

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)	0.8 / *	%	ISO 294-4
Molding shrinkage (normal)	1.3 / *	%	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
Charpy notched impact strength (+23°C)	7 / 10	kJ/m ²	ISO 179/1eA



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Properties	Typical Data	Unit	Test Method
Thermal properties			
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
Electrical properties			
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 60250
Relative permittivity (10GHz)	3.6 / 3.7	-	IEC 60250
Other properties			
Humidity absorption	2.7 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m ³	ISO 1183

