

TECHNICAL DATA SHEET

TECHNYL 4EARTH C2E 216 V50 BK H  
(Previously ECONAMID PLUS 6G50 BK)

Polyamide 6, 50% glass fiber reinforced, for injection moulding, black

General

|                       |                   |                      |  |
|-----------------------|-------------------|----------------------|--|
| Feature               | Recycled          |                      |  |
| Polymer type          | PA6 (Polyamide 6) |                      |  |
| Processing technology | Injection molding |                      |  |
| Certification         | RoHS              | EC 1907/2006 (REACH) |  |
| Colors available      | Black             |                      |  |
| Forms                 | Pellets           |                      |  |

Product identification

|                       |                           |
|-----------------------|---------------------------|
| ISO 1043 abbreviation | PA6-GF50                  |
| ISO 16396 designation | PA6,GF50(R100),M1,S14-140 |

Physical properties

|                             | Condition      | Standard        | Unit  | Value     |
|-----------------------------|----------------|-----------------|-------|-----------|
| Density                     |                | ISO 1183        | g/cm³ | 1.57      |
| Humidity absorption         | T=23°C, 50% RH | ISO 62          | %     | 1.6 - 1.7 |
| Water absorption            | 24 hr, 23°C    | ISO 62          | %     | 1         |
| Molding shrinkage, parallel |                | ISO 294-4, 2577 | %     | 0.1 - 0.2 |
| Molding shrinkage, normal   |                | ISO 294-4, 2577 | %     | 0.5 - 0.6 |

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|                                       | Condition | Standard     | Unit  | Value               |
|---------------------------------------|-----------|--------------|-------|---------------------|
| <b>Mechanical properties</b>          |           |              |       | <b>dam / cond.*</b> |
| Tensile modulus                       | 1 mm/min  | ISO 527-1/-2 | MPa   | 15000 / 8000        |
| Stress at break                       | 5 mm/min  | ISO 527-1/-2 | MPa   | 160 / 100           |
| Strain at break                       | 5 mm/min  | ISO 527-1/-2 | %     | 1.8 / 3.5           |
| Flexural modulus, ISO 178             | 2 mm/min  | ISO 178      | MPa   | 13000 / 7000        |
| Flexural strength, ISO 178            | 2 mm/min  | ISO 178      | MPa   | 250 / 150           |
| Charpy impact strength, +23°C         | +23°C     | ISO 179/1eU  | kJ/m² | 55 / 60             |
| Charpy impact strength, -30°C         | -30°C     | ISO 179/1eU  | kJ/m² | 55 / -              |
| Charpy notched impact strength, +23°C | +23°C     | ISO 179/1eA  | kJ/m² | 11 / 19             |
| Charpy notched impact strength, -30°C | -30°C     | ISO 179/1eA  | kJ/m² | 9 / -               |
| Izod impact strength, +23°C           | +23°C     | ISO 180/1U   | kJ/m² | 50 / -              |
| Izod notched impact strength, +23°C   | +23°C     | ISO 180/1A   | kJ/m² | 12 / -              |

**Thermal properties**

|                                          |              |             |    |     |
|------------------------------------------|--------------|-------------|----|-----|
| Melting temperature, 10°C/min            |              | ISO 11357-1 | °C | 221 |
| Temp. of deflection under load, 0.45 MPa | 0.45 MPa     | ISO 75      | °C | 215 |
| Temp. of deflection under load, 1.80 MPa | 1.80 MPa     | ISO 75      | °C | 205 |
| Vicat softening temperature              | 50°C/h - 50N | ISO 306     | °C | 210 |

**Electrical properties**

|                                |            |               |       |        |
|--------------------------------|------------|---------------|-------|--------|
| Volume resistivity             |            | IEC 62631-3-1 | ohm.m | 1E+013 |
| Surface resistivity            |            | IEC 62631-3-1 | ohm   | 1E+013 |
| Comparative tracking index     | Solution A | IEC 60112     | V     | 600    |
| CTI performance level category |            | Sol A         |       | PLC 0  |

**Burning behaviour**

|                                     |         |           |  |              |
|-------------------------------------|---------|-----------|--|--------------|
| Flammability, 0.75 mm               | 0.75 mm | UL 94     |  | HB           |
| Burning rate, FMVSS, Thickness 1 mm |         | FMVSS 302 |  | < 100 mm/min |

Test run at 23°C if not differently specified, DAM state (dry as moulded), valid for black products.  
\*: conditioned according to ISO 1110

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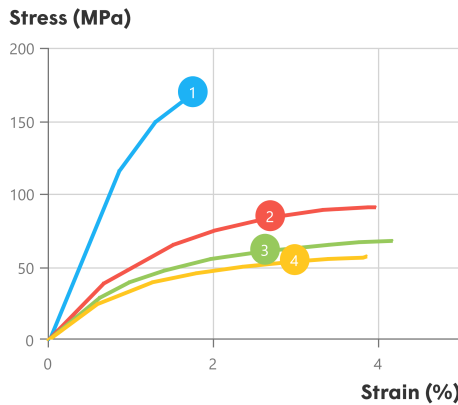
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Processing conditions

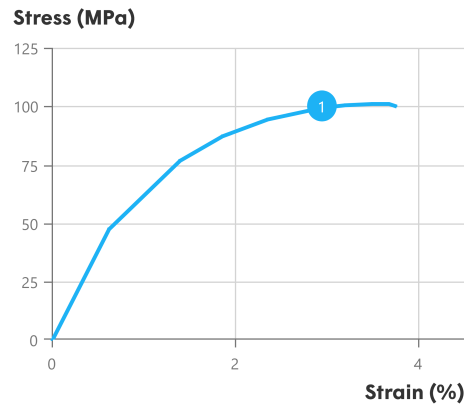
|                               |                                                       |
|-------------------------------|-------------------------------------------------------|
| Drying temperature/time       | 75-85°C / 2-4h (with dew point of dried air < -30 °C) |
| Suggested max moisture        | 0.2 %                                                 |
| Rear temperature              | 235 - 240 °C                                          |
| Middle temperature            | 240 - 250 °C                                          |
| Front temperature             | 250 - 260 °C                                          |
| Recommended melt temperature  | 240 - 260 °C                                          |
| Recommended mould temperature | 60 - 90 °C                                            |

These parameters are typical of the product but should be related to the type of machinery used and to the type of moulded part.

Stress-strain, dry



Stress-strain, conditioned



Injection notes

The material is supplied in airtight bags, ready for use. In case that the virgin material has absorbed moisture, it must be dried with a dehumidified air drying equipment, dew point minimum -20°C. Recommended time 2-4h.

Disclaimer

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