LNP™ THERMOCOMP™ Compound WF006XXP

WF006XXP

DESCRIPTION

LNP THERMOCOMP WF006XXP compound is based on Polybutylene Terephthalate (PBT) resin containing 30% glass fiber.

GENERAL INFORMATION	
Features	High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260428

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	119	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	119	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	2.7	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Tensile Modulus, 5 mm/min	9300	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	195	MPa	ASTM D790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	189	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	7580	MPa	ASTM D790
Hardness, Rockwell R	118	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	19	mg/1000cy	ASTM D1044
Tensile Stress, yield, 5 mm/min	125	MPa	ISO 527
Tensile Stress, break, 5 mm/min	125	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	9300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	195	MPa	ISO 178
Flexural Modulus, 2 mm/min	8500	MPa	ISO 178
Ball Indentation Hardness, H358/30	122	MPa	ISO 2039-1
Hardness, Rockwell R	118	-	ISO 2039-2
IMPACT [1]			
Izod Impact, unnotched, 23°C	801	J/m	ASTM D4812

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, 23°C	85	J/m	ASTM D256
Izod Impact, notched, -30°C	80	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	8	J	ASTM D3763
Izod Impact, unnotched 80*10*4 +23°C	45	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	45	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	7	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	45	kJ/m²	ISO 179/1eU
THERMAL [1]			
Vicat Softening Temp, Rate B/50	215	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	220	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	203	°C	ASTM D648
HDT, 0.45 MPa, 6.4 mm, unannealed	215	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	207	°C	ASTM D648
CTE, -40°C to 40°C, flow	2.52E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	1.2E-04	1/°C	ASTM E831
CTE, 60°C to 138°C, flow	2.52E-05	1/°C	ASTM E831
Thermal Conductivity	0.19	W/m-°C	ISO 8302
CTE, -40°C to 40°C, flow	2.52E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	1.2E-04	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passs	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	223	°C	ISO 306
Vicat Softening Temp, Rate B/50	215	°C	ISO 306
Vicat Softening Temp, Rate B/120	215	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	217	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	204	°C	ISO 75/Af
Relative Temp Index, Elec [2]	140	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	140	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	140	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.53	-	ASTM D792
Specific Volume	0.65	cm³/g	ASTM D792
Density	1.53	g/cm³	ASTM D792
Filler Content	30	%	ASTM D229
Water Absorption, (23°C/24hrs)	0.06	%	ASTM D570
Mold Shrinkage on Tensile Bar, flow [3]	0.3 – 0.7	%	SABIC method
Mold Shrinkage, flow, 3.2 mm [3]	0.3 – 0.7	%	SABIC method
Mold Shrinkage, flow, 1.5-3.2 mm [3]	0.3 – 0.5	%	SABIC method
Mold Shrinkage, flow, 3.2-4.6 mm [3]	0.5 – 0.8	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow [3]	0.5 – 1	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [3]	0.5 – 1	%	SABIC method
Mold Shrinkage, xflow, 1.5-3.2 mm [3]	0.4 – 0.6	%	SABIC method

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Shrinkage, xflow, 3.2-4.6 mm [3]	0.6 – 0.9	%	SABIC method
Moisture Absorption (23°C / 50% RH)	0.08	%	ISO 62
Melt Flow Rate			
250°C/2.16 kg	17	g/10 min	ISO 1133
Melt Volume Rate			
250°C/2.16 kg	13	cm³/10 min	ISO 1133
ELECTRICAL [1]			
Volume Resistivity	>3.2E+16	Ω.cm	ASTM D257
Dielectric Strength, in air, 3.2 mm	18.7	kV/mm	ASTM D149
Dielectric Strength, in oil, 1.6 mm	24.8	kV/mm	ASTM D149
Relative Permittivity, 100 Hz	3.8	-	ASTM D150
Relative Permittivity, 1 MHz	3.7	-	ASTM D150
Dissipation Factor			
100 Hz	0.002	-	ASTM D150
1 MHz	0.02	-	ASTM D150
50/60 Hz	0.001	-	IEC 60250
100 Hz	0.001	-	IEC 60250
1 MHz	0.01	-	IEC 60250
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	1.E+15	Ω	IEC 60093
Dielectric Strength, shorttime, 1.0mm	19	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 0.8 mm	28	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 1.6 mm	24	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	3.1	-	IEC 60250
Comparative Tracking Index	300	V	IEC 60112
Relative Permittivity, 50/60 Hz	3.1	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥6	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3	≥0.84	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 4	≥0.38	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥0.38	mm	UL 746A
High Voltage Arc Track Rate {PLC}	1	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D495
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-103952715	-	-
UL Yellow Card Link 2	E207780-103938351	-	-
UL Recognized, 94HB Flame Class Rating	≥0.84	mm	UL 94
Glow Wire Ignitability Temperature, 1.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	825	°C	IEC 60695-2-13
Glow Wire Flammability Index, 1.0 mm	750	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	750	°C	IEC 60695-2-12

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Glow Wire Flammability Index, 3.0 mm	800	°C	IEC 60695-2-12
Oxygen Index (LOI)	19	%	ASTM D2863
INJECTION MOLDING [4]			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 265	°C	
Nozzle Temperature	245 – 260	°C	
Front - Zone 3 Temperature	250 – 265	°C	
Middle - Zone 2 Temperature	245 – 260	°C	
Rear - Zone 1 Temperature	240 – 255	°C	
Mold Temperature	65 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	50 – 80	rpm	
Shot to Cylinder Size	40 – 80	%	
Vent Depth	0.025 – 0.038	mm	

(1) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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