

Datasheet

Durethan ECOBKV50H2.0 901510

PA 6, 50% glass fibers, injection molding, heat-aging stabilized

ISO Shortname: ISO 16396-PA 6,GF50 (R),GHR,S14-160

| Property | Test Condition | Unit | Standard | guide value ¹ | |
|---|--|---------------------|----------------|--------------------------|-------|
| | | | | d.a.m. | cond. |
| Rheological properties | | | | | |
| Molding shrinkage, parallel | 150x105x3; 280 °C / MT 80 °C; 400 bar | % | acc. ISO 294-4 | 0.16 | |
| Molding shrinkage, transverse | 150x105x3; 280 °C / MT 80 °C; 400 bar | % | acc. ISO 294-4 | 0.85 | |
| Post- shrinkage, parallel | 150x105x3; 120 °C; 4 h | % | acc. ISO 294-4 | 0.02 | |
| Post- shrinkage, transverse | 150x105x3; 120 °C; 4 h | % | acc. ISO 294-4 | 0.05 | |
| Mechanical properties (23 °C/50 % r. h.) | | | | | |
| C Tensile modulus | 1 mm/min | MPa | ISO 527-1,-2 | 16300 | 9800 |
| C Tensile Stress at break | 5 mm/min | MPa | ISO 527-1,-2 | 220 | 140 |
| C Tensile Strain at break | 5 mm/min | % | ISO 527-1,-2 | 3.0 | 5.0 |
| C Tensile creep modulus | 1 h | MPa | ISO 899-1 | 8100 | |
| C Tensile creep modulus | 1000 h | MPa | ISO 899-1 | 6600 | |
| C Charpy impact strength | 23 °C | kJ/m ² | ISO 179-1eU | 100 | 100 |
| C Charpy impact strength | -30 °C | kJ/m ² | ISO 179-1eU | 85 | 80 |
| C Charpy notched impact strength | 23 °C | kJ/m ² | ISO 179-1eA | 20 | 25 |
| C Charpy notched impact strength | -30 °C | kJ/m ² | ISO 179-1eA | 15 | 13 |
| Izod impact strength | 23 °C | kJ/m ² | ISO 180-1U | 85 | 85 |
| Izod impact strength | -30 °C | kJ/m ² | ISO 180-1U | 80 | 80 |
| Izod notched impact strength | 23 °C | kJ/m ² | ISO 180-1A | 20 | 25 |
| Izod notched impact strength | -30 °C | kJ/m ² | ISO 180-1A | 12 | 12 |
| Flexural modulus | 2 mm/min | MPa | ISO 178-A | 15100 | 9700 |
| Flexural strength | 2 mm/min | MPa | ISO 178-A | 360 | 230 |
| Flexural strain at flexural strength | 2 mm/min | % | ISO 178-A | 3.0 | 5.0 |
| C Puncture maximum force | 23 °C | N | ISO 6603-2 | 1200 | |
| C Puncture maximum force | -30 °C | N | ISO 6603-2 | 1060 | |
| C Puncture energy | 23 °C | J | ISO 6603-2 | 4.2 | 8.9 |
| C Puncture energy | -30 °C | J | ISO 6603-2 | 3.7 | |
| Ball indentation hardness | | N/mm ² | ISO 2039-1 | 250 | 109 |
| Thermal properties | | | | | |
| C Melting temperature | 10 °C/min | °C | ISO 11357-1,-3 | 222 | |
| C Temperature of deflection under load | 1.80 MPa | °C | ISO 75-1,-2 | 205 | |
| C Temperature of deflection under load | 0.45 MPa | °C | ISO 75-1,-2 | 215 | |
| Vicat softening temperature | 50 N; 120 °C/h | °C | ISO 306 | > 200 | |
| C Coefficient of linear thermal expansion, parallel | 23 to 55 °C | 10 ⁻⁴ /K | ISO 11359-1,-2 | 0.2 | |
| C Coefficient of linear thermal expansion, transverse | 23 to 55 °C | 10 ⁻⁴ /K | ISO 11359-1,-2 | 0.7 | |

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| Property | Test Condition | Unit | Standard | guide value ¹ | |
|---|----------------|-------------------|----------------------|--------------------------|-------|
| | | | | d.a.m. | cond. |
| C Burning behavior UL 94 | 1.5 mm | Class | UL 94 | HB | |
| C Burning behavior UL 94 | 0.75 mm | Class | UL 94 | HB | |
| C Oxygen index | Method A | % | ISO 4589-2 | 24 | |
| Resistance to heat (ball pressure test) | | °C | IEC 60695-10-2 | 210 | |
| Glow wire test (GWFI) | 2.0 mm | °C | IEC 60695-2-12 | 650 | |
| Burning behavior US-FMVSS302 | >=1.0 mm | | ISO 3795 | passed | |
| C Vicat softening temperature | 50 N; 50 °C/h | °C | ISO 306 | > 200 | |
| Electrical properties (23 °C/50 % r. h.) | | | | | |
| C Relative permittivity | 100 Hz | - | IEC 60250 | 5.3 | 14.2 |
| C Relative permittivity | 1 MHz | - | IEC 60250 | 4.3 | 5.0 |
| C Dissipation factor | 100 Hz | 10 ⁻⁴ | IEC 60250 | 360 | 3190 |
| C Dissipation factor | 1 MHz | 10 ⁻⁴ | IEC 60250 | 240 | 890 |
| C Volume resistivity | | Ohm·m | IEC 62631-3 | 1E14 | 1E11 |
| C Surface resistivity | | Ohm | IEC 62631-3 | 1E13 | 1E13 |
| C Electric strength | 1 mm | kV/mm | IEC 60243-1 | 35 | 26 |
| C Comparative tracking index CTI | Solution A | Rating | IEC 60112 | 550 | |
| Other properties (23 °C) | | | | | |
| C Water absorption (Saturation value) | Water at 23 °C | % | ISO 62 | 5.0 | |
| C Water absorption (Equilibrium value) | 23 °C; 50 % RH | % | ISO 62 | 1.5 | |
| C Density | | kg/m ³ | ISO 1183 | 1570 | |
| Bulk density | | kg/m ³ | ISO 60 | 700 | |
| Processing conditions for test specimens | | | | | |
| C Injection molding-Melt temperature | | °C | ISO 294 | 280 | |
| C Injection molding-Mold temperature | | °C | ISO 294 | 80 | |
| Processing recommendations | | | | | |
| Drying temperature dry air dryer | | °C | - | 80 | |
| Drying time dry air dryer | | h | - | 2-6 | |
| Residual moisture content | | % | Acc. to Karl Fischer | 0.03-0.12 | |
| Melt temperature (Tmin - Tmax) | | °C | - | 270-290 | |
| Mold temperature | | °C | - | 80-120 | |

Notes

1 Typical properties: these are not to be construed as specifications

C These property characteristics are taken from the CAMPUS plastics data bank and are based on the international catalogue of basic data for plastics according to ISO 10350.

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Property data is provided as general information only. Property values are approximate and are not part of the product specifications.

Flammability

Flammability results are based on small-scale laboratory tests for purposes of relative comparison and are not intended to reflect the hazards presented by this or any other material under actual fire conditions.

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