



# Makroblend UT 403

Impact modified grades / General purpose

UV-stabilized, high-flow, impact-modified polycarbonate/PET polyester blend with UL 746C approval

ISO Shortname

| Property                                                 | Test Condition                                     | Unit                | Standard    | Value       |
|----------------------------------------------------------|----------------------------------------------------|---------------------|-------------|-------------|
| <b>Rheological properties</b>                            |                                                    |                     |             |             |
| Spiral flow length                                       | 0.100 in, 525 °F melt temperature                  | in                  | Bayer test  | 28          |
| Mold shrinkage, flow/cross to flow                       |                                                    | in/in               | ASTM D 955  | 0.006-0.008 |
| Melt flow rate                                           | 265 °C; 5 kg                                       | g/(10 min)          | ASTM D 1238 | 24 - 34     |
| <b>Mechanical properties (23 °C/50 % r.h.)</b>           |                                                    |                     |             |             |
| Tensile stress at yield                                  |                                                    | lb/in <sup>2</sup>  | ASTM D 638  | 8100        |
| Tensile elongation at yield                              |                                                    | %                   | ASTM D 638  | 5.0         |
| Tensile elongation at break                              |                                                    | %                   | ASTM D 638  | 151         |
| Tensile stress at break                                  |                                                    | lb/in <sup>2</sup>  | ASTM D 638  | 8000        |
| Izod notched impact strength                             | 73 °F; 0.125 in                                    | ft-lb/in            | ASTM D 256  | 15          |
| Izod notched impact strength                             | -20 °F; 0.125 in                                   | ft-lb/in            | ASTM D 256  | 3           |
| Izod notched impact strength                             | -40 °F; 0.125 in                                   | ft-lb/in            | ASTM D 256  | 2           |
| Izod notched impact strength                             | 73 °F; 0.250 in                                    | ft-lb/in            | ASTM D 256  | 4.0         |
| Flexural modulus                                         | -                                                  | lb/in <sup>2</sup>  | ASTM D 790  | 338000      |
| Flexural stress at 5 % strain                            |                                                    | lb/in <sup>2</sup>  | ASTM D 790  | 12400       |
| Instrumented impact, Total energy                        | 73 °F; 0.125 in; 0.5-in dart; 3-in clamp; 7.6 mph  | ft-lb               | ASTM D 3763 | 41          |
| Instrumented impact, Total energy                        | -20 °F; 0.125 in; 0.5-in dart; 3-in clamp; 15 mph  | ft-lb               | ASTM D 3763 | 42          |
| Instrumented impact, Total energy                        | -40 °F; 0.125 in; 0.5-in dart; 3-in clamp; 7.6 mph | ft-lb               | ASTM D 3763 | 41          |
| Rockwell hardness                                        |                                                    | R Scale             | ASTM D 785  | 121         |
| <b>Thermal properties</b>                                |                                                    |                     |             |             |
| Deflection temperature under load, Unannealed            | 264 psi; 0.250 in                                  | °F                  | ASTM D 648  | 248         |
| Deflection temperature under load, Unannealed            | 66 psi; 0.250 in                                   | °F                  | ASTM D 648  | 273         |
| Coefficient of linear thermal expansion, flow/cross-flow |                                                    | in/in/°F            | ASTM D 696  | 3.7E-05     |
| UL94 Flame Class                                         | Thickness tested: 1.5 mm                           | Class               | UL 94       | HB          |
| UL94 Flame Class                                         | Thickness tested: 3.0 mm                           | Class               | UL 94       | HB          |
| Relative temperature index, mechanical with impact       | Thickness tested: 1.5 mm                           | °C                  | UL 746 B    | 75          |
| Relative temperature index, electrical                   | Thickness tested: 1.5 mm                           | °C                  | UL 746 B    | 75          |
| Relative temperature index, mechanical without impact    | Thickness tested: 1.5 mm                           | °C                  | UL 746 B    | 75          |
| <b>Electrical properties (23 °C/50 % r.h.)</b>           |                                                    |                     |             |             |
| Dissipation factor, Tinfoil electrodes                   | 1 MHz                                              | -                   | ASTM D 150  | 0.009       |
| Volume resistivity, Tinfoil electrodes                   |                                                    | Ohm·m               | ASTM D 257  | >7.4E15     |
| Dielectric strength                                      | Short time under oil at 73 °F                      | V/mil               | ASTM D 149  | 704         |
| <b>Other properties (23 °C)</b>                          |                                                    |                     |             |             |
| Water absorption                                         | 73 °F; immersion to saturation                     | %                   | ASTM D 570  | 0.25        |
| Water absorption                                         | 73 °F; immersion 24 h                              | %                   | ASTM D 570  | 0.11        |
| Specific volume                                          |                                                    | in <sup>3</sup> /lb | ASTM D 792  | 22.7        |
| Density                                                  |                                                    | lb/in <sup>3</sup>  | ASTM D 792  | 0.044       |