

Covestro Makrolon® 6255 Polycarbonate

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

Material Notes:

Main characteristics:• High toughness• Good heat resistance• Glass-like transparency, optical quality• High dimensional accuracy and stability
Grade characteristics:• Flame retardancy• Low viscosity; easy release
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-Makrolon-6255-Polycarbonate.php

| Physical Properties | Metric | English | Comments |
|------------------------------------|---|---|--------------------------------|
| Bulk Density | 0.640 g/cc | 0.0231 lb/in ³ | pellets; ISO 60 |
| Density | 1.20 g/cc | 0.0434 lb/in ³ | 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 |
| Linear Mold Shrinkage, Flow | 0.0065 cm/cm @Thickness 2.00 mm | 0.0065 in/in @Thickness 0.0787 in | 60x60x2 mm; 500 bar; ISO 294-4 |
| Linear Mold Shrinkage, Transverse | 0.0070 cm/cm @Thickness 2.00 mm | 0.0070 in/in @Thickness 0.0787 in | 60x60x2 mm; 500 bar; ISO 294-4 |
| Melt Flow | 20 g/10 min @Load 1.20 kg, Temperature 300 °C | 20 g/10 min @Load 2.65 lb, Temperature 572 °F | ISO 1133 |

| Mechanical Properties | Metric | English | Comments |
|---------------------------|---------------------------------|--------------------------------------|----------------------------------|
| Puncture Resistance | 4900 N @Temperature 23.0 °C | 1100 lb (f) @Temperature 73.4 °F | ISO 6603-2 |
| | 5800 N @Temperature -30.0 °C | 1300 lb (f) @Temperature -22.0 °F | ISO 6603-2 |
| Ball Indentation Hardness | 115 MPa | 16700 psi | ISO 2039-1 |
| Tensile Strength at Break | 65.0 MPa | 9430 psi | 50 mm/min; ISO 527-1,-2 |
| Tensile Strength, Yield | 65.0 MPa | 9430 psi | 50 mm/min; ISO 527-1,-2 |
| Elongation at Break | >= 50 % | >= 50 % | Nominal, 50 mm/min; ISO 527-1,-2 |
| | 120 % | 120 % | 50 mm/min; b.o. ISO 527-1,-2 |

| Elongation at Yield Mechanical Properties | 6.0 % Metric | 6.0 % English | 50 mm/min; ISO 527-1,-2 Comments |
|--|---|--|-------------------------------------|
| Tensile Modulus | 2.40 GPa | 348 ksi | 1 mm/min; ISO 527-1,-2 |
| Flexural Strength | 97.0 MPa | 14100 psi | 2 mm/min; ISO 178 |
| Flexural Yield Strength | 73.0 MPa @Strain 3.50 % | 10600 psi @Strain 3.50 % | 2 mm/min; ISO 178 |
| Flexural Modulus | 2.40 GPa | 348 ksi | 2 mm/min; ISO 178 |
| Izod Impact, Notched (ISO) | 12.0 kJ/m ² @Thickness 3.20 mm, Temperature -30.0 °C | 5.71 ft-lb/in ² @Thickness 0.126 in, Temperature -22.0 °F | complete break; b.o. ISO 180-A |
| | 14.0 kJ/m ² @Thickness 3.20 mm, Temperature 23.0 °C | 6.66 ft-lb/in ² @Thickness 0.126 in, Temperature 73.4 °F | complete break; b.o. ISO 180-A |
| Charpy Impact Unnotched | NB @Temperature 23.0 °C | NB @Temperature 73.4 °F | ISO 179-1eU |
| | NB @Temperature -30.0 °C | NB @Temperature -22.0 °F | ISO 179-1eU |
| | NB @Temperature -60.0 °C | NB @Temperature -76.0 °F | ISO 179-1eU |
| Puncture Energy | 45.0 J @Temperature 23.0 °C | 33.2 ft-lb @Temperature 73.4 °F | ISO 6603-2 |
| | 50.0 J @Temperature -30.0 °C | 36.9 ft-lb @Temperature -22.0 °F | ISO 6603-2 |

| Thermal Properties | Metric | English | Comments |
|--|--|---|----------------------|
| CTE, linear, Parallel to Flow | 65.0 μm/m-°C @Temperature 23.0 - 55.0 °C | 36.1 μin/in-°F @Temperature 73.4 - 131 °F | ISO 11359-1,-2 |
| CTE, linear, Transverse to Flow | 65.0 μm/m-°C @Temperature 23.0 - 55.0 °C | 36.1 μin/in-°F @Temperature 73.4 - 131 °F | ISO 11359-1,-2 |
| Thermal Conductivity | 0.200 W/m-K | 1.39 BTU-in/hr-ft ² -°F | cross-flow; ISO 8302 |
| Hot Ball Pressure Test | 136 °C | 277 °F | IEC 60695-10-2 |
| Deflection Temperature at 0.46 MPa (66 psi) | 136 °C | 277 °F | ISO 75-1,-2 |

| Thermal Properties | Metric | English | Comments |
|---|-------------------------------|---------------------------------|----------------------------|
| Deflection Temperature at 1.8 MPa (264 psi) | 124 °C | 253 °F | ISO 75-1, 2 |
| Vicat Softening Point | 144 °C @Load 5.10 kg | 291 °F @Load 11.2 lb | 50°C/h; ISO 306 |
| UL RTI, Electrical | 125 °C | 257 °F | UL 746B |
| UL RTI, Mechanical with Impact | 115 °C | 239 °F | UL 746B |
| UL RTI, Mechanical without Impact | 125 °C | 257 °F | UL 746B |
| Flammability, UL94 | V-2 @Thickness 1.50 mm | V-2 @Thickness 0.0591 in | |
| | V-0 @Thickness 3.00 mm | V-0 @Thickness 0.118 in | |
| Flash Point | 460 °C | 860 °F | ASTM D 1929 |
| | 530 °C | 986 °F | self ignition; ASTM D 1929 |
| Oxygen Index | 34 % | 34 % | Method A; ISO 4589-2 |
| Glow Wire Test | 900 °C @Thickness 0.800 mm | 1650 °F @Thickness 0.0315 in | GWFI; IEC 60695-2-12 |
| | 960 °C @Thickness 1.50 mm | 1760 °F @Thickness 0.0591 in | GWFI; IEC 60695-2-12 |
| | 960 °C @Thickness 3.00 mm | 1760 °F @Thickness 0.118 in | GWFI; IEC 60695-2-12 |

| Electrical Properties | Metric | English | Comments |
|-----------------------|----------------------------------|-----------------------------------|-------------|
| Volume Resistivity | 1.00e+16 ohm-cm | 1.00e+16 ohm-cm | IEC 60093 |
| Surface Resistance | 1.00e+16 ohm | 1.00e+16 ohm | IEC 60093 |
| Dielectric Constant | 3.0 @Frequency 1.00e+6 Hz | 3.0 @Frequency 1.00e+6 Hz | IEC 60250 |
| | 3.1 @Frequency 100 Hz | 3.1 @Frequency 100 Hz | IEC 60250 |
| Dielectric Strength | 34.0 kV/mm @Thickness 1.00 mm | 864 kV/in @Thickness 0.0394 in | IEC 60243-1 |

| Electrical Properties | 0.00080 Metric | 0.00080 English | Comments |
|----------------------------|--------------------------|--------------------------|------------------------------|
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| | 0.0095 | 0.0095 | IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| Comparative Tracking Index | 125 V | 125 V | CTI M; Solution B; IEC 60112 |
| | 225 V | 225 V | Solution A; IEC 60112 |

| Processing Properties | Metric | English | Comments |
|-----------------------|------------|-------------|----------------------------|
| Melt Temperature | 280 °C | 536 °F | Injection molding; ISO 294 |
| Mold Temperature | 80.0 °C | 176 °F | Injection molding; ISO 294 |
| Injection Velocity | 200 mm/sec | 7.87 in/sec | ISO 294 |

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