

# Bayblend® FR1514

## FR grades / Non reinforced

(PC+ABS)-Blend; flame retardant; high heat resistance; Vicat/B 120 temperature = 136 °C; ball indentation temperature >= 125 °C; UL recognition 94 V-0 at 1.5 mm; suitable as supporting material for energized parts

## ISO Shortname

PC+ABS-FR(40)

| Property                                              | Test Condition                  | Unit                    | Standard          | typical Value |
|-------------------------------------------------------|---------------------------------|-------------------------|-------------------|---------------|
| <b>Rheological properties</b>                         |                                 |                         |                   |               |
| C Melt volume-flow rate                               | 260 °C/ 5 kg                    | cm <sup>3</sup> /10 min | ISO 1133          | 19            |
| Melt viscosity                                        | 1000 s <sup>-1</sup> / 260 °C   | Pa·s                    | b.o. ISO 11443-A  | 450           |
| Molding shrinkage, parallel                           | 150x105x3 mm/ 260 °C / MT 80 °C | %                       | b.o. ISO 2577     | 0.5 - 0.7     |
| Molding shrinkage, normal                             | 150x105x3 mm/ 260 °C / MT 80 °C | %                       | b.o. ISO 2577     | 0.5 - 0.7     |
| <b>Mechanical properties (23 °C/50 % r. h.)</b>       |                                 |                         |                   |               |
| C Tensile modulus                                     | 1 mm/min                        | MPa                     | ISO 527-1,-2      | 2400          |
| C Yield stress                                        | 50 mm/min                       | MPa                     | ISO 527-1,-2      | 63            |
| C Yield strain                                        | 50 mm/min                       | %                       | ISO 527-1,-2      | 5             |
| Stress at break                                       | 50 mm/min                       | MPa                     | ISO 527-1,-2      | 57            |
| Strain at break                                       | 50 mm/min                       | %                       | b.o. ISO 527-1,-2 | > 50          |
| Izod impact strength                                  | 23 °C                           | kJ/m <sup>2</sup>       | ISO 180-U         | N             |
| Izod notched impact strength                          | 23 °C                           | kJ/m <sup>2</sup>       | ISO 180-A         | 45            |
| Izod notched impact strength                          | -30 °C                          | kJ/m <sup>2</sup>       | ISO 180-A         | 15            |
| <b>Thermal properties</b>                             |                                 |                         |                   |               |
| 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       | 126           |
| C Vicat softening temperature                         | 50 N; 50 °C/h                   | °C                      | ISO 306           | 134           |
| Vicat softening temperature                           | 50 N; 120 °C/h                  | °C                      | ISO 306           | 136           |
| C Coefficient of linear thermal expansion, parallel   | 23 to 55 °C                     | 10 <sup>-4</sup> /K     | ISO 11359-1,-2    | 0.68          |
| C Coefficient of linear thermal expansion, transverse | 23 to 55 °C                     | 10 <sup>-4</sup> /K     | ISO 11359-1,-2    | 0.68          |
| C Burning behavior UL 94 (1.5 mm) [UL recognition]    | 1.5 mm                          | Class                   | UL 94             | V-0           |
| C Burning behavior UL 94-5V [UL recognition]          | 2.0 mm                          | Class                   | UL 94             | 5VB           |
| Burning behavior UL 94-5V [UL recognition]            | 3.0 mm                          | Class                   | UL 94             | 5VA           |
| C Oxygen index                                        | Method A                        | %                       | ISO 4589-2        | 30            |
| <b>Electrical properties (23 °C/50 % r. h.)</b>       |                                 |                         |                   |               |
| C Relative permittivity                               | 100 Hz                          | -                       | IEC 60250         | 3.2           |
| C Relative permittivity                               | 1 MHz                           | -                       | IEC 60250         | 3.1           |
| C Dissipation factor                                  | 100 Hz                          | 10 <sup>-4</sup>        | IEC 60250         | 20            |
| C Dissipation factor                                  | 1 MHz                           | 10 <sup>-4</sup>        | IEC 60250         | 85            |
| C Volume resistivity                                  |                                 | Ohm·m                   | IEC 60093         | 1E15          |
| C Surface resistivity                                 |                                 | Ohm                     | IEC 60093         | 1E17          |
| C Electrical strength                                 | 1 mm                            | kV/mm                   | IEC 60243-1       | 35            |
| C Comparative tracking index CTI                      | Solution A                      | Rating                  | IEC 60112         | 350           |
| <b>Other properties (23 °C)</b>                       |                                 |                         |                   |               |
| C Water absorption (saturation value)                 | Water at 23 °C                  | %                       | ISO 62            | 0.5           |
| C Water absorption (equilibrium value)                | 23 °C; 50 % r. h.               | %                       | ISO 62            | 0.2           |
| C Density                                             |                                 | kg/m <sup>3</sup>       | ISO 1183-1        | 1190          |
| <b>Processing conditions for test specimens</b>       |                                 |                         |                   |               |
| C Injection molding-Melt temperature                  |                                 | °C                      | ISO 294           | 260           |
| C Injection molding-Mold temperature                  |                                 | °C                      | ISO 294           | 80            |
| C Injection molding-Injection velocity                |                                 | mm/s                    | ISO 294           | 240           |

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| Property                                            | Test Condition | Unit | Standard | typical Value |
|-----------------------------------------------------|----------------|------|----------|---------------|
| <b>Recommended Processing and Drying Conditions</b> |                |      |          |               |
| Melt Temperatures                                   |                | °C   | -        | 240 - 280     |
| Standard Melt Temperature                           |                | °C   | -        | 260           |
| Barrel Temperatures - Rear                          |                | °C   | -        | 220 - 230     |
| Barrel Temperatures - Middle                        |                | °C   | -        | 225 - 235     |
| Barrel Temperatures - Front                         |                | °C   | -        | 230 - 240     |
| Barrel Temperatures - Nozzle                        |                | °C   | -        | 255 - 265     |
| Mold Temperatures                                   |                | °C   | -        | 60 - 90       |
| Hold Pressure (% of injection pressure)             |                | %    | -        | 50 - 75       |
| Plastic Back Pressure (specific)                    |                | bar  | -        | 50 - 150      |
| Peripheral Screw Speed                              |                | m/s  | -        | 0.05 - 0.2    |
| Shot-to-Cylinder Size                               |                | %    | -        | 30 - 70       |
| Dry Air Drying Temperature                          |                | °C   | -        | 80            |
| Dry Air Drying Time                                 |                | h    | -        | 4             |
| Moisture Content max. (%)                           |                | %    | -        | <= 0,02       |
| Vent Depth                                          |                | mm   | -        | 0.025 - 0.075 |

**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