

# Stanyl<sup>®</sup> 46HF5040

## PA46–GF40 FR(17)

40% Glass Reinforced, Heat Stabilized, Flame Retardant, High Flow

Print Date: 2024–03–27

Stanyl<sup>®</sup> 46HF5040 is an electro–friendly & flame–retarded high heat polyamide with unmatched high flow that offers an excellent combination of flame–retardancy and mechanical properties. 46HF–grades are often used in thin–walled and multi–cavity connectors such as DDR–connectors.

PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
<b>RHEOLOGICAL PROPERTIES</b>			
	<b>DRY / COND</b>		
Molding shrinkage [parallel]	0.3 / *	%	Sim. to ISO 294–4
Molding shrinkage [normal]	0.9 / *	%	Sim. to ISO 294–4
<b>MECHANICAL PROPERTIES</b>			
	<b>DRY / COND</b>		
Tensile modulus	15000 / 10500	MPa	ISO 527–1/–2
Tensile modulus (120°C)	10000 / –	MPa	ISO 527–1/–2
Tensile modulus (160°C)	8000	MPa	ISO 527–1/–2
Stress at break	190 / 130	MPa	ISO 527–1/–2
Stress at break (120°C)	130 / –	MPa	ISO 527–1/–2
Stress at break (160°C)	110	MPa	ISO 527–1/–2
Strain at break	1.8 / 3	%	ISO 527–1/–2
Strain at break (120°C)	3 / –	%	ISO 527–1/–2
Strain at break (160°C)	3	%	ISO 527–1/–2
Flexural modulus	13500 / 10000	MPa	ISO 178
Flexural modulus (120°C)	8500	MPa	ISO 178
Flexural modulus (160°C)	5500	MPa	ISO 178
Flexural strength	300 / 240	MPa	ISO 178
Flexural strength (120°C)	190	MPa	ISO 178
Flexural strength (160°C)	130	MPa	ISO 178
Charpy impact strength (+23°C)	50 / 70	kJ/m <sup>2</sup>	ISO 179/1eU

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## Property Data

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
Charpy impact strength (-30°C)	40 / 40	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C)	13 / 14	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength (-30°C)	14 / 14	kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength (+23°C)	15 / 15	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength (-40°C)	15 / 15	kJ/m <sup>2</sup>	ISO 180/1A

### THERMAL PROPERTIES

#### DRY / COND

Melting temperature (10°C/min)	295 / *	°C	ISO 11357-1/-3
Temp. of deflection under load (1.80 MPa)	290 / *	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	290 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion (parallel)	0.17 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (normal)	0.65 / *	E-4/°C	ISO 11359-1/-2
Coeff. of linear therm. expansion (parallel)	0.2	E-4/°C	ASTM D696
Coeff. of linear therm. expansion (normal)	0.45	E-4/°C	ASTM D696
Burning Behav. at 1.5 mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	Yes / *	-	-
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	130	°C	UL746B
RTI electrical (Thickness (1) tested)	0.35	mm	UL746B
Thermal Index 5000 hrs	163	°C	IEC 60216/ISO 527-1/-2

### ELECTRICAL PROPERTIES

#### DRY / COND

Volume resistivity	>1E13 / 1E8	Ohm*m	IEC 62631-3-1
Electric strength	30 / 20	kV/mm	IEC 60243-1
Comparative tracking index	325 / -	V	IEC 60112

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<i>PROPERTIES</i>	<i>TYPICAL DATA</i>	<i>UNIT</i>	<i>TEST METHOD</i>
Relative permittivity (100Hz)	4.3 / 12	–	IEC 62631-2-1
Relative permittivity (1 MHz)	4 / 4.5	–	IEC 62631-2-1
Relative permittivity (1GHz)	3.6 / 3.8	–	IEC 61189-2-721
<b><i>OTHER PROPERTIES</i></b>	<b><i>DRY / COND</i></b>		
Humidity absorption	1.4 / *	%	Sim. to ISO 62
Density	1770 / –	kg/m <sup>3</sup>	ISO 1183

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