

## SABIC Innovative Plastics Valox<sup>®</sup> HX420HP PBT (Europe-Africa-Middle East)

Category : Polymer , Thermoplastic , Polyester, TP , Polybutylene Terephthalate (PBT)

### Material Notes:

Medium Flow, 30% Glass filled, Polybutylene Terephthalate (PBT) resin. For medical devices and pharmaceutical applications. Healthcare management of change, biocompatible (ISO 10993 or USP Class VI), food contact compliant. Available in limited colors.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-Valox-HX420HP-PBT-Europe-Africa-Middle-East.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Valox-HX420HP-PBT-Europe-Africa-Middle-East.php)

| Physical Properties               | Metric  | English   | Comments                                |
|-----------------------------------|---|---|---|
| Specific Gravity                  | 1.53 g/cc   | 1.53 g/cc   | ASTM D792                               |
| Density                           | 1.53 g/cc   | 0.0553 lb/in <sup>3</sup>                                       | ISO 1183                                |
| Water Absorption                  | 0.060 %<br>@Time 86400 sec                                      | 0.060 %<br>@Time 24.0 hour                                      | ASTM D570                               |
| Moisture Absorption               | 0.0600 %  | 0.0600 %  | 23 <sup>°</sup> C / 50% RH; ISO 62      |
| Water Absorption at Saturation    | 0.26 %  | 0.26 %  | ISO 62                                  |
| Linear Mold Shrinkage, Flow       | 0.0030 - 0.0050 cm/cm<br>@Thickness 1.50 - 3.20 mm              | 0.0030 - 0.0050 in/in<br>@Thickness 0.0591 - 0.126 in           | SABIC Method                            |
|                                   | 0.0030 - 0.0080 cm/cm<br>@Thickness 3.20 mm                     | 0.0030 - 0.0080 in/in<br>@Thickness 0.126 in                    | SABIC Method                            |
|                                   | 0.0050 - 0.0080 cm/cm<br>@Thickness 3.20 - 4.60 mm              | 0.0050 - 0.0080 in/in<br>@Thickness 0.126 - 0.181 in            | SABIC Method                            |
| Linear Mold Shrinkage, Transverse | 0.0040 - 0.0060 cm/cm<br>@Thickness 1.50 - 3.20 mm              | 0.0040 - 0.0060 in/in<br>@Thickness 0.0591 - 0.126 in           | SABIC Method                            |
|                                   | 0.0060 - 0.0090 cm/cm<br>@Thickness 3.20 - 4.60 mm              | 0.0060 - 0.0090 in/in<br>@Thickness 0.126 - 0.181 in            | SABIC Method                            |
| Melt Flow                         | 26 g/10 min<br>@Load 2.16 kg,<br>Temperature 250 <sup>°</sup> C | 26 g/10 min<br>@Load 4.76 lb,<br>Temperature 482 <sup>°</sup> F | ASTM D1238                              |
| Melt Index of Compound            | 20 g/10 min<br>@Load 2.16 kg,<br>Temperature 250 <sup>°</sup> C | 20 g/10 min<br>@Load 4.76 lb,<br>Temperature 482 <sup>°</sup> F | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties        | Metric                   | English                    | Comments                          |
|------------------------------|--------------------------|----------------------------|-----------------------------------|
| Hardness, Rockwell R         | 118                      | 118                        | ASTM D785                         |
| Tensile Strength at Break    | 120 MPa                  | 17400 psi                  | Type I, 5 mm/min; ASTM D638       |
|                              | 125 MPa                  | 18100 psi                  | 5 mm/min; ISO 527                 |
| Tensile Strength, Yield      | 120 MPa                  | 17400 psi                  | Type I, 5 mm/min; ASTM D638       |
|                              | 125 MPa                  | 18100 psi                  | 5 mm/min; ISO 527                 |
| Elongation at Break          | 2.0 %                    | 2.0 %                      | 5 mm/min; ISO 527                 |
|                              | 3.0 %                    | 3.0 %                      | Type I, 5 mm/min; ASTM D638       |
| Elongation at Yield          | 2.0 %                    | 2.0 %                      | 5 mm/min; ISO 527                 |
|                              | 3.0 %                    | 3.0 %                      | Type I, 5 mm/min; ASTM D638       |
| Tensile Modulus              | 9.30 GPa                 | 1350 ksi                   | 5 mm/min; ASTM D638               |
|                              | 9.30 GPa                 | 1350 ksi                   | 1 mm/min; ISO 527                 |
| Flexural Strength            | 189 MPa                  | 27400 psi                  | 1.3 mm/min, 50 mm span; ASTM D790 |
| Flexural Yield Strength      | 195 MPa                  | 28300 psi                  | 2 mm/min; ISO 178                 |
| Flexural Modulus             | 7.58 GPa                 | 1100 ksi                   | 1.3 mm/min, 50 mm span; ASTM D790 |
|                              | 8.50 GPa                 | 1230 ksi                   | 2 mm/min; ISO 178                 |
| Izod Impact, Notched         | 0.850 J/cm               | 1.59 ft-lb/in              | ASTM D256                         |
|                              | 0.800 J/cm               | 1.50 ft-lb/in              | ASTM D256                         |
|                              | @Temperature -30.0<br>°C | @Temperature -22.0<br>°F   |                                   |
| Izod Impact, Unnotched       | 8.01 J/cm                | 15.0 ft-lb/in              | ASTM D4812                        |
| Izod Impact, Notched (ISO)   | 8.00 kJ/m <sup>2</sup>   | 3.81 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1A               |
|                              | 7.00 kJ/m <sup>2</sup>   | 3.33 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1A               |
|                              | @Temperature -30.0<br>°C | @Temperature -22.0<br>°F   |                                   |
| Izod Impact, Unnotched (ISO) | 45.0 kJ/m <sup>2</sup>   | 21.4 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1U               |
|                              | 45.0 kJ/m <sup>2</sup>   | 21.4 ft-lb/in <sup>2</sup> | 80*10*4; ISO 180/1U               |
|                              | @Temperature -30.0<br>°C | @Temperature -22.0<br>°F   |                                   |
|                              | 0.500 J/cm <sup>2</sup>  | 2.38 ft-lb/in <sup>2</sup> | Edgew 80*10*4 sp=62mm; ISO        |

| Charpy Impact, Notched<br>Mechanical Properties | Metric                             | English                             | 179/1eA<br>Comments |
|---|------------------------------------|-------------------------------------|---------------------|
| Dart Drop, Total Energy                         | 10.0 J<br>@Temperature 23.0<br>Â°C | 7.38 ft-lb<br>@Temperature 73.4 Â°F | ASTM D3763          |

| Thermal Properties                             | Metric   | English   | Comments                          |
|--|--|---|-----------------------------------|
| CTE, linear, Parallel to Flow                  | 25.0 Âµm/m-Â°C<br>@Temperature -40.0 -<br>40.0 Â°C | 13.9 Âµin/in-Â°F<br>@Temperature -40.0 -<br>104 Â°F | ISO 11359-2                       |
|  | 25.2 Âµm/m-Â°C<br>@Temperature -40.0 -<br>40.0 Â°C | 14.0 Âµin/in-Â°F<br>@Temperature -40.0 -<br>104 Â°F | ASTM E 831                        |
|  | 25.2 Âµm/m-Â°C<br>@Temperature 60.0 -<br>138 Â°C   | 14.0 Âµin/in-Â°F<br>@Temperature 140 -<br>280 Â°F   | ASTM E 831                        |
| CTE, linear, Transverse to Flow                | 120 Âµm/m-Â°C<br>@Temperature -40.0 -<br>40.0 Â°C  | 66.7 Âµin/in-Â°F<br>@Temperature -40.0 -<br>104 Â°F | ISO 11359-2                       |
| Deflection Temperature at 0.46 MPa<br>(66 psi) | 215 Â°C<br>@Thickness 6.40 mm                      | 419 Â°F<br>@Thickness 0.252 in                      | unannealed; ASTM D648             |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 200 Â°C  | 392 Â°F   | Flatw 80*10*4 sp=64mm; ISO 75/ Af |
|  | 207 Â°C<br>@Thickness 6.40 mm                      | 405 Â°F<br>@Thickness 0.252 in                      | unannealed; ASTM D648             |
| Vicat Softening Point                          | 215 Â°C  | 419 Â°F   | Rate B/50; ASTM D1525             |
|  | 215 Â°C  | 419 Â°F   | Rate B/50; ISO 306                |
|  | 220 Â°C  | 428 Â°F   | Rate B/120; ISO 306               |

| Electrical Properties | Metric                          | English                         | Comments  |
|-----------------------|---------------------------------|---------------------------------|-----------|
| Volume Resistivity    | >= 3.20e+16 ohm-cm              | >= 3.20e+16 ohm-cm              | ASTM D257 |
| Dielectric Constant   | 3.7<br>@Frequency 1.00e+6<br>Hz | 3.7<br>@Frequency 1.00e+6<br>Hz | ASTM D150 |
|                       | 3.8<br>@Frequency 100 Hz        | 3.8<br>@Frequency 100 Hz        | ASTM D150 |

| Electrical Properties | 18.7 kV/mm<br>Metric     | 475 kV/in<br>English     | Comments   D149   |
|-----------------------|--------------------------|--------------------------|-------------------|
|                       | @Thickness 3.20 mm       | @Thickness 0.126 in      |                   |
|                       | 24.8 kV/mm               | 630 kV/in                | in oil; ASTM D149 |
|                       | @Thickness 1.60 mm       | @Thickness 0.0630 in     |                   |
| Dissipation Factor    | 0.0020                   | 0.0020                   | ASTM D150         |
|                       | @Frequency 100 Hz        | @Frequency 100 Hz        |                   |
|                       | 0.020                    | 0.020                    | ASTM D150         |
|                       | @Frequency 1.00e+6<br>Hz | @Frequency 1.00e+6<br>Hz |                   |

| Descriptive Properties | Value                   | Comments  |
|------------------------|-------------------------|-----------|
| Specific Volume        | 0.65 cm <sup>3</sup> /g | ASTM D792 |

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