



# VALOX<sup>TM</sup> RESIN HX312C

REGION EUROPE

## DESCRIPTION

Unreinforced PBT with release. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. EtO and steam sterilizable.

## TYPICAL PROPERTY VALUES

| PROPERTIES                                   | TYPICAL VALUES | UNITS             | TEST METHODS |
|----------------------------------------------|----------------|-------------------|--------------|
| <b>MECHANICAL</b>                            |                |                   |              |
| Tensile Stress, yld, Type I, 50 mm/min       | 51             | MPa               | ASTM D 638   |
| Tensile Stress, brk, Type I, 50 mm/min       | 30             | MPa               | ASTM D 638   |
| Tensile Strain, yld, Type I, 50 mm/min       | 6              | %                 | ASTM D 638   |
| Tensile Strain, brk, Type I, 50 mm/min       | 25             | %                 | ASTM D 638   |
| Tensile Modulus, 50 mm/min                   | 2500           | MPa               | ASTM D 638   |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 82             | MPa               | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 2340           | MPa               | ASTM D 790   |
| Tensile Stress, yield, 50 mm/min             | 58             | MPa               | ISO 527      |
| Tensile Stress, break, 50 mm/min             | 30             | MPa               | ISO 527      |
| Tensile Strain, yield, 50 mm/min             | 6              | %                 | ISO 527      |
| Tensile Strain, break, 50 mm/min             | 25             | %                 | ISO 527      |
| Tensile Modulus, 1 mm/min                    | 2500           | MPa               | ISO 527      |
| Flexural Stress, yield, 2 mm/min             | 85             | MPa               | ISO 178      |
| Flexural Modulus, 2 mm/min                   | 2400           | MPa               | ISO 178      |
| <b>IMPACT</b>                                |                |                   |              |
| Izod Impact, notched, 23°C                   | 53             | J/m               | ASTM D 256   |
| Izod Impact, notched, -30°C                  | 53             | J/m               | ASTM D 256   |
| Instrumented Impact Total Energy, 23°C       | 40             | J                 | ASTM D 3763  |
| Izod Impact, unnotched 80*10*4 +23°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, unnotched 80*10*4 -30°C         | NB             | kJ/m <sup>2</sup> | ISO 180/1U   |
| Izod Impact, notched 80*10*4 +23°C           | 3              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Izod Impact, notched 80*10*4 -30°C           | 3              | kJ/m <sup>2</sup> | ISO 180/1A   |
| Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm   | 3              | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm  | 2              | kJ/m <sup>2</sup> | ISO 179/1eA  |
| Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm   | NB             | kJ/m <sup>2</sup> | ISO 179/1eU  |
| Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm  | NB             | kJ/m <sup>2</sup> | ISO 179/1eU  |
| <b>THERMAL</b>                               |                |                   |              |
| Vicat Softening Temp, Rate B/50              | 175            | °C                | ASTM D 1525  |
| HDT, 1.82 MPa, 3.2mm, unannealed             | 54             | °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                    | 1.E-04         | 1/°C              | ASTM E 831   |
| CTE, 23°C to 80°C, flow                      | 1.E-04         | 1/°C              | ISO 11359-2  |
| CTE, 23°C to 80°C, xflow                     | 1.E-04         | 1/°C              | ISO 11359-2  |
| Vicat Softening Temp, Rate B/50              | 175            | °C                | ISO 306      |

| PROPERTIES                              | TYPICAL VALUES | UNITS                   | TEST METHODS |
|-----------------------------------------|----------------|-------------------------|--------------|
| Vicat Softening Temp, Rate B/120        | 165            | °C                      | ISO 306      |
| HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm | 58             | °C                      | ISO 75/Ae    |
| PHYSICAL                                |                |                         |              |
| Specific Gravity                        | 1.31           | -                       | ASTM D 792   |
| Mold Shrinkage, flow, 3.2 mm            | 0.9 – 1.6      | %                       | SABIC method |
| Melt Flow Rate, 250°C/1.2 kgf           | 35             | g/10 min                | ASTM D 1238  |
| Density                                 | 1.31           | g/cm <sup>3</sup>       | ISO 1183     |
| Water Absorption, (23°C/sat)            | 0.35           | %                       | ISO 62       |
| Moisture Absorption (23°C / 50% RH)     | 0.08           | %                       | ISO 62       |
| Melt Volume Rate, MVR at 250°C/1.2 kg   | 31             | cm <sup>3</sup> /10 min | ISO 1133     |
| 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                      |              |