



# Apec 1800

Standard grades / Base grade

High-heat polycarbonate with Vicat temperature of 365°F

ISO Shortname

| Property                                             | Test Condition                          | Unit               | Standard    | Value     |
|------------------------------------------------------|-----------------------------------------|--------------------|-------------|-----------|
| <b>Rheological properties</b>                        |                                         |                    |             |           |
| Melt flow rate                                       | 330 °C / 2.16 kg                        | g/(10 min)         | ASTM D 1238 | 10        |
| <b>Mechanical properties (23 °C/50 % r.h.)</b>       |                                         |                    |             |           |
| Tensile modulus                                      | 1 mm/min                                | lb/in <sup>2</sup> | ASTM D 638  | 330000    |
| Tensile stress at yield                              | -                                       | lb/in <sup>2</sup> | ASTM D 638  | 9400      |
| Tensile elongation at yield                          | -                                       | %                  | ASTM D 638  | 7.0       |
| Tensile elongation at break                          | -                                       | %                  | ASTM D 638  | > 50      |
| Unnotched impact strength                            | 73 °F, 0.125 in                         | ft-lb/in           | ASTM D 4812 | No Break  |
| Unnotched impact strength                            | -40 °F, 0.125 in                        | ft-lb/in           | ASTM D 4812 | No Break  |
| <b>Thermal properties</b>                            |                                         |                    |             |           |
| Deflection temperature under load, Unannealed        | 66 psi; 0.250 in                        | °F                 | ASTM D 648  | 345       |
| Vicat softening temperature                          | 50 N, 120 °C/h                          | °F                 | ASTM D 1525 | 365       |
| UL94 Flame Class                                     | Thickness tested: 1.5 mm                | Class              | UL 94       | HB        |
| UL94 Flame Class                                     | Thickness tested: 3.0 mm                | Class              | UL 94       | HB        |
| Oxygen index                                         |                                         | %                  | ASTM D 2863 | 24        |
| <b>Electrical properties (23 °C/50 % r.h.)</b>       |                                         |                    |             |           |
| Dissipation factor, Tinfoil electrodes               | 60 Hz                                   | -                  | ASTM D 150  | 0.001     |
| Dissipation factor, Tinfoil electrodes               | 1 MHz                                   | -                  | ASTM D 150  | 0.01      |
| Volume resistivity, Tinfoil electrodes               |                                         | Ohm·m              | ASTM D 257  | 1.0 E14   |
| Surface resistivity                                  |                                         | Ohm                | ASTM D 257  | 1.0 E +16 |
| Dielectric strength                                  | Short time under oil at 73 °F; 0.125 in | V/mil              | ASTM D 149  | > 400     |
| Dielectric constant, Tinfoil electrodes              | 60 Hz                                   | -                  | ASTM D 150  | 2.9       |
| Dielectric constant, Tinfoil electrodes              | 1 MHz                                   | -                  | ASTM D 150  | 2.9       |
| <b>Other properties (23 °C)</b>                      |                                         |                    |             |           |
| Water absorption                                     | 73 °F; immersion to saturation          | %                  | ASTM D 570  | 0.4       |
| Water absorption                                     | 73 °F; immersion 24 h                   | %                  | ASTM D 570  | 0.2       |
| Density                                              |                                         | lb/in <sup>3</sup> | ASTM D 792  | 1.15      |
| Specific gravity                                     |                                         | -                  | ASTM D 792  | 1.15      |
| <b>Material specific properties</b>                  |                                         |                    |             |           |
| Refractive index                                     |                                         | -                  | ASTM D 542  | 1.572     |
| Luminous transmittance (clear transparent materials) | 0.125 in                                | %                  | ASTM D 1003 | 88        |
| Haze for transparent materials                       | 0.125 in                                | %                  | ASTM D 1003 | 1.0       |

