# VALOX™ FR RESIN 553U

REGION AMERICAS

## DESCRIPTION

30% GR PBT+PC, UL94 V-0. Reduced warpage characteristics.Applications; appliance handles, spotlights, electric motors, pump housings, etc.

## TYPICAL PROPERTY VALUES

Revision 20180906

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL | | | |
| Tensile Stress, brk, Type I, 5 mm/min | 110 | MPa | ASTM D 638 |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 179 | MPa | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span | 6890 | MPa | ASTM D 790 |
| Hardness, Rockwell R | 118 | - | ASTM D 785 |
| IMPACT | | | |
| Izod Impact, unnotched, 23°C | 640 | J/m | ASTM D 4812 |
| Izod Impact, notched, 23°C | 85 | J/m | ASTM D 256 |
| THERMAL | | | |
| HDT, 0.45 MPa, 6.4 mm, unannealed | 204 | °C | ASTM D 648 |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 160 | °C | ASTM D 648 |
| CTE, -40°C to 40°C, flow | 2.16E-05 | 1/°C | ASTM E 831 |
| CTE, 60°C to 138°C, flow | 2.16E-05 | 1/°C | ASTM E 831 |
| Relative Temp Index, Elec | 125 | °C | UL 746B |
| Relative Temp Index, Mech w/impact | 110 | °C | UL 746B |
| Relative Temp Index, Mech w/o impact | 125 | °C | UL 746B |
| PHYSICAL | | | |
| Specific Gravity | 1.58 | - | ASTM D 792 |
| Specific Volume | 0.63 | cm³/g | ASTM D 792 |
| Water Absorption, 24 hours | 0.07 | % | ASTM D 570 |
| Mold Shrinkage, flow, 1.5-3.2 mm | 0.3 – 0.5 | % | SABIC method |
| Mold Shrinkage, flow, 3.2-4.6 mm | 0.5 – 0.8 | % | SABIC method |
| Mold Shrinkage, xflow, 1.5-3.2 mm | 0.4 – 0.6 | % | SABIC method |
| Mold Shrinkage, xflow, 3.2-4.6 mm | 0.6 – 0.9 | % | SABIC method |
| ELECTRICAL | | | |
| Volume Resistivity | 4.3E+16 | Ohm-cm | ASTM D 257 |
| Dielectric Strength, in air, 3.2 mm | 18.8 | kV/mm | ASTM D 149 |
| Dielectric Strength, in oil, 1.6 mm | 25.5 | kV/mm | ASTM D 149 |
| Relative Permittivity, 100 Hz | 3.8 | - | ASTM D 150 |
| Relative Permittivity, 1 MHz | 3.7 | - | ASTM D 150 |
| Dissipation Factor, 100 Hz | 0.002 | - | ASTM D 150 |
| Dissipation Factor, 1 MHz | 0.02 | - | ASTM D 150 |
| Arc Resistance, Tungsten {PLC} | 6 | PLC Code | ASTM D 495 |
| Hot Wire Ignition {PLC} | 1 | PLC Code | UL 746A |
| High Voltage Arc Track Rate {PLC} | 3 | PLC Code | UL 746A |
| High Ampere Arc Ign, surface {PLC} | 3 | PLC Code | UL 746A |

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| Comparative Tracking Index (UL) {PLC} | 3 | PLC Code | UL 746A |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-0 Flame Class Rating | 0.86 | mm | UL 94 |
| UL Recognized, 94-5VA Rating | 2.31 | mm | UL 94 |
| Oxygen Index (LOI) | 37.1 | % | ASTM D 2863 |
| UV-light, water exposure/immersion | F1 | - | UL 746C |
| INJECTION MOLDING | | | |
| Drying Temperature | 120 | °C | |
| Drying Time | 3 – 4 | hrs | |
| Drying Time (Cumulative) | 12 | hrs | |
| Maximum Moisture Content | 0.02 | % | |
| Melt Temperature | 250 – 265 | °C | |
| Nozzle Temperature | 245 – 260 | °C | |
| Front - Zone 3 Temperature | 250 – 265 | °C | |
| Middle - Zone 2 Temperature | 245 – 260 | °C | |
| Rear - Zone 1 Temperature | 240 – 255 | °C | |
| Mold Temperature | 65 – 90 | °C | |
| Back Pressure | 0.3 – 0.7 | MPa | |
| Screw Speed | 50 – 80 | rpm | |
| Shot to Cylinder Size | 40 – 80 | % | |
| Vent Depth | 0.025 – 0.038 | mm | |

## DISCLAIMER