

# VALOX™ RESIN K4530

REGION EUROPE

## DESCRIPTION

15% glass reinforced PBT, Hydrolytically stable, High flow, Automotive connectors.

## TYPICAL PROPERTY VALUES

Revision 20190709

| PROPERTIES                                            | TYPICAL VALUES                   | UNITS                   | TEST METHODS |
|-------------------------------------------------------|----------------------------------|-------------------------|--------------|
| <b>MECHANICAL</b>                                     |                                  |                         |              |
| Tensile Stress, yld, Type I, 5 mm/min                 | 103                              | MPa                     | ASTM D638    |
| Tensile Stress, brk, Type I, 5 mm/min                 | 103                              | MPa                     | ASTM D638    |
| Tensile Strain, yld, Type I, 5 mm/min                 | 4                                | %                       | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min                 | 4                                | %                       | ASTM D638    |
| Tensile Modulus, 5 mm/min                             | 3550                             | MPa                     | ASTM D638    |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span          | 150                              | MPa                     | ASTM D790    |
| Flexural Modulus, 1.3 mm/min, 50 mm span              | 4640                             | MPa                     | ASTM D790    |
| Tensile Stress, yield, 5 mm/min                       | 98                               | MPa                     | ISO 527      |
| Tensile Stress, break, 5 mm/min                       | 98                               | MPa                     | ISO 527      |
| Tensile Strain, yield, 5 mm/min                       | 3.1                              | %                       | ISO 527      |
| Tensile Strain, break, 5 mm/min                       | 3.1                              | %                       | ISO 527      |
| Tensile Modulus, 1 mm/min                             | 5250                             | MPa                     | ISO 527      |
| Flexural Stress, yield, 2 mm/min                      | 150                              | MPa                     | ISO 178      |
| Flexural Stress, break, 2 mm/min                      | 150                              | MPa                     | ISO 178      |
| Flexural Modulus, 2 mm/min                            | 4750                             | MPa                     | ISO 178      |
| <b>IMPACT</b>                                         |                                  |                         |              |
| Izod Impact, unnotched, 23°C                          | 400                              | J/m                     | ASTM D4812   |
| Izod Impact, notched, 23°C                            | 58                               | J/m                     | ASTM D256    |
| Izod Impact, unnotched 80°10°4 +23°C                  | 30                               | kJ/m <sup>2</sup>       | ISO 180/1U   |
| Izod Impact, notched 80°10°4 +23°C                    | 7                                | kJ/m <sup>2</sup>       | ISO 180/1A   |
| <b>THERMAL</b>                                        |                                  |                         |              |
| HDT, 0.45 MPa, 3.2 mm, unannealed                     | 218                              | °C                      | ASTM D648    |
| HDT, 1.82 MPa, 3.2mm, unannealed                      | 193                              | °C                      | ASTM D648    |
| Vicat Softening Temp, Rate B/120                      | 205                              | °C                      | ISO 306      |
| <b>PHYSICAL</b>                                       |                                  |                         |              |
| Specific Gravity                                      | 1.41                             | -                       | ASTM D792    |
| Mold Shrinkage, flow, 3.2 mm                          | 0.7 – 0.9                        | %                       | SABIC method |
| Mold Shrinkage, xflow, 3.2 mm                         | 1 – 1.2                          | %                       | SABIC method |
| Melt Volume Rate, MVR at 250°C/2.16 kg                | 17                               | cm <sup>3</sup> /10 min | ISO 1133     |
| <b>FLAME CHARACTERISTICS</b>                          |                                  |                         |              |
| UL Yellow Card Link                                   | <a href="#">E45329-101938098</a> | -                       | -            |
| <b>AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS III</b> |                                  |                         |              |
| Tensile Stress, brk, Type I, 5 mm/min                 | 82                               | MPa                     | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min                 | 2.5                              | %                       | ASTM D638    |
| Flexural Modulus, 1.3 mm/min, 50 mm span              | 4520                             | MPa                     | ASTM D790    |

| PROPERTIES                                    | TYPICAL VALUES | UNITS | TEST METHODS |
|-----------------------------------------------|----------------|-------|--------------|
| Flexural Strain, 1.3 mm/min, 50 mm span       | 9.7            | %     | ASTM D790    |
| Instrumented Impact, Total Energy, 23°C       | 6              | J     | ASTM D3763   |
| PROPERTIES AFTER 1008 HOURS AT 125°C          |                |       |              |
| Tensile Stress, brk, Type I, 5 mm/min         | 98             | MPa   | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min         | 4              | %     | ASTM D638    |
| Flexural Modulus, 1.3 mm/min, 50 mm span      | 4820           | MPa   | ASTM D790    |
| Flexural Strain, 1.3 mm/min, 50 mm span       | 7              | %     | ASTM D790    |
| Instrumented Impact, Total Energy, 23°C       | 5              | J     | ASTM D3763   |
| AFTER 40 CYCLES, SIMILAR TO USCAR-2, CLASS IV |                |       |              |
| Tensile Stress, brk, Type I, 5 mm/min         | 89             | MPa   | ASTM D638    |
| Tensile Strain, brk, Type I, 5 mm/min         | 2.3            | %     | ASTM D638    |
| Flexural Modulus, 1.3 mm/min, 50 mm span      | 5100           | MPa   | ASTM D790    |
| Flexural Strain, 1.3 mm/min, 50 mm span       | 6              | %     | ASTM D790    |
| Instrumented Impact, Total Energy, 23°C       | 4              | J     | ASTM D3763   |
| PROPERTIES AFTER 1008 HOURS AT 155°C          |                |       |              |
| Tensile Stress, brk, Type I, 5 mm/min         | 4812           | MPa   | ASTM D638    |
| Tensile Strain, yld, Type I, 5 mm/min         | 97.2           | %     | ASTM D638    |
| Flexural Modulus, 1.3 mm/min, 50 mm span      | 0              | MPa   | ASTM D790    |
| Flexural Strain, 1.3 mm/min, 50 mm span       | 3.8            | %     | ASTM D790    |
| INJECTION MOLDING                             |                |       |              |
| Drying Temperature                            | 60 – 75        | °C    |              |
| Drying Time                                   | 4 – 6          | Hrs   |              |
| Drying Time (Cumulative)                      | 8              | Hrs   |              |
| Maximum Moisture Content                      | 0.05           | %     |              |
| 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    |              |

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