



## VALOX™ Resin VX4910

### Europe-Africa-Middle East: COMMERCIAL

10% Glass reinforced nucleated PBT/ASA with excellent mechanical properties high dimensional stability, and low density.

| TYPICAL PROPERTIES <sup>1</sup>              | TYPICAL VALUE | Unit                | Standard   |
|----------------------------------------------|---------------|---------------------|------------|
| <b>MECHANICAL</b>                            |               |                     |            |
| Tensile Stress, yld, Type I, 5 mm/min        | 810           | kgf/cm <sup>2</sup> | ASTM D 638 |
| Tensile Stress, brk, Type I, 5 mm/min        | 810           | kgf/cm <sup>2</sup> | ASTM D 638 |
| Tensile Strain, yld, Type I, 5 mm/min        | 3             | %                   | ASTM D 638 |
| Tensile Strain, brk, Type I, 5 mm/min        | 3             | %                   | ASTM D 638 |
| Tensile Modulus, 5 mm/min                    | 46900         | kgf/cm <sup>2</sup> | ASTM D 638 |
| Flexural Stress, yld, 1.3 mm/min, 50 mm span | 1170          | kgf/cm <sup>2</sup> | ASTM D 790 |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span | 1170          | kgf/cm <sup>2</sup> | ASTM D 790 |
| Flexural Modulus, 1.3 mm/min, 50 mm span     | 34600         | kgf/cm <sup>2</sup> | ASTM D 790 |
| Tensile Stress, yield, 5 mm/min              | 80            | MPa                 | ISO 527    |
| Tensile Stress, break, 5 mm/min              | 80            | 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                    | 4600          | MPa                 | ISO 527    |
| Flexural Stress, yield, 2 mm/min             | 120           | MPa                 | ISO 178    |
| Flexural Stress, break, 2 mm/min             | 115           | MPa                 | ISO 178    |
| Flexural Strain, break, 2 mm/min             | 4             | %                   | ISO 178    |
| Flexural Modulus, 2 mm/min                   | 3800          | MPa                 | ISO 178    |
| Hardness, H358/30                            | 100           | MPa                 | ISO 2039-1 |
| Hardness, Rockwell R                         | 120           | -                   | ISO 2039-2 |
| <b>IMPACT</b>                                |               |                     |            |
| Charpy Impact, unnotched, 23°C               | 45            | kJ/m <sup>2</sup>   | ISO 179/2C |
| Charpy Impact, unnotched, -30°C              | 20            | kJ/m <sup>2</sup>   | ISO 179/2C |



## VALOX™ Resin VX4910

### Europe-Africa-Middle East: COMMERCIAL

| TYPICAL PROPERTIES <sup>1</sup>        | TYPICAL VALUE | Unit              | Standard    |
|----------------------------------------|---------------|-------------------|-------------|
| <b>IMPACT</b>                          |               |                   |             |
| Izod Impact, unnotched, 23°C           | 44            | cm-kgf/cm         | ASTM D 4812 |
| Izod Impact, unnotched, -30°C          | 34            | cm-kgf/cm         | ASTM D 4812 |
| Izod Impact, notched, 23°C             | 5             | cm-kgf/cm         | ASTM D 256  |
| Izod Impact, notched, 0°C              | 5             | cm-kgf/cm         | ASTM D 256  |
| Izod Impact, notched, -30°C            | 4             | cm-kgf/cm         | ASTM D 256  |
| Instrumented Impact Total Energy, 23°C | 458           | cm-kgf            | ASTM D 3763 |
| Izod Impact, unnotched 80*10*4 +23°C   | 30            | kJ/m <sup>2</sup> | ISO 180/1U  |
| Izod Impact, unnotched 80*10*4 -30°C   | 25            | kJ/m <sup>2</sup> | ISO 180/1U  |
| Izod Impact, notched 80*10*4 +23°C     | 5             | kJ/m <sup>2</sup> | ISO 180/1A  |
| Izod Impact, notched 80*10*4 0°C       | 5             | kJ/m <sup>2</sup> | ISO 180/1A  |
| Izod Impact, notched 80*10*4 -30°C     | 5             | kJ/m <sup>2</sup> | ISO 180/1A  |
| Charpy Impact, notched, 23°C           | 6             | kJ/m <sup>2</sup> | ISO 179/2C  |
| Charpy Impact, notched, -30°C          | 5             | kJ/m <sup>2</sup> | ISO 179/2C  |
| <b>THERMAL</b>                         |               |                   |             |
| Vicat Softening Temp, Rate A/50        | 218           | °C                | ASTM D 1525 |
| Vicat Softening Temp, Rate B/50        | 150           | °C                | ASTM D 1525 |
| HDT, 0.45 MPa, 3.2 mm, unannealed      | 205           | °C                | ASTM D 648  |
| HDT, 1.82 MPa, 3.2mm, unannealed       | 130           | °C                | ASTM D 648  |
| CTE, -40°C to 40°C, flow               | 4.11E-05      | 1/°C              | ISO 11359-2 |
| CTE, -40°C to 40°C, xflow              | 8.12E-05      | 1/°C              | ISO 11359-2 |
| CTE, 23°C to 60°C, flow                | 5.E-05        | 1/°C              | ISO 11359-2 |
| CTE, 23°C to 60°C, xflow               | 1.2E-04       | 1/°C              | ISO 11359-2 |
| CTE, 23°C to 150°C, flow               | 3.57E-05      | 1/°C              | ISO 11359-2 |
| CTE, 23°C to 150°C, xflow              | 1.96E-04      | 1/°C              | ISO 11359-2 |



## VALOX™ Resin VX4910

### Europe-Africa-Middle East: COMMERCIAL

| TYPICAL PROPERTIES <sup>1</sup>        | TYPICAL VALUE | Unit                    | Standard       |
|----------------------------------------|---------------|-------------------------|----------------|
| <b>THERMAL</b>                         |               |                         |                |
| Ball Pressure Test, 125°C +/- 2°C      | PASSES        | -                       | IEC 60695-10-2 |
| Vicat Softening Temp, Rate A/50        | 218           | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/50        | 150           | °C                      | ISO 306        |
| Vicat Softening Temp, Rate B/120       | 155           | °C                      | ISO 306        |
| HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm | 205           | °C                      | ISO 75/Bf      |
| HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm  | 130           | °C                      | ISO 75/Af      |
| <b>PHYSICAL</b>                        |               |                         |                |
| Specific Gravity                       | 1.3           | -                       | ASTM D 792     |
| Filler Content                         | 10            | %                       | ASTM D 229     |
| Mold Shrinkage, flow, 3.2 mm (5)       | 0.6 - 0.8     | %                       | SABIC Method   |
| Melt Flow Rate, 200°C/3.8 kgf          | 20            | g/10 min                | ASTM D 1238    |
| Melt Flow Rate, 265°C/5.0 kgf          | 40            | g/10 min                | ASTM D 1238    |
| Density                                | 1.3           | g/cm <sup>3</sup>       | ISO 1183       |
| Melt Volume Rate, MVR at 250°C/5.0 kg  | 25            | cm <sup>3</sup> /10 min | ISO 1133       |
| Melt Volume Rate, MVR at 265°C/5.0 kg  | 35            | cm <sup>3</sup> /10 min | ISO 1133       |
| Melt Viscosity, 260°C, 1500 sec-1      | 160           | Pa-s                    | ISO 11443      |
| <b>ELECTRICAL</b>                      |               |                         |                |
| Relative Permittivity, 1 MHz           | 3.4           | -                       | ASTM D 150     |
| Dissipation Factor, 1 MHz              | 0.02          | -                       | ASTM D 150     |
| Relative Permittivity, 1 MHz           | 3.4           | -                       | IEC 60250      |
| Dissipation Factor, 1 MHz              | 0.02          | -                       | IEC 60250      |



## VALOX™ Resin VX4910

### Europe-Africa-Middle East: COMMERCIAL

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