickness h | HB / - | class | IEC 60695-11-10 |
| Thickness tested | 0.8 / - | mm | |
| Water absorption | 1.5 / - | % | Sim. to ISO 62 |
| Humidity absorption | 0.7 / - | % | Sim. to ISO 62 |
| Molding shrinkage, parallel | 0.8 / - | % | ISO 294-4, 2577 |
| Molding shrinkage, normal | 0.85 / - | % | ISO 294-4, 2577 |

| Processing Injection Molding | Value | Unit | Standard |
|---|---|---|---|
| Hopper zone | 40 - 60 | °C | |
| Feeding zone | 220 - 240 | °C | |
| Compression zone | 230 - 260 | °C | |
| Metering zone | 230 - 270 | °C | |
| Nozzle (IM) | 230 - 270 | °C | |
| Melt | 240 - 270 | °C | |
| Mold surface temperature | 40 - 80 | °C | |
| Injection speed | Low - Medium | - | |
| Pressure | 300 - 800 | bar | |
| Dynamic pressure (hydraulic) | 50 - 100 | bar | |
| Circumferencial screw speed | 5 - 15 | m/s | |

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