

# VALOX™ RESIN SHF4340

REGION EUROPE

## DESCRIPTION

20% GF Super High Flow PBT

## TYPICAL PROPERTY VALUES

Revision 20181128

| PROPERTIES                                 | TYPICAL VALUES | UNITS | TEST METHODS |
|--------------------------------------------|----------------|-------|--------------|
| <b>MECHANICAL</b>                          |                |       |              |
| Tensile Stress, yld, Type I, 5 mm/min      | 105            | MPa   | ASTM D638    |
| Tensile Stress, brk, Type I, 5 mm/min      | 105            | MPa   | ASTM D638    |
| Tensile Strain, yld, Type I, 5 mm/min      | 2              | %     | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min      | 2              | %     | ASTM D638    |
| Tensile Modulus, 5 mm/min                  | 6800           | MPa   | ASTM D638    |
| Tensile Stress, yield, 5 mm/min            | 110            | MPa   | ISO 527      |
| Tensile Stress, break, 5 mm/min            | 110            | MPa   | ISO 527      |
| Tensile Strain, yield, 5 mm/min            | 3              | %     | ISO 527      |
| Tensile Strain, break, 5 mm/min            | 3              | %     | ISO 527      |
| Tensile Modulus, 1 mm/min                  | 6700           | MPa   | ISO 527      |
| Flexural Stress, yield, 2 mm/min           | 160            | MPa   | ISO 178      |
| Flexural Stress, break, 2 mm/min           | 160            | MPa   | ISO 178      |
| Flexural Strain, break, 2 mm/min           | 3              | %     | ISO 178      |
| Flexural Modulus, 2 mm/min                 | 5600           | MPa   | ISO 178      |
| Ball Indentation Hardness, H358/30         | 185            | MPa   | ISO 2039-1   |
| Hardness, Rockwell R                       | 118            | -     | ISO 2039-2   |
| <b>IMPACT</b>                              |                |       |              |
| Charpy Impact, unnotched, 23°C             | 35             | kJ/m² | ISO 179/2C   |
| Charpy Impact, unnotched, -30°C            | 25             | kJ/m² | ISO 179/2C   |
| Izod Impact, unnotched, 23°C               | 350            | J/m   | ASTM D4812   |
| Izod Impact, unnotched, -30°C              | 330            | J/m   | ASTM D4812   |
| Izod Impact, notched, 23°C                 | 80             | J/m   | ASTM D256    |
| Izod Impact, notched, 0°C                  | 80             | J/m   | ASTM D256    |
| Izod Impact, notched, -30°C                | 80             | J/m   | ASTM D256    |
| Izod Impact, unnotched 80*10*4 +23°C       | 30             | kJ/m² | ISO 180/1U   |
| Izod Impact, notched 80*10*4 +23°C         | 8              | kJ/m² | ISO 180/1A   |
| Izod Impact, notched 80*10*4 0°C           | 8              | kJ/m² | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C         | 8              | kJ/m² | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm | 7              | kJ/m² | ISO 179/1eA  |
| Charpy Impact, notched, 23°C               | 9              | kJ/m² | ISO 179/2C   |
| Charpy Impact, notched, -30°C              | 9              | kJ/m² | ISO 179/2C   |
| <b>THERMAL</b>                             |                |       |              |
| Vicat Softening Temp, Rate A/50            | 220            | °C    | ASTM D1525   |
| Vicat Softening Temp, Rate B/50            | 205            | °C    | ASTM D1525   |
| HDT, 0.45 MPa, 3.2 mm, unannealed          | 223            | °C    | ASTM D648    |

| PROPERTIES                             | TYPICAL VALUES | UNITS      | TEST METHODS   |
|----------------------------------------|----------------|------------|----------------|
| HDT, 1.82 MPa, 3.2mm, unannealed       | 205            | °C         | ASTM D648      |
| CTE, -40°C to 40°C, flow               | 4.E-05         | 1/°C       | ISO 11359-2    |
| CTE, -40°C to 40°C, xflow              | 1.E-04         | 1/°C       | ISO 11359-2    |
| Ball Pressure Test, 125°C +/- 2°C      | PASSES         | -          | IEC 60695-10-2 |
| Vicat Softening Temp, Rate A/50        | 220            | °C         | ISO 306        |
| Vicat Softening Temp, Rate B/50        | 205            | °C         | ISO 306        |
| Vicat Softening Temp, Rate B/120       | 200            | °C         | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 223            | °C         | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm  | 205            | °C         | ISO 75/Af      |
| PHYSICAL                               |                |            |                |
| Specific Gravity                       | 1.44           | -          | ASTM D792      |
| Filler Content                         | 20             | %          | ASTM D229      |
| Mold Shrinkage on Tensile Bar, flow    | 0.3 – 0.7      | %          | SABIC method   |
| Mold Shrinkage on Tensile Bar, xflow   | 0.4 – 1        | %          | SABIC method   |
| Density                                | 1.44           | g/cm³      | ISO 1183       |
| Water Absorption, (23°C/saturated)     | 0.15           | %          | ISO 62-1       |
| Moisture Absorption (23°C / 50% RH)    | 0.03           | %          | ISO 62         |
| Melt Volume Rate, MVR at 250°C/2.16 kg | 40             | cm³/10 min | ISO 1133       |
| Melt Viscosity, 250°C, 1500 sec-1      | 95             | Pa-s       | ISO 11443      |
| Melt Viscosity, 260°C, 1500 sec-1      | 55             | Pa-s       | ISO 11443      |
| ELECTRICAL                             |                |            |                |
| Dielectric Strength, in oil, 0.8 mm    | 33             | kV/mm      | IEC 60243-1    |
| Dielectric Strength, in oil, 1.6 mm    | 25.3           | kV/mm      | IEC 60243-1    |
| Dielectric Strength, in oil, 3.2 mm    | 18.6           | kV/mm      | IEC 60243-1    |
| Dissipation Factor, 1 MHz              | 0.0182         | -          | IEC 60250      |
| Comparative Tracking Index             | 375            | V          | IEC 60112      |
| INJECTION MOLDING                      |                |            |                |
| Drying Temperature                     | 110 – 120      | °C         |                |
| Drying Time                            | 2 – 4          | Hrs        |                |
| Maximum Moisture Content               | 0.02           | %          |                |
| Melt Temperature                       | 250 – 270      | °C         |                |
| Nozzle Temperature                     | 240 – 260      | °C         |                |
| Front - Zone 3 Temperature             | 245 – 265      | °C         |                |
| Middle - Zone 2 Temperature            | 240 – 255      | °C         |                |
| Rear - Zone 1 Temperature              | 230 – 245      | °C         |                |
| Hopper Temperature                     | 40 – 60        | °C         |                |
| Mold Temperature                       | 40 – 100       | °C         |                |

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