LNP™ ELCRIN™ WF0051IQ

REGION EUROPE

DESCRIPTION

LNP ELCRIN WF0051iQ compound is based on Polybutylene terephthalate (PBT) resin utilizing ELCRIN iQ upcycling technology containing minimum 27% Post-Consumer Recycling (PCR) weight content and 25% glass fiber. Added features of this grade include: Non-Chlorinated, Non-Brominated Flame Retardant, UL94V0 and 5VA Flame Rating, Excellent Chemical Resistance. This is a good candidate for a variety of applications needing a more sustainable FR and PBT solution.

GENERAL INFORMATION	
Applications	Electronic Components, Enclosures, Infrastructure
Features	Flame Retardant, Chemical Resistance, Non Cl/Br flame retardant
Fillers	Glass Fiber
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Home Appliances
Electrical and Electronics	Mobile Phone - Computer - Tablets, Lighting
Hygiene and Healthcare	Patient Testing
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260901

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	9900	MPa	ISO 527
Tensile Stress, break, 5 mm/min	95	MPa	ISO 527
Tensile Nominal Strain, break, 5 mm/min	1.6	%	ISO 527
Flexural Modulus, 2 mm/min	9100	MPa	ISO 178
Flexural Strength, 2 mm/min	140	MPa	ISO 178
Tensile Modulus, 5 mm/min	9700	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	1.8	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	9200	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	150	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	4	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	25	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	4	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	30	kJ/m²	ISO 179/1eU
Izod Impact, notched, 23°C	40	J/m	ASTM D256
Izod Impact, unnotched, 23°C	450	J/m	ASTM D4812
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	188	°C	ISO 75/Af

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	212	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	210	°C	ISO 306
Vicat Softening Temp, Rate B/120	196	°C	ISO 306
CTE, 23°C to 50°C, flow	3.0E-05	1/°C	ISO 11359-2
CTE, 23°C to 50°C, xflow	8.0E-05	1/°C	ISO 11359-2
HDT, 1.82 MPa, 3.2mm, unannealed	190	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	213	°C	ASTM D648
Vicat Softening Temp, Rate B/50	210	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	196	°C	ASTM D1525
CTE, 23°C to 50°C, flow	3.0E-05	1/°C	ASTM E831
CTE, 23°C to 50°C, xflow	8.0E-05	1/°C	ASTM E831
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/impact	140	°C	UL 746B
Relative Temp Index, Mech w/o impact	140	°C	UL 746B
PHYSICAL [1]			
Density	1.52	g/cm³	ISO 1183
Melt Volume Rate, MVR at 250°C/5.0 kg	20	cm³/10 min	ISO 1133
Water Absorption, (23°C/saturated)	0.2 – 0.3	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.02	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.06	%	ISO 62-4
Melt Flow Rate, 250°C/5.0 kgf	26	g/10 min	ASTM D1238
Specific Gravity	1.52	-	ASTM D792
Mold Shrinkage, flow	0.3 – 0.5	%	SABIC method
Mold Shrinkage, xflow	0.8 – 1.6	%	SABIC method
ELECTRICAL [1]			
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
Dielectric Strength, in air, 1.6 mm	21	kV/mm	ASTM D149
Surface Resistivity	≥1.0E+15	Ω	ASTM D257
Volume Resistivity	≥1.0E+15	Ω.cm	ASTM D257
Hot-Wire Ignition (HWI), PLC 0	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.5	mm	UL 746A
High Voltage Arc Track Rate {PLC}	0	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index	275	V	IEC 60112
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E45329-100063236	-	-
UL Recognized, 94V-0 Flame Class Rating	≥0.4	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	≥3	mm	UL 94
Glow Wire Ignitability Temperature, 0.75 mm	750	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	725	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Glow Wire Flammability Index, 0.75 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
INJECTION MOLDING [3]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	245 – 260	°C	
Rear - Zone 1 Temperature	230 – 240	°C	
Middle - Zone 2 Temperature	235 – 250	°C	
Front - Zone 3 Temperature	240 – 260	°C	
Nozzle Temperature	230 – 255	°C	
Mold Temperature	40 – 100	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw speed (Circumferential speed)	0.15 – 0.25	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) 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) 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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