LNP™ ELCRIN™ WF008NRC1

DESCRIPTION

LNP ELCRIN WF008NRC1 (experimental grade name as ER017348) is an iQ PBT/glass fiber compound for nano-molding technology (NMT) application. Added features of this material include: >10% PCR content, high modulus, excellent metal bonding force, good surface quality, high impact, good adhesion and good color stability during anodizing process.

GENERAL INFORMATION	
Features	Chemical Resistance, High Flow, Advanced Recycling, Nano molding technology, High stiffness/Strength, Impact resistant, No PFAS intentionally added (PCR contains <50ppm total organic fluorine content)
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Personal Accessory

TYPICAL PROPERTY VALUES

Revision 20260422

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	135	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.6	%	ASTM D638
Tensile Modulus, 5 mm/min	12800	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	146	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	2.7	%	ASTM D638
Tensile Modulus, 50 mm/min	13000	MPa	ASTM D638
Flexural Strength, 1.3 mm/min, 50 mm span	212	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	10800	MPa	ASTM D790
Tensile Modulus, 1 mm/min	13000	MPa	ISO 527
Tensile Stress, break, 5 mm/min	135	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.4	%	ISO 527
Tensile Stress, break, 50 mm/min	146	MPa	ISO 527
Tensile Strain, break, 50 mm/min	2.5	%	ISO 527
Flexural Strength, 2 mm/min	215	MPa	ISO 178
Flexural Modulus, 2 mm/min	11700	MPa	ISO 178
Bonding strength (TRI) , 5 mm/min, Type A	38	MPa	ISO 19095
IMPACT [1]			
Izod Impact, notched, 23°C	135	J/m	ASTM D256
Izod Impact, notched, -30°C	112	J/m	ASTM D256
Izod Impact, unnotched, 23°C	900	J/m	ASTM D4812
Izod Impact, notched 80*10*4 +23°C	13	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11.5	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	53	kJ/m²	ISO 180/1U

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Charpy Impact, notched, 23°C	13	kJ/m²	ISO 179/2C
Charpy Impact, notched, -30°C	11.2	kJ/m²	ISO 179/2C
Charpy Impact, unnotched, 23°C	60	kJ/m²	ISO 179/2C
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	221	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	208	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	210	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	221	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	209	°C	ISO 75/Af
CTE			
-40°C to 40°C, flow	1.9E-05	1/°C	ASTM E831
-40°C to 40°C, xflow	6.8E-05	1/°C	ASTM E831
50°C to 120°C, flow	1.3E-05	1/°C	ASTM E831
50°C to 120°C, xflow	1.2E-04	1/°C	ASTM E831
-40°C to 40°C, flow	2.0E-05	1/°C	ISO 11359-2
-40°C to 40°C, xflow	7.4E-05	1/°C	ISO 11359-2
50°C to 120°C, flow	1.3E-05	1/°C	ISO 11359-2
50°C to 120°C, xflow	1.4E-04	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	207	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	205	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	207	°C	ISO 306
Vicat Softening Temp, Rate B/120	206	°C	ISO 306
Relative Temp Index, Elec [2]	75	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	75	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	75	°C	UL 746B
PHYSICAL [1]			
Density	1.61	g/cm³	ISO 1183
Water Absorption, (23°C/24hrs)	0.03	%	ISO 62-1
Moisture Absorption, (23°C/50% RH/24hrs)	0.01	%	ISO 62-4
Melt Flow Rate			
275°C/2.16 kgf	14	g/10 min	ASTM D1238
275°C/5 kgf	51	g/10 min	ASTM D1238
Melt Volume Rate			
275°C/2.16 kg	12	cm³/10 min	ISO 1133
275°C/5 kg	36	cm³/10 min	ISO 1133
Mold Shrinkage, flow [3]	0.35	%	SABIC method
Mold Shrinkage, xflow [3]	0.75	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant			
1.1 GHz	3.92	-	SABIC method
1.9 GHz	3.94	-	SABIC method
5 GHz	3.96	-	SABIC method
10 GHz	3.93	-	SABIC method
Dissipation Factor			
1.1 GHz	0.0107	-	SABIC method

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1.9 GHz	0.0103	-	SABIC method
5 GHz	0.0092	-	SABIC method
10 GHz	0.0091	-	SABIC method
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E207780-104697665	-	-
UL Recognized, 94HB Flame Class Rating	≥0.7	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 4	Hrs	
Maximum Moisture Content	0.02	%	
Hopper Temperature	250 – 270	°C	
Melt Temperature	255 – 275	°C	
Nozzle Temperature	250 – 275	°C	
Front - Zone 3 Temperature	250 – 275	°C	
Middle - Zone 2 Temperature	240 – 260	°C	
Rear - Zone 1 Temperature	40 – 60	°C	
Mold Temperature [5]	100 – 150	°C	

(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) 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.

(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.

(5) Suggest to use narrow mold temperature 140C~150C for NMT application.

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