LNP™ STAT-LOY™ COMPOUND D3000IEU6

DESCRIPTION

LNP STAT-LOY D3000IEU6 compound is based on Polycarbonate (PC) Copolymer that has been designed towards ATEX compliant applications requiring antistatic. The material has an optimized balance between surface resistivity and impact strength retention after hydro aging, and has excellent low temperature impact. The material is available in a wide range of dark and light colors, including UV stabilization.

GENERAL INFORMATION	
Features	Antistatic, Good Processability, Heat Stabilized, High Flow, Hydrolytic Stability, Thin Wall, Aesthetics/Visual effects, Enhanced mold release, Impact resistant, Low temperature impact, Weatherable/UV stable
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding, Extrusion

INDUSTRY	SUB INDUSTRY
Automotive	Automotive EV Batteries, Automotive Lighting
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Energy Management, Electronic Components, Mobile Phone - Computer - Tablets
Industrial	Electrical, Material Handling

TYPICAL PROPERTY VALUES

Revision 20241028

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	1750	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	45	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5.5	%	ISO 527
Tensile Strain, break, 50 mm/min	>60	%	ISO 527
Tensile Nominal Strain, break, 50 mm/min	>60	%	ISO 527
Flexural Modulus, 2 mm/min	1825	MPa	ISO 178
Flexural Strength, 2 mm/min	70	MPa	ISO 178
Tensile Modulus, 50 mm/min	1750	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	45	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	>60	%	ASTM D638
Tensile Nominal Strain, brk, Type I, 50 mm/min	>60	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	1900	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	70	MPa	ASTM D790
Ball Indentation Hardness, H358/30	78	MPa	ISO 2039-1
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	60	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 +23°C	65	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	60	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	65	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	60	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	60	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Multi-Axial Instrumented Impact Total Energy, 23°C	65	J	ISO 6603-2
Multi-Axial Instrumented Impact Energy @ peak, 23°C	55	J	ISO 6603-2
Multi-Axial Instrumented Impact Total Energy, -30°C	65	J	ISO 6603-2
Multi-Axial Instrumented Impact Energy @ peak, -30°C	55	J	ISO 6603-2
Izod Impact, notched, 23°C	850	J/m	ASTM D256
Izod Impact, notched, -30°C	750	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	NB	J/m	ASTM D4812
Instrumented Dart Impact Total Energy, 23°C	40	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, 23°C	35	J	ASTM D3763
Instrumented Dart Impact Peak Force, 23°C	4000	N	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	40	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, -30°C	35	J	ASTM D3763
Instrumented Dart Impact Peak Force, -30°C	4800	N	ASTM D3763
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	105	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	123	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	123	°C	ISO 306
Vicat Softening Temp, Rate B/120	123	°C	ISO 306
Vicat Softening Temp, Rate A/50	137	°C	ISO 306
Vicat Softening Temp, Rate A/120	138	°C	ISO 306
CTE, 23°C to 50°C, flow	8.5E-05	1/°C	ISO 11359-2
CTE, 23°C to 50°C, xflow	1.1E-04	1/°C	ISO 11359-2
HDT, 1.82 MPa, 3.2mm, unannealed	105	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	123	°C	ASTM D648
Vicat Softening Temp, Rate B/50	123	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	123	°C	ASTM D1525
CTE, 23°C to 50°C, flow	8.5E-05	1/°C	ASTM E831
CTE, 23°C to 50°C, xflow	1.1E-04	1/°C	ASTM E831
Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
Temperature Index (TI)			
Tensile Strength, 3.0 mm	108	°C	IEC 60216
Tensile Strength, 1.5 mm	108	°C	IEC 60216
PHYSICAL [1]			
Density	1.16	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.15	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.3	%	ISO 62-4

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Water Absorption, (23°C/24hrs)	0.7	%	ISO 62-1
Water Absorption, (23°C/saturated)	3.5	%	ISO 62-1
Melt Volume Rate, MVR at 250°C/2.16 kg	5	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 250°C/5.0 kg	15	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 260°C/5.0 kg	23	cm³/10 min	ISO 1133
Specific Gravity	1.16	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.7	%	ASTM D570
Water Absorption, (23°C/Saturated)	3.5	%	ASTM D570
Melt Flow Rate, 250°C/5.0 kgf	15	g/10 min	ASTM D1238
Mold Shrinkage, flow (2)	0.5 – 0.7	%	SABIC method
Mold Shrinkage, xflow (2)	0.6 – 0.8	%	SABIC method
Resistance to UV light (3)			
Charpy impact (ISO 179) after Xenon-Arc weathering (ISO 4892-2)	PASS	-	IEC 60079-0
ELECTRICAL (1)			
Comparative Tracking Index	175	V	IEC 60112
Surface Resistivity, ROA (4)	1.E+09 – 1.E+11	Ω	IEC 60093
Static Decay, 5000V to <50V	<0.01	Seconds	FTMS101B
Dielectric Constant			
at 60-90 GHz	2.73	-	-
Dissipation Factor			
at 60-90 GHz	0.022	-	-
Surface Resistivity (4)	1.E+09 – 1.E+11	Ω	ASTM D257
INJECTION MOLDING (5)			
Drying Temperature	80 – 95	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.03	%	
Melt Temperature	240 – 260	°C	
Rear - Zone 1 Temperature	220 – 240	°C	
Middle - Zone 2 Temperature	230 – 250	°C	
Front - Zone 3 Temperature	240 – 260	°C	
Nozzle Temperature	240 – 260	°C	
Mold Temperature	50 – 90	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw speed (Circumferential speed)	0.15 – 0.2	m/s	

(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) The testing has been done on Natural, White, Black and Dark colors; un-notched (method 1eU) and notched (1eA).
(4) Surface resistivity for this grade might vary depending on the humidity.
(5) 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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