

# Covestro Bayblend® FR3010 IF

(PC+ABS)-Blend; flame retardant; Vicat/B 120 temperature = 108 °C; increased heat resistance; UL recognition 94 5VB (1.5 mm); glow wire temperature (GWFI): 960 °C at 2.0 mm

As of 1 September 2015, Bayer MaterialScience was separated from Bayer AG and officially adopted its new name – Covestro.

| Physical Properties                | Metric                                                   | English                                                  | Comments                         |
|------------------------------------|----------------------------------------------------------|----------------------------------------------------------|----------------------------------|
| Density                            | 1.18 g/cc                                                | 0.0426 lb/in <sup>3</sup>                                | ISO 1183-1                       |
| Moisture Absorption at Equilibrium | 0.20 %                                                   | 0.20 %                                                   | ISO 62, 50% RH                   |
| Water Absorption at Saturation     | 0.50 %                                                   | 0.50 %                                                   | ISO 62                           |
| Viscosity                          | 210000 cP<br>@Shear Rate 1000 1/s,<br>Temperature 260 °C | 210000 cP<br>@Shear Rate 1000 1/s,<br>Temperature 500 °F | melt viscosity; b.o. ISO 11443-A |
| Linear Mold Shrinkage, Flow        | 0.0050 - 0.0070 cm/cm<br>@Thickness 3.00 mm              | 0.0050 - 0.0070 in/in<br>@Thickness 0.118 in             | 150x105x3mm; b.o. ISO 2577       |
| Linear Mold Shrinkage, Transverse  | 0.0050 - 0.0070 cm/cm<br>@Thickness 3.00 mm              | 0.0050 - 0.0070 in/in<br>@Thickness 0.118 in             | 150x105x3mm; b.o. ISO 2577       |
| Melt Flow                          | 20.06 g/10 min<br>@Load 5.00 kg,<br>Temperature 240 °C   | 20.06 g/10 min<br>@Load 11.0 lb,<br>Temperature 464 °F   | ISO 1133                         |

| Mechanical Properties        | Metric                                         | English                                            | Comments                     |
|------------------------------|------------------------------------------------|----------------------------------------------------|------------------------------|
| Tensile Strength at Break    | 50.0 MPa                                       | 7250 psi                                           | 50 mm/min; ISO 527-1,-2      |
| Tensile Strength, Yield      | 60.0 MPa                                       | 8700 psi                                           | 50 mm/min; ISO 527-1,-2      |
| Elongation at Break          | >= 50 %                                        | >= 50 %                                            | 50 mm/min; b.o. ISO 527-1,-2 |
| Elongation at Yield          | 4.0 %                                          | 4.0 %                                              | 50 mm/min; ISO 527-1,-2      |
| Tensile Modulus              | 2.70 GPa                                       | 392 ksi                                            | 1 mm/min; ISO 527-1,-2       |
| Izod Impact, Notched (ISO)   | 25.0 kJ/m <sup>2</sup><br>@Temperature 23.0 °C | 11.9 ft-lb/in <sup>2</sup><br>@Temperature 73.4 °F | ISO 180-A                    |
| Izod Impact, Unnotched (ISO) | NB<br>@Temperature 23.0 °C                     | NB<br>@Temperature 73.4 °F                         | ISO 180-U                    |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| CTE, linear, Parallel to Flow               | 76.0 $\mu\text{m}/\text{m}^{\circ}\text{C}$<br>@Temperature 23.0 - 55.0 $^{\circ}\text{C}$ | 42.2 $\mu\text{in}/\text{in}^{\circ}\text{F}$<br>@Temperature 73.4 - 131 $^{\circ}\text{F}$ | ISO 11359-1,-2                            |
|---------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------|
| CTE, linear, Transverse to Flow             | 80.0 $\mu\text{m}/\text{m}^{\circ}\text{C}$<br>@Temperature 23.0 - 55.0 $^{\circ}\text{C}$ | 44.4 $\mu\text{in}/\text{in}^{\circ}\text{F}$<br>@Temperature 73.4 - 131 $^{\circ}\text{F}$ | ISO 11359-1,-2                            |
| Deflection Temperature at 0.46 MPa (66 psi) | 98.0 $^{\circ}\text{C}$                                                                    | 208 $^{\circ}\text{F}$                                                                      | ISO 75-1,-2                               |
| Deflection Temperature at 1.8 MPa (264 psi) | 88.0 $^{\circ}\text{C}$                                                                    | 190 $^{\circ}\text{F}$                                                                      | ISO 75-1,-2                               |
| Vicat Softening Point                       | 106 $^{\circ}\text{C}$<br>@Load 5.10 kg                                                    | 223 $^{\circ}\text{F}$<br>@Load 11.2 lb                                                     | 50 $^{\circ}\text{C}/\text{h}$ ; ISO 306  |
|                                             | 108 $^{\circ}\text{C}$<br>@Load 5.10 kg                                                    | 226 $^{\circ}\text{F}$<br>@Load 11.2 lb                                                     | 120 $^{\circ}\text{C}/\text{h}$ ; ISO 306 |
| Flammability, UL94                          | V-0<br>@Thickness 1.50 mm                                                                  | V-0<br>@Thickness 0.0591 in                                                                 |                                           |
|                                             | 5VB<br>@Thickness 2.20 mm                                                                  | 5VB<br>@Thickness 0.0866 in                                                                 | UL 94-5V                                  |
|                                             | 5VA<br>@Thickness 3.00 mm                                                                  | 5VA<br>@Thickness 0.118 in                                                                  | UL 94-5V                                  |
| Processing Properties                       | Metric                                                                                     | English                                                                                     | Comments                                  |
| Melt Temperature                            | 240 $^{\circ}\text{C}$                                                                     | 464 $^{\circ}\text{F}$                                                                      | Injection molding; ISO 294                |
| Mold Temperature                            | 80.0 $^{\circ}\text{C}$                                                                    | 176 $^{\circ}\text{F}$                                                                      | Injection molding; ISO 294                |
| Injection Velocity                          | 240 mm/sec                                                                                 | 9.45 in/sec                                                                                 | ISO 294                                   |