

LNPT[™] THERMOCOMP[™] COMPOUND DC0041XX5

DESCRIPTION

LNP THERMOCOMP DC0041XX5 compound is based on PC Copolymer Resin containing 20% carbon fiber suitable for injection molding applications. Added features of this grade include: Higher Stiffness vs. glass fiber, Higher Strength. This halogen-free flame retardant resin is EN45545 R6 HL3 compliant and is targeted for train interior applications (category R6).

GENERAL INFORMATION

Features	Flame Retardant, Low Smoke and Toxicity, Non halogenated flame retardant, High stiffness/Strength
Fillers	Carbon Fiber
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY

Mass Transportation

SUB INDUSTRY

Rail

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Modulus, 1 mm/min	16200	MPa	ISO 527
Tensile Stress, break, 5 mm/min	160	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Flexural Modulus, 2 mm/min	11800	MPa	ISO 178
Flexural Strength, 2 mm/min	210	MPa	ISO 178
Tensile Modulus, 5 mm/min	16200	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	170	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	11800	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	220	MPa	ASTM D790
IMPACT ⁽¹⁾			
Izod Impact, notched 80*10*4 +23°C	6	kJ/m ²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	30	kJ/m ²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	8	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	30	kJ/m ²	ISO 179/1eU
Izod Impact, notched, 23°C	55	J/m	ASTM D256
Izod Impact, unnotched, 23°C	420	J/m	ASTM D4812
THERMAL ⁽¹⁾			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	109	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	115	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	120	°C	ISO 306
Vicat Softening Temp, Rate B/120	122	°C	ISO 306
CTE, -40°C to 40°C, flow	1.4E-05	1/°C	ISO 11359-2

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 40°C, xflow	5.6E-05	1/°C	ISO 11359-2
HDT, 1.82 MPa, 3.2mm, unannealed	96	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	107	°C	ASTM D648
CTE, -40°C to 40°C, flow	1.4E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	5.6E-05	1/°C	ASTM E831
PHYSICAL ⁽¹⁾			
Density	1.39	g/cm ³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg	5	cm ³ /10 min	ISO 1133
Mold Shrinkage, flow ⁽²⁾	0.1 – 0.2	%	SABIC method
Mold Shrinkage, xflow ⁽²⁾	0.2 – 0.3	%	SABIC method
Moisture Absorption, (23°C/50% RH/24hrs)	0.1 – 0.15	%	ISO 62-4
Specific Gravity	1.39	-	ASTM D792
ELECTRICAL ⁽¹⁾			
Surface Resistivity	1E+02 – 1E+04	Ω	ASTM D257
INJECTION MOLDING ⁽³⁾			
Drying Temperature	90 – 100	°C	
Drying Time	6 – 8	Hrs	
Drying Time (Cumulative)	12	Hrs	
Maximum Moisture Content	0.002	%	
Melt Temperature	250 – 280	°C	
Hopper Temperature	40 – 80	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Front - Zone 3 Temperature	260 – 280	°C	
Nozzle Temperature	255 – 275	°C	
Mold Temperature	60 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw speed (Circumferential speed)	60 – 100	m/s	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	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) 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.

(3) 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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