LNP™ ELCRES™ FST2432

DESCRIPTION

LNP ELCRES FST2432 resin is a medium flow, UV stabilized, glass fiber reinforced polycarbonate Copolymer Resin for injection molding in opaque colors. This non-chlorinated, non-brominated flame retardant resin is EN 45545 R6–HL2 compliant and an ideal candidate for train seating applications.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Low Smoke and Toxicity, Non Cl/Br flame retardant, No PFAS intentionally added
Fillers	Glass Fiber, Mineral
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Mass Transportation	Rail

TYPICAL PROPERTY VALUES

Revision 20240715

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	3850	MPa	ISO 527
Tensile Stress, yield, 5 mm/min	50	MPa	ISO 527
Tensile Stress, break, 5 mm/min	42	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3.6	%	ISO 527
Tensile Strain, break, 5 mm/min	7	%	ISO 527
Flexural Modulus, 2 mm/min	3800	MPa	ISO 178
Flexural Strength, 2 mm/min	83	MPa	ISO 178
Tensile Modulus, 5 mm/min	3900	MPa	ASTM D638
Tensile Stress, yld, Type I, 5 mm/min	50	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	41	MPa	ASTM D638
Tensile Strain, yld, Type I, 5 mm/min	3.8	%	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	6.8	%	ASTM D638
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	17	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	86	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	68	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	16	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	9	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*3 +23°C	91	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	69	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	96	kJ/m²	ISO 179/1eU
Izod Impact, notched, 23°C	143	J/m	ASTM D256

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched, 23°C	1200	J/m	ASTM D4812
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	126	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	124	°C	ISO 306
Vicat Softening Temp, Rate B/120	126	°C	ISO 306
CTE, -40°C to 90°C, flow	3.6E-05	1/°C	ISO 11359-2
CTE, -40°C to 90°C, xflow	7.4E-05	1/°C	ISO 11359-2
HDT, 1.82 MPa, 3.2mm, unannealed	116	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	125	°C	ASTM D648
Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
PHYSICAL [1]			
Density	1.29	g/cm³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg	12	cm³/10 min	ISO 1133
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.12	%	ISO 62-4
Mold Shrinkage, flow	0.3 – 0.4	%	SABIC method
Mold Shrinkage, xflow	0.35 – 0.45	%	SABIC method
FLAME CHARACTERISTICS [1]			
Smoke density, DS-4, 50 kW/m2 [2]	<300	-	ISO 5659-2
Smoke density, VOF4, 50 kW/m2 [2]	<600	-	ISO 5659-2
Smoke toxicity, CITG (8 min), 50 kW/m2 [2]	<0.9	-	ISO 5659-2
Heat release, MAHRE, 50 kW/m2 [2]	<90	kW/m²	ISO 5660-1
Fire Safety Hazard Level - Requirement set R6 [2] [3]	HL2	-	EN 45545-2
INJECTION MOLDING [4]			
Drying Temperature	105 – 110	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	8	Hrs	
Hopper Temperature	40 – 60	°C	
Maximum Moisture Content	0.04	%	
Melt Temperature	285 – 320	°C	
Rear - Zone 1 Temperature	265 – 300	°C	
Middle - Zone 2 Temperature	275 – 310	°C	
Front - Zone 3 Temperature	285 – 320	°C	
Mold Temperature	85 – 120	°C	
Back Pressure	0.2 – 0.7	MPa	
Screw Speed	30 – 80	rpm	
Vent Depth	0.038 – 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) 2 to 4 mm

(3) based on EN 45545-2: 2020 revision

(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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