



# VALOX<sup>TM</sup> RESIN SHF436HR

REGION AMERICAS

## DESCRIPTION

PBT, Super High Flow, 30% glass reinforced, hydrolytically resistant.

## TYPICAL PROPERTY VALUES

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 5 mm/min        | 111            | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 5 mm/min        | 111            | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 5 mm/min        | 2              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 5 mm/min        | 2              | %                 | ASTM D 638   |
| Tensile Modulus, 5 mm/min                    | 11900          | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 163            | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 8700           | MPa               | ASTM D 790   |
| Tensile Stress, yield, 5 mm/min              | 117            | MPa               | ISO 527      |
| Tensile Stress, break, 5 mm/min              | 117            | MPa               | ISO 527      |
| Tensile Strain, yield, 5 mm/min              | 2              | %                 | ISO 527      |
| Tensile Strain, break, 5 mm/min              | 2              | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 9490           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 165            | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 7720           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 92             | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 95             | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 6              | J                 | ASTM D 3763  |
| Izod Impact, notched 80*10*4 +23°C           | 8              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C           | 8              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 8              | kJ/m <sup>2</sup> | ISO 179/1eA  |
| <b>THERMAL</b>                               |                |                   |              |
| Vicat Softening Temp, Rate B/50              | 200            | °C                | ASTM D 1525  |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 214            | °C                | ASTM D 648   |
| CTE, -40°C to 40°C, flow                     | 1.E-04         | 1/°C              | ASTM E 831   |
| CTE, -40°C to 40°C, xflow                    | 3.E-05         | 1/°C              | ASTM E 831   |
| CTE, -40°C to 40°C, flow                     | 1.E-04         | 1/°C              | ISO 11359-2  |
| CTE, -40°C to 40°C, xflow                    | 3.E-05         | 1/°C              | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50              | 200            | °C                | ISO 306      |
| Vicat Softening Temp, Rate B/120             | 200            | °C                | ISO 306      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm        | 206            | °C                | ISO 75/Af    |
| <b>PHYSICAL</b>                              |                |                   |              |
| Specific Gravity                             | 1.53           | -                 | ASTM D 792   |
| Mold Shrinkage, flow, 3.2 mm                 | 0.3 – 0.5      | %                 | SABIC method |

| PROPERTIES                             | TYPICAL VALUES | UNITS      | TEST METHODS |
|----------------------------------------|----------------|------------|--------------|
| Melt Flow Rate, 250°C/2.16 kgf         | 30             | g/10 min   | ASTM D 1238  |
| Density                                | 1.53           | g/cm³      | ISO 1183     |
| Water Absorption, (23°C/sat)           | 0.28           | %          | ISO 62       |
| Moisture Absorption (23°C / 50% RH)    | 0.06           | %          | ISO 62       |
| Melt Volume Rate, MVR at 250°C/2.16 kg | 30             | cm³/10 min | ISO 1133     |
| 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         |              |