LNP™ THERMOCOMP™ COMPOUND D251

DESCRIPTION

LNP* Thermocomp* D251 (experimental grade name as EXTC8273) is a compound based on Polycarbonate resin containing Glass Fiber, Flame Retardant. Added features of this material include: High modulus, good flatness, good ductility, Non-Brominated & Non-Chlorinated Flame Retardant.

TYPICAL PROPERTY VALUES

Revision 20191216

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	110	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	2.7	%	ASTM D 638
Tensile Modulus, 5 mm/min	6680	MPa	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	167	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	6150	MPa	ASTM D 790
Tensile Stress, break, 5 mm/min	112	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.6	%	ISO 527
Tensile Modulus, 1 mm/min	6800	MPa	ISO 527
Flexural Stress, break, 2 mm/min	165	MPa	ISO 178
Flexural Modulus, 2 mm/min	6240	MPa	ISO 178
IMPACT			
Izod Impact, notched 80*10*4 +23°C	13	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	9	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 +23°C	13	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	9	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	48	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	56	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 +23°C	48	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	54	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	10	kJ/m²	ISO 179/1eA
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	14	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	55	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	67	kJ/m²	ISO 179/1eU
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	59	kJ/m²	ISO 179/1eU
Izod Impact, unnotched, 23°C	715	J/m	ASTM D 4812
Izod Impact, notched, 23°C	150	J/m	ASTM D 256
Instrumented Impact Energy @ peak, 23°C	21	J	ASTM D 3763
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	121	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	116	°C	ASTM D 648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	121	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	117	°C	ISO 75/Af
Vicat Softening Temp, Rate A/50	131	°C	ISO 306
Vicat Softening Temp, Rate B/50	123	°C	ISO 306

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120	125	°C	ISO 306
CTE, 23°C to 80°C, flow	2.6E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.3E-05	1/°C	ISO 11359-2
Relative Temp Index, Elec [1]	80	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	80	°C	UL 746B
PHYSICAL			
Density	1.35	g/cm³	ASTM D 792
Mold Shrinkage, flow, 24 hrs	0.2 – 0.4	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs	0.2 – 0.4	%	ASTM D 955
Melt Flow Rate, 300°C/1.2 kgf	12	g/10 min	ASTM D 1238
Melt Flow Rate, 300°C/2.16 kgf	24	g/10 min	ASTM D 1238
Water Absorption, (23°C/sat)	0.07	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.03	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	10	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 300°C/2.16 kg	20	cm³/10 min	ISO 1133
ELECTRICAL			
High Amp Arc Ignition (HAI), PLC 0	≥0.6	mm	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	0	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥0.6	mm	UL 746A
Comparative Tracking Index	200	V	IEC 60112
Dielectric Strength, in oil, 1.0 mm	40	kV/mm	IEC 60243-1
Volume Resistivity	1E16 – 1E17	Ohm.cm	IEC 62631-3-1
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Dielectric Constant, 1.1 GHz	3.24	-	SABIC method
Dielectric Constant, 1.9 GHz	3.28	-	SABIC method
Dielectric Constant, 5 GHz	3.28	-	SABIC method
Dielectric Constant, 10 GHz	3.27	-	SABIC method
Dissipation Factor, 1.1 GHz	0.0067	-	SABIC method
Dissipation Factor, 1.9 GHz	0.0066	-	SABIC method
Dissipation Factor, 5 GHz	0.007	-	SABIC method
Dissipation Factor, 10 GHz	0.0072	-	SABIC method
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-102099701	-	-
Glow Wire Ignitability Temperature, 0.6 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	875	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	875	°C	IEC 60695-2-13
Glow Wire Flammability Index, 0.6 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
UL Recognized, 94V-0 Flame Class Rating	≥0.6	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥0.4	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥0.3	mm	UL 94
INJECTION MOLDING			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Drying Temperature	110	°C	
Drying Time	3 – 6	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	285 – 310	°C	
Nozzle Temperature	285 – 305	°C	
Front - Zone 3 Temperature	280 – 300	°C	
Middle - Zone 2 Temperature	270 – 290	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Mold Temperature	80 – 110	°C	
Back Pressure	0.1 – 0.3	MPa	
Screw Speed	50 – 90	rpm	

(1) 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.

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