



**VALOX™ Resin 553U**  
**Americas: COMMERCIAL**

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

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard     |
|----------------------------------------------|---------------|---------------------|--------------|
| <b>MECHANICAL</b>                            |               |                     |              |
| Tensile Stress, brk, Type I, 5 mm/min        | 1120          | kgf/cm <sup>2</sup> | ASTM D 638   |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 1820          | kgf/cm <sup>2</sup> | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 70300         | kgf/cm <sup>2</sup> | ASTM D 790   |
| Hardness, Rockwell R                         | 118           | -                   | ASTM D 785   |
| <b>IMPACT</b>                                |               |                     |              |
| Izod Impact, unnotched, 23°C                 | 65            | cm-kgf/cm           | ASTM D 4812  |
| Izod Impact, notched, 23°C                   | 8             | cm-kgf/cm           | ASTM D 256   |
| <b>THERMAL</b>                               |               |                     |              |
| 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      |
| <b>PHYSICAL</b>                              |               |                     |              |
| Specific Gravity                             | 1.58          | -                   | ASTM D 792   |
| Specific Volume                              | 0.63          | cm <sup>3</sup> /g  | ASTM D 792   |
| Water Absorption, 24 hours                   | 0.07          | %                   | ASTM D 570   |
| Mold Shrinkage, flow, 1.5-3.2 mm (5)         | 0.3 - 0.5     | %                   | SABIC Method |
| Mold Shrinkage, flow, 3.2-4.6 mm (5)         | 0.5 - 0.8     | %                   | SABIC Method |
| Mold Shrinkage, xflow, 1.5-3.2 mm (5)        | 0.4 - 0.6     | %                   | SABIC Method |
| Mold Shrinkage, xflow, 3.2-4.6 mm (5)        | 0.6 - 0.9     | %                   | SABIC Method |
| <b>ELECTRICAL</b>                            |               |                     |              |
| Volume Resistivity                           | 4.3E+16       | Ohm-cm              | ASTM D 257   |





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| <b>ELECTRICAL</b>                           |               |          |             |
| 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     |
| Comparative Tracking Index (UL) {PLC}       | 3             | PLC Code | UL 746A     |
| <b>FLAME CHARACTERISTICS</b>                |               |          |             |
| UL Recognized, 94V-0 Flame Class Rating (3) | 0.86          | mm       | UL 94       |
| UL Recognized, 94-5VA Rating (3)            | 2.31          | mm       | UL 94       |
| Oxygen Index (LOI)                          | 37.1          | %        | ASTM D 2863 |
| UV-light, water exposure/immersion          | F1            | -        | UL 746C     |





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| PROCESSING PARAMETERS       | TYPICAL VALUE | Unit |
|-----------------------------|---------------|------|
| <b>Injection Molding</b>    |               |      |
| 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   |

