



# Apec® FR1892

Flame retardant grades / Non reinforced

MVR (330°C/2.16kg) 18 cm³/10 min; easy release; softening temperature (VST/B 120)=183°C; easy-flowing; injection molding - melt temperature 330 - 340°C; Visors for firemen's helmets

## ISO Shortname

| Property                                              | Test Condition    | Unit                | Standard       | typical Value |
|-------------------------------------------------------|-------------------|---------------------|----------------|---------------|
| <b>Rheological properties</b>                         |                   |                     |                |               |
| C Melt volume-flow rate                               | 330 °C; 2.16 kg   | cm³/10 min          | ISO 1133       | 18            |
| Melt mass-flow rate                                   | 330 °C; 2.16 kg   | g/10 min            | ISO 1133       | 19            |
| <b>Mechanical properties (23 °C/50 % r. h.)</b>       |                   |                     |                |               |
| C Tensile modulus                                     | 1 mm/min          | MPa                 | ISO 527-1,-2   | 2450          |
| C Yield stress                                        | 50 mm/min         | MPa                 | ISO 527-1,-2   | 74            |
| C Yield strain                                        | 50 mm/min         | %                   | ISO 527-1,-2   | 6.6           |
| C Nominal strain at break                             | 50 mm/min         | %                   | ISO 527-1,-2   | >50           |
| C Charpy impact strength                              | 23 °C             | kJ/m²               | ISO 179-1eU    | N             |
| C Charpy impact strength                              | -30 °C            | kJ/m²               | ISO 179-1eU    | N             |
| <b>Thermal properties</b>                             |                   |                     |                |               |
| C Temperature of deflection under load                | 1.80 MPa          | °C                  | ISO 75-1,-2    | 158           |
| C Temperature of deflection under load                | 0.45 MPa          | °C                  | ISO 75-1,-2    | 173           |
| Vicat softening temperature                           | 50 N; 120 °C/h    | °C                  | ISO 306        | 183           |
| C Coefficient of linear thermal expansion, parallel   | 23 to 55 °C       | 10 <sup>-4</sup> /K | ISO 11359-1,-2 | 0.65          |
| C Coefficient of linear thermal expansion, transverse | 23 to 55 °C       | 10 <sup>-4</sup> /K | ISO 11359-1,-2 | 0.65          |
| C Burning behavior UL 94 (1.5 mm)                     |                   | Class               | UL 94          | V-2           |
| C Burning behavior UL 94                              | 3.0 mm            | Class               | UL 94          | V-0           |
| <b>Electrical properties (23 °C/50 % r. h.)</b>       |                   |                     |                |               |
| C Relative permittivity                               | 100 Hz            | -                   | IEC 60250      | 2.9           |
| C Relative permittivity                               | 1 MHz             | -                   | IEC 60250      | 2.8           |
| C Dissipation factor                                  | 100 Hz            | 10 <sup>-4</sup>    | IEC 60250      | 10            |
| C Dissipation factor                                  | 1 MHz             | 10 <sup>-4</sup>    | IEC 60250      | 80            |
| C Volume resistivity                                  |                   | Ohm·m               | IEC 60093      | 1E14          |
| C Surface resistivity                                 |                   | Ohm                 | IEC 60093      | 1E15          |
| C Electrical strength                                 | 1 mm              | kV/mm               | IEC 60243-1    | 35            |
| C Comparative tracking index CTI                      | Solution A        | Rating              | IEC 60112      | 225           |
| Comparative tracking index CTI M                      | Solution B        | Rating              | IEC 60112      | 100           |
| Electrolytic corrosion                                |                   | Rating              | IEC 60426      | A1            |
| <b>Other properties (23 °C)</b>                       |                   |                     |                |               |
| C Water absorption (saturation value)                 | Water at 23 °C    | %                   | ISO 62         | 0.3           |
| C Water absorption (equilibrium value)                | 23 °C; 50 % r. h. | %                   | ISO 62         | 0.12          |
| C Density                                             |                   | kg/m³               | ISO 1183-1     | 1150          |
| <b>Material specific properties</b>                   |                   |                     |                |               |
| Refractive index                                      | Procedure A       | -                   | ISO 489        | 1.573         |
| Luminous transmittance (clear transparent materials)  | 1 mm              | %                   | ISO 13468-2    | 89            |
| <b>Processing conditions for test specimens</b>       |                   |                     |                |               |
| C Injection molding-Melt temperature                  |                   | °C                  | ISO 294        | 330           |
| C Injection molding-Mold temperature                  |                   | °C                  | ISO 294        | 100           |
| 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

