

Makroblend® UT6005

Covestro - Polycarbonates - Polycarbonate + PBT

General Information

Product Description

(PC+PBT)-blend, impact modified, easy release, injection molding grade. Makroblend® UT6005 offers an exceptional low-temperature impact strength, good flowability and excellent chemical resistance.

General

| | | | |
|-------------------|------------------------|---------------------|-------------------------------------|
| Material Status | • Commercial: Active | | |
| Availability | • Africa & Middle East | • Europe | • North America |
| | • Asia Pacific | • Latin America | |
| Additive | • Impact Modifier | | |
| Features | • Chemical Resistant | • Good Mold Release | • Low Temperature Impact Resistance |
| | • Good Flow | • Impact Modified | |
| RoHS Compliance | • RoHS Compliant | | |
| Processing Method | • Injection Molding | | |

Properties ¹

| Physical | Nominal Value | Unit | Test Method |
|--|---------------|------------------------|--------------|
| Density (73°F) | 1.20 | g/cm ³ | ISO 1183 |
| Apparent (Bulk) Density | 0.65 | g/cm ³ | ISO 60 |
| Melt Volume-Flow Rate (MVR) (260°C/5.0 kg) | 18 | cm ³ /10min | ISO 1133 |
| Molding Shrinkage | | | ISO 2577 |
| Across Flow ² | 0.70 to 0.90 | % | |
| Across Flow : 194°F, 1 hr | 0.10 to 0.20 | % | |
| Flow ² | 0.70 to 0.90 | % | |
| Flow : 194°F, 1 hr | 0.10 to 0.20 | % | |
| Water Absorption (Saturation, 73°F) | 0.50 | % | ISO 62 |
| Water Absorption (Equilibrium, 73°F, 50% RH) | 0.20 | % | ISO 62 |
| Mechanical | Nominal Value | Unit | Test Method |
| Tensile Modulus (73°F) | 319000 | psi | ISO 527-1/1 |
| Tensile Stress (Yield, 73°F) | 8700 | psi | ISO 527-2/50 |
| Tensile Stress (Break, 73°F) | 7250 | psi | ISO 527-2/50 |
| Tensile Strain (Yield, 73°F) | 5.0 | % | ISO 527-2/50 |
| Nominal Tensile Strain at Break (73°F) | > 50 | % | ISO 527-2/50 |
| Flexural Modulus ³ (73°F) | 312000 | psi | ISO 178 |
| Flexural Stress ³ | | | ISO 178 |
| 3.5% Strain, 73°F | 10200 | psi | |
| 73°F | 11600 | psi | |
| Flexural Strain at Flexural Strength ⁴ (73°F) | 6.0 | % | ISO 178 |
| Impact | Nominal Value | Unit | Test Method |
| Charpy Notched Impact Strength | | | ISO 179/1eA |
| -22°F | 19 | ft·lb/in ² | |
| 73°F | 29 | ft·lb/in ² | |
| Charpy Unnotched Impact Strength | | | ISO 179/1eU |
| -22°F | No Break | | |
| 73°F | No Break | | |
| Notched Izod Impact Strength | | | ISO 180/A |
| -40°F | 9.5 | ft·lb/in ² | |
| -22°F | 17 | ft·lb/in ² | |
| -4°F | 21 | ft·lb/in ² | |



| | | |
|---|-----------------------------------|--------------------|
| 73°F | 24 ft·lb/in ² | |
| Unnotched Izod Impact Strength | | ISO 180 |
| -22°F | No Break | |
| 73°F | No Break | |
| Multi-Axial Instrumented Impact Energy | | ISO 6603-2 |
| -22°F | 42.8 ft·lb | |
| 73°F | 34.7 ft·lb | |
| Multi-Axial Instrumented Impact Peak Force | | ISO 6603-2 |
| -22°F | 1120 lbf | |
| 73°F | 854 lbf | |
| Hardness | Nominal Value Unit | Test Method |
| Ball Indentation Hardness | 15700 psi | ISO 2039-1 |
| Thermal | Nominal Value Unit | Test Method |
| Deflection Temperature Under Load (66 psi, Unannealed) | 230 °F | ISO 75-2/B |
| Deflection Temperature Under Load (264 psi, Unannealed) | 185 °F | ISO 75-2/A |
| Vicat Softening Temperature | 259 °F | ISO 306/B120 |
| CLTE - Flow (73 to 131°F) | 5.0E-5 in/in/°F | ISO 11359-2 |
| CLTE - Transverse (73 to 131°F) | 5.0E-5 in/in/°F | ISO 11359-2 |
| Thermal Conductivity ⁵ (73°F) | 1.4 Btu·in/hr/ft ² /°F | ISO 8302 |
| Electrical | Nominal Value Unit | Test Method |
| Surface Resistivity | > 1.0E+17 ohms | IEC 60093 |
| Volume Resistivity (73°F) | > 1.0E+17 ohms·cm | IEC 60093 |
| Electric Strength (73°F, 0.0394 in) | 760 V/mil | IEC 60243-1 |
| Relative Permittivity | | IEC 60250 |
| 73°F, 100 Hz | 3.20 | |
| 73°F, 1 MHz | 3.00 | |
| Dissipation Factor | | IEC 60250 |
| 73°F, 100 Hz | 7.0E-4 | |
| 73°F, 1 MHz | 4.5E-3 | |
| Comparative Tracking Index | | IEC 60112 |
| Solution A | 600 V | |
| Solution B | 125 V | |
| Flammability | Nominal Value Unit | Test Method |
| Flame Rating (0.06 in, Internal Test) | HB | UL 94 |
| Glow Wire Flammability Index (0.08 in) | 1380 °F | IEC 60695-2-12 |
| Oxygen Index ⁶ | 21 % | ISO 4589-2 |

Processing Information

| | Nominal Value Unit |
|------------------------------------|---------------------|
| Injection | |
| Drying Temperature - Dry Air Dryer | 221 °F |
| Drying Time - Dry Air Dryer | 2.0 to 4.0 hr |
| Suggested Max Moisture | < 0.020 % |
| Suggested Shot Size | 30 to 70 % |
| Rear Temperature | 446 to 464 °F |
| Middle Temperature | 464 to 482 °F |
| Front Temperature | 482 to 500 °F |
| Nozzle Temperature | 500 to 518 °F |
| Processing (Melt) Temp | 482 to 518 °F |
| Mold Temperature | 140 to 176 °F |
| Back Pressure | 725 to 1450 psi |
| Vent Depth | 9.8E-4 to 3.0E-3 in |

Injection Notes

Peripheral Screw Speed: 0.1-0.2 m/s
 Hold Pressure (% of Injection Pressure): 50 - 75%
 Standard Melt Temperature: 270°C

