

## SABIC Innovative Plastics Valox® IQ357M PBT+PC

Category : Polymer , Thermoplastic , Polycarbonate (PC) , Polycarbonate/Polybutylene Terephthalate (PBT) Blend, Unreinforced , Polyester, TP , Polybutylene Terephthalate (PBT)

### Material Notes:

Valox® Resin IQ357M: Environmentally responsible, low carbon footprint iQ® PBT + PC alloy. UL94 V-0 @0.63 mm. Impact modified, easy flow product with mold release.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-IQ357M-PBTPC.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-IQ357M-PBTPC.php)

| Physical Properties            | Metric                                                | English                                               | Comments                                |
|--------------------------------|-------------------------------------------------------|-------------------------------------------------------|-----------------------------------------|
| Specific Gravity               | 1.35 g/cc                                             | 1.35 g/cc                                             | ASTM D792                               |
| Density                        | 1.34 g/cc                                             | 0.0484 lb/in <sup>3</sup>                             | ISO 1183                                |
| Moisture Absorption            | 0.0800 %                                              | 0.0800 %                                              | 23Â°C / 50% RH; ISO 62                  |
| Water Absorption at Saturation | 0.080 %                                               | 0.080 %                                               | ISO 62                                  |
| Linear Mold Shrinkage, Flow    | 0.011 - 0.014 cm/cm<br>@Thickness 3.20 mm             | 0.011 - 0.014 in/in<br>@Thickness 0.126 in            | SABIC Method                            |
| Melt Flow                      | 9.3 g/10 min<br>@Load 5.00 kg,<br>Temperature 250 Â°C | 9.3 g/10 min<br>@Load 11.0 lb,<br>Temperature 482 Â°F | ASTM D1238                              |
| Melt Index of Compound         | 7.0 g/10 min<br>@Load 5.00 kg,<br>Temperature 250 Â°C | 7.0 g/10 min<br>@Load 11.0 lb,<br>Temperature 482 Â°F | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties     | Metric   | English  | Comments                     |
|---------------------------|----------|----------|------------------------------|
| Tensile Strength at Break | 40.0 MPa | 5800 psi | 50 mm/min; ISO 527           |
|                           | 41.0 MPa | 5950 psi | Type I, 50 mm/min; ASTM D638 |
| Tensile Strength, Yield   | 48.0 MPa | 6960 psi | Type I, 50 mm/min; ASTM D638 |
|                           | 48.0 MPa | 6960 psi | 50 mm/min; ISO 527           |
| Elongation at Break       | 74 %     | 74 %     | Type I, 50 mm/min; ASTM D638 |
|                           | 74.8 %   | 74.8 %   | 50 mm/min; ISO 527           |
| Elongation at Yield       | 4.6 %    | 4.6 %    | 50 mm/min; ISO 527           |
|                           | 4.9 %    | 4.9 %    | Type I, 50 mm/min; ASTM D638 |
| Tensile Modulus           | 2.00 GPa | 290 ksi  | 5 mm/min; ASTM D638          |

| Mechanical Properties      | Metric                 | English                | Comments                           |
|----------------------------|------------------------|------------------------|------------------------------------|
| Flexural Yield Strength    | 73.0 MPa               | 10600 psi              | 2 mm/min; ISO 178                  |
|                            | 75.0 MPa               | 10900 psi              | 1.3 mm/min, 50 mm span; ASTM D790  |
| Flexural Modulus           | 2.05 GPa               | 297 ksi                | 2 mm/min; ISO 178                  |
|                            | 2.10 GPa               | 305 ksi                | 1.3 mm/min, 50 mm span; ASTM D790  |
| Izod Impact, Notched       | 4.90 J/cm              | 9.18 ft-lb/in          | ASTM D256                          |
|                            | 1.67 J/cm              | 3.13 ft-lb/in          | ASTM D256                          |
|                            | @Temperature -30.0 Å°C | @Temperature -22.0 Å°F |                                    |
| Izod Impact, Notched (ISO) | 31.0 kJ/mÅ²            | 14.8 ft-lb/inÅ²        | 80*10*4; ISO 180/1A                |
|                            | 10.0 kJ/mÅ²            | 4.76 ft-lb/inÅ²        | 80*10*4; ISO 180/1A                |
|                            | @Temperature -30.0 Å°C | @Temperature -22.0 Å°F |                                    |
| Charpy Impact, Notched     | 3.40 J/cmÅ²            | 16.2 ft-lb/inÅ²        | Edgew 80*10*4 sp=62mm; ISO 179/1eA |
| Dart Drop, Total Energy    | 50.0 J                 | 36.9 ft-lb             | ASTM D3763                         |
|                            | @Temperature 23.0 Å°C  | @Temperature 73.4 Å°F  |                                    |

| Thermal Properties                          | Metric                        | English                      | Comments                         |
|---------------------------------------------|-------------------------------|------------------------------|----------------------------------|
| CTE, linear, Parallel to Flow               | 81.6 Åµm/m-Å°C                | 45.3 Åµin/in-Å°F             | ASTM E 831                       |
|                                             | @Temperature -40.0 - 40.0 Å°C | @Temperature -40.0 - 104 Å°F |                                  |
|                                             | 81.6 Åµm/m-Å°C                | 45.3 Åµin/in-Å°F             | ISO 11359-2                      |
|                                             | @Temperature -40.0 - 40.0 Å°C | @Temperature -40.0 - 104 Å°F |                                  |
| CTE, linear, Transverse to Flow             | 97.4 Åµm/m-Å°C                | 54.1 Åµin/in-Å°F             | ASTM E 831                       |
|                                             | @Temperature -40.0 - 40.0 Å°C | @Temperature -40.0 - 104 Å°F |                                  |
|                                             | 97.4 Åµm/m-Å°C                | 54.1 Åµin/in-Å°F             | ISO 11359-2                      |
|                                             | @Temperature -40.0 - 40.0 Å°C | @Temperature -40.0 - 104 Å°F |                                  |
| Deflection Temperature at 0.46 MPa (66 psi) | 122 Å°C                       | 252 Å°F                      | Flatw 80*10*4 sp=64mm; ISO 75/Bf |
|                                             | 127 Å°C                       | 261 Å°F                      |                                  |

| Thermal Properties                             | Metric<br>@ Thickness 3.20 mm  | English<br>@ Thickness 0.126 in | unannealed; ASTM D648<br>Comments |
|------------------------------------------------|--------------------------------|---------------------------------|-----------------------------------|
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 84.0 Â°C                       | 183 Â°F                         | Flatw 80*10*4 sp=64mm; ISO 75/Af  |
|                                                | 88.0 Â°C<br>@Thickness 3.20 mm | 190 Â°F<br>@Thickness 0.126 in  | unannealed; ASTM D648             |
| Vicat Softening Point                          | 130 Â°C                        | 266 Â°F                         | Rate B/50; ASTM D1525             |
|                                                | 130 Â°C                        | 266 Â°F                         | Rate B/50; ISO 306                |
|                                                | 133 Â°C                        | 271 Â°F                         | Rate B/120; ISO 306               |
| UL RTI, Electrical                             | 120 Â°C                        | 248 Â°F                         | UL 746B                           |
| UL RTI, Mechanical with Impact                 | 120 Â°C                        | 248 Â°F                         | UL 746B                           |
| UL RTI, Mechanical without Impact              | 140 Â°C                        | 284 Â°F                         | UL 746B                           |
| Flammability, UL94                             | V-0<br>@Thickness 0.630 mm     | V-0<br>@Thickness 0.0248 in     | UL 94 by SABIC-IP                 |
|                                                | 5VA<br>@Thickness 3.00 mm      | 5VA<br>@Thickness 0.118 in      | UL 94 by SABIC-IP                 |

| Electrical Properties                   | Metric        | English        | Comments |
|-----------------------------------------|---------------|----------------|----------|
| Arc Resistance                          | 60 - 120 sec  | 60 - 120 sec   | UL 746A  |
| Comparative Tracking Index              | 250 - 400 V   | 250 - 400 V    | UL 746A  |
| Hot Wire Ignition, HWI                  | 30 - 60 sec   | 30 - 60 sec    | UL 746A  |
| High Amp Arc Ignition, HAI              | 15 - 30 arcs  | 15 - 30 arcs   | UL 746A  |
| High Voltage Arc-Tracking Rate,<br>HVTR | >= 150 mm/min | >= 5.91 in/min | UL 746A  |

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