

## Covestro Apec® FR1892 High-Heat Polycarbonate

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate, High Heat , Polycarbonate, Molded , Polycarbonate, Unreinforced, Flame Retardant

### Material Notes:

This linear, amorphous copolycarbonate is most suitable for applications that must withstand high temperatures and exhibit toughness, impact resistance and high transparency. These properties, along with good dimensional stability, weatherability and flowability, allow Apec® to be utilized as a replacement for glass, metal or standard polycarbonate in high-heat applications. Main characteristics: • High toughness • Heat resistance • Glass-like transparency • High dimensional accuracy and stability • Good metallization • Good flowability • Good electrical properties. Grade characteristics: • Flame retardant • Easy release Application: Visors for firemen's helmets As of 1 September 2015, Bayer Material Science was separated from Bayer AG and officially adopted its new name – Covestro.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Covestro-Apec-FR1892-High-Heat-Polycarbonate.php](http://www.lookpolymers.com/polymer_Covestro-Apec-FR1892-High-Heat-Polycarbonate.php)

| Physical Properties                | Metric  | English   | Comments       |
|------------------------------------|---|---|----------------|
| Density                            | 1.15 g/cc   | 0.0415 lb/in <sup>3</sup>                           | ISO 1183-1     |
| Moisture Absorption at Equilibrium | 0.12 %  | 0.12 %  | ISO 62, 50% RH |
| Water Absorption at Saturation     | 0.30 %  | 0.30 %  | ISO 62         |
| Melt Flow                          | 19 g/10 min<br>@Load 2.16 kg,<br>Temperature 330 °C | 19 g/10 min<br>@Load 4.76 lb,<br>Temperature 626 °F | ISO 1133       |

| Mechanical Properties   | Metric                      | English                     | Comments                         |
|-------------------------|-----------------------------|-----------------------------|----------------------------------|
| Tensile Strength, Yield | 74.0 MPa                    | 10700 psi                   | 50 mm/min; ISO 527-1,-2          |
| Elongation at Break     | >= 50 %                     | >= 50 %                     | Nominal, 50 mm/min; ISO 527-1,-2 |
| Elongation at Yield     | 6.6 %                       | 6.6 %                       | 50 mm/min; ISO 527-1,-2          |
| Tensile Modulus         | 2.45 GPa                    | 355 ksi                     | 1 mm/min; ISO 527-1,-2           |
| Charpy Impact Unnotched | NB<br>@Temperature 23.0 °C  | NB<br>@Temperature 73.4 °F  | ISO 179-1eU                      |
|                         | NB<br>@Temperature -30.0 °C | NB<br>@Temperature -22.0 °F | ISO 179-1eU                      |

| Thermal Properties            | Metric   | English   | Comments       |
|-------------------------------|--|---|----------------|
| CTE, linear, Parallel to Flow | 65.0 µm/m-°C<br>@Temperature 23.0 -<br>55.0 °C | 36.1 µin/in-°F<br>@Temperature 73.4 -<br>131 °F | ISO 11359-1,-2 |

| Thermal Properties                          | Metric<br>55.0 μm/m-°C      | English<br>25.1 μin/in-°F   | Comments         |
|---|-----------------------------|-----------------------------|------------------|
| CTE, linear, Transverse to Flow             | @Temperature 23.0 - 55.0 °C | @Temperature 73.4 - 131 °F  | ISO 11359-1,-2   |
| Maximum Service Temperature, Air            | 200 °C                      | 392 °F                      |                  |
| Deflection Temperature at 0.46 MPa (66 psi) | 173 °C                      | 343 °F                      | ISO 75-1,-2      |
| Deflection Temperature at 1.8 MPa (264 psi) | 158 °C                      | 316 °F                      | ISO 75-1,-2      |
| Vicat Softening Point                       | 183 °C<br>@Load 5.10 kg     | 361 °F<br>@Load 11.2 lb     | 120°C/h; ISO 306 |
| Minimum Service Temperature, Air            | -30.0 °C                    | -22.0 °F                    |                  |
| Flammability, UL94                          | V-2<br>@Thickness 1.50 mm   | V-2<br>@Thickness 0.0591 in |                  |
|   | V-0<br>@Thickness 3.00 mm   | V-0<br>@Thickness 0.118 in  |                  |

| Optical Properties    | Metric             | English              | Comments             |
|-----------------------|--------------------|----------------------|----------------------|
| Refractive Index      | 1.573              | 1.573                | Procedure A; ISO 489 |
| Transmission, Visible | 89 %               | 89 %                 | ISO 13468-2          |
|                       | @Thickness 1.00 mm | @Thickness 0.0394 in |                      |

| Electrical Properties | Metric                       | English                      | Comments    |
|-----------------------|------------------------------|------------------------------|-------------|
| Volume Resistivity    | 1.00e+16 ohm-cm              | 1.00e+16 ohm-cm              | IEC 60093   |
| Surface Resistance    | 1.00e+15 ohm                 | 1.00e+15 ohm                 | IEC 60093   |
| Dielectric Constant   | 2.8<br>@Frequency 1.00e+6 Hz | 2.8<br>@Frequency 1.00e+6 Hz | IEC 60250   |
|                       | 2.9<br>@Frequency 100 Hz     | 2.9<br>@Frequency 100 Hz     |             |
| Dielectric Strength   | 35.0 kV/mm                   | 889 kV/in                    | IEC 60243-1 |
|                       | @Thickness 1.00 mm           | @Thickness 0.0394 in         |             |
| Dissipation Factor    | 0.0010                       | 0.0010                       | IEC 60250   |
|                       | @Frequency 100 Hz            | @Frequency 100 Hz            |             |
|                       | 0.0080                       | 0.0080                       |             |

| Electrical Properties      | Metric<br>@Frequency 1.00e+6<br>Hz | English<br>@Frequency 1.00e+6<br>Hz | Comments                     |
|----------------------------|------------------------------------|-------------------------------------|------------------------------|
| Comparative Tracking Index | 100 V                              | 100 V                               | CTI M; Solution B; IEC 60112 |
|                            | 225 V                              | 225 V                               | Solution A; IEC 60112        |

| Processing Properties | Metric     | English     | Comments                   |
|-----------------------|------------|-------------|----------------------------|
| Melt Temperature      | 330 °C     | 626 °F      | Injection molding; ISO 294 |
| Mold Temperature      | 100 °C     | 212 °F      | Injection molding; ISO 294 |
| Injection Velocity    | 200 mm/sec | 7.87 in/sec | ISO 294                    |

| Descriptive Properties | Value | Comments  |
|------------------------|-------|-----------|
| Electrolytic Corrosion | A1    | IEC 60426 |

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China