

Stanyl[®] HFX31S

PA46–GF20 FR(40)

20% Glass Reinforced, High Flow, Halogen free and free of red phosphorous

Stanyl[®] HFX31S is an electro–friendly & halogen–free flame–retarded high heat polyamide that offers an excellent combination of high CTI, flow and weld–line strength. HFX–grades are often used in connectors such as USB type C.

| PROPERTIES | TYPICAL DATA | UNIT | TEST METHOD |
|--------------------------------|-------------------|-------------------|--------------|
| RHEOLOGICAL PROPERTIES | | | |
| | DRY / COND | | |
| Molding shrinkage (parallel) | 0.45 / * | % | ISO 294–4 |
| Molding shrinkage (normal) | 1.4 / * | % | ISO 294–4 |
| MECHANICAL PROPERTIES | | | |
| | DRY / COND | | |
| Tensile modulus | 7600 / 5000 | MPa | ISO 527–1/–2 |
| Tensile modulus (120°C) | 4100 / – | MPa | ISO 527–1/–2 |
| Tensile modulus (160°C) | 3700 | MPa | ISO 527–1/–2 |
| Stress at break | 120 / 85 | MPa | ISO 527–1/–2 |
| Stress at break (120°C) | 70 / – | MPa | ISO 527–1/–2 |
| Stress at break (160°C) | 60 | MPa | ISO 527–1/–2 |
| Strain at break | 3 / 3.4 | % | ISO 527–1/–2 |
| Strain at break (120°C) | 5.5 / – | % | ISO 527–1/–2 |
| Strain at break (160°C) | 6 | % | ISO 527–1/–2 |
| Flexural modulus | 7000 / 4800 | MPa | ISO 178 |
| Flexural modulus (120°C) | 4300 | MPa | ISO 178 |
| Flexural modulus (160°C) | 3900 | MPa | ISO 178 |
| Flexural strength | 190 / 140 | MPa | ISO 178 |
| Flexural strength (120°C) | 100 | MPa | ISO 178 |
| Flexural strength (160°C) | 90 | MPa | ISO 178 |
| Charpy impact strength (+23°C) | 49 / 53 | kJ/m ² | ISO 179/1eU |

Property Data

Stanyl® HFX31S

| <i>PROPERTIES</i> | <i>TYPICAL DATA</i> | <i>UNIT</i> | <i>TEST METHOD</i> |
|--|---------------------|-------------------|--------------------|
| Charpy notched impact strength (+23°C) | 7 / 10 | kJ/m ² | ISO 179/1eA |
| <i>THERMAL PROPERTIES</i> | | | |
| <i>DRY / COND</i> | | | |
| Melting temperature (10°C/min) | 295 / * | °C | ISO 11357-1/-3 |
| Temp. of deflection under load (1.80 MPa) | 285 / * | °C | ISO 75-1/-2 |
| Coeff. of linear therm. expansion (parallel) | 0.25 / * | E-4/°C | ISO 11359-1/-2 |
| Coeff. of linear therm. expansion (normal) | 0.65 / * | E-4/°C | ISO 11359-1/-2 |
| Burning Behav. at 3.0 mm nom. thickn. | V-0 / * | class | IEC 60695-11-10 |
| Thickness tested | 3 / * | mm | IEC 60695-11-10 |
| UL recognition | Yes / * | – | – |
| Relative Temperature Index – electrical | 120 | °C | UL746B |
| RTI electrical (Thickness (1) tested) | 0.2 | mm | UL746B |
| <i>ELECTRICAL PROPERTIES</i> | | | |
| <i>DRY / COND</i> | | | |
| Volume resistivity | >1E13 / 4E10 | Ohm*m | IEC 62631-3-1 |
| Electric strength | 33 / 30 | kV/mm | IEC 60243-1 |
| Comparative tracking index | 550 / – | V | IEC 60112 |
| Relative permittivity (1GHz) | 3.6 / 3.75 | – | IEC 61189-2-721 |
| Relative permittivity (10GHz) | 3.6 / 3.7 | – | IEC 61189-2-721 |
| <i>OTHER PROPERTIES</i> | | | |
| <i>DRY / COND</i> | | | |
| Humidity absorption | 2.7 / * | % | Sim. to ISO 62 |
| Density | 1360 / – | kg/m ³ | ISO 1183 |