# Makroblend UT235 M

*I* (PC+PET)-blend, mineral filled, easy flow, low coefficient of linear thermal expansion, easy release, injection molding. Molded parts from UT235M having exceptional dimensional stability.

**ISO Shortname**

| | Property | Test Condition | Unit | Standard | typical Value |
|---|---|---|---|---|---|
| **Rheological properties** | | | | | |
| | Melt volume-flow rate | 270 °C; 5 kg | cm³/10 min | ISO 1133 | 39 |
| | Molding shrinkage, parallel | 150x105x3 mm; 270 °C / MT 70°C; 600 bar | % | b.o. ISO 2577 | 0.5 - 0.6 |
| | Molding shrinkage, normal | 150x105x3 mm; 270 °C / MT 70°C; 600 bar | % | b.o. ISO 2577 | 0.5 - 0.6 |
| **Mechanical properties (23 °C/50 % r. h.)** | | | | | |
| C | Tensile modulus | 1 mm/min | MPa | ISO 527-1,-2 | 4500 |
| | Yield stress | 5 mm/min | MPa | ISO 527-1,-2 | 68 |
| | Yield strain | 5 mm/min | % | ISO 527-1,-2 | 3.5 |
| C | Stress at break | 5 mm/min | MPa | ISO 527-1,-2 | 67 |
| C | Strain at break | 5 mm/min | % | ISO 527-1,-2 | 4.0 |
| | Flexural modulus | 2 mm/min | MPa | ISO 178 | 4650 |
| | Flexural strain at flexural strength | 2 mm/min | % | ISO 178 | 5.0 |
| | Flexural stress at 3.5 % strain | 2 mm/min | MPa | ISO 178 | 110 |
| | Flexural strength | 2 mm/min | MPa | ISO 178 | 115 |
| C | Charpy impact strength | 23 °C | kJ/m² | ISO 179-1eU | 85 |
| C | Charpy impact strength | -30 °C | kJ/m² | ISO 179-1eU | 85 |
| C | Puncture maximum force | 23 °C | N | ISO 6603-2 | 4500 |
| C | Puncture energy | 23 °C | J | ISO 6603-2 | 36 |
| | Izod impact strength | 23 °C | kJ/m² | ISO 180-U | 85 |
| | Izod impact strength | -30 °C | kJ/m² | ISO 180-U | 85 |
| **Thermal properties** | | | | | |
| C | Temperature of deflection under load | 1.80 MPa | °C | ISO 75-1,-2 | 114 |
| C | Temperature of deflection under load | 0.45 MPa | °C | ISO 75-1,-2 | 128 |
| | Vicat softening temperature | 50 N; 120 °C/h | °C | ISO 306 | 139 |
| | Coefficient of linear thermal expansion, parallel | 23 to 85 °C | $10^{-4}$/K | ISO 11359-1,-2 | 0.35 |
| | Coefficient of linear thermal expansion, transverse | 23 to 85 °C | $10^{-4}$/K | ISO 11359-1,-2 | 0.37 |
| **Other properties (23 °C)** | | | | | |
| C | Water absorption (saturation value) | Water at 23 °C | % | ISO 62 | 0.4 |
| C | Water absorption (equilibrium value) | 23 °C; 50 % r. h. | % | ISO 62 | 0.2 |
| C | Density | | kg/m³ | ISO 1183-1 | 1340 |
| | Filler content | Method A | % | b.o. ISO 3451-1 | 15 |
| **Processing conditions for test specimens** | | | | | |
| C | Injection molding-Melt temperature | | °C | ISO 294 | 270 |
| C | Injection molding-Mold temperature | | °C | ISO 294 | 70 |
| C | Injection molding-Injection velocity | | mm/s | ISO 294 | 200 |

**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.

Impact properties: N = non-break, P = partial break, C = complete break