LNP™ ELCRIN™ WF006NAiQ2

ER015842

DESCRIPTION

LNP ELCRIN WF006NAiQ2 is an iQ PBT Generation 2 based compound containing 30% glass for NMT applications. Added features of this material include : >25% PCR, high flow, low warpage, high metal bonding strength and good chemical resistance.

GENERAL INFORMATION	
Features	Chemical Resistance, Good Mold Release, Good Processability, Heat Stabilized, Low Warpage, UV Resistant, Colorable, Improved rigidity, High Stiffness, Nano molding technology grade, Easy Flow, Sustainable (Advanced Recycling)
Fillers	Glass Fiber
Polymer Types	Polybutylene Terephthalate (PBT)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Consumer	Commercial Appliance
Electrical and Electronics	Electrical Devices and Displays, Electrical Components and Infrastructure

TYPICAL PROPERTY VALUES

Revision 20220413

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	106	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2.6	%	ASTM D638
Tensile Modulus, 5 mm/min	8240	MPa	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	163	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	7320	MPa	ASTM D790
Tensile Stress, break, 5 mm/min	110	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2.6	%	ISO 527
Tensile Stress, yield, 5 mm/min	111	MPa	ISO 527
Tensile Modulus, 1 mm/min	8290	MPa	ISO 527
Flexural Modulus, 2 mm/min	7820	MPa	ISO 178
Flexural Stress, break, 2 mm/min	170	MPa	ISO 178
IMPACT [1]			
Instrumented Dart Impact Total Energy, 23°C	23	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, 23°C	12	J	ASTM D3763
Instrumented Dart Impact Peak Force, 23°C	1600	N	ASTM D3763
Izod Impact, unnotched, 23°C	831	J/m	ASTM D4812
Izod Impact, notched, 23°C	138	J/m	ASTM D256
Izod Impact, notched, -30°C	95	J/m	ASTM D256
Izod Impact, unnotched 80*10*4 +23°C	70	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	15	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m²	ISO 180/1A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
THERMAL [1]			
Vicat Softening Temp, Rate B/120	162	°C	ASTM D1525
Vicat Softening Temp, Rate B/50	158	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	161	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	214	°C	ASTM D648
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	174	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	216	°C	ISO 75/Bf
CTE, -40°C to 40°C, flow	2.3E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	1.4E-04	1/°C	ASTM E831
PHYSICAL [1]			
Moisture Absorption, (23°C/50% RH/24hrs) [2]	0.02	%	ISO 62-4
Water Absorption, (23°C/24hrs) [2]	0.06	%	ISO 62-1
Specific Gravity	1.53	-	ASTM D792
Density	1.53	g/cm³	ISO 1183
Melt Flow Rate, 250°C/5.0 kgf	10	g/10 min	ASTM D1238
Melt Flow Rate, 275°C/5 kgf	19	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 250°C/5.0 kg	8	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 275°C/5 kg	14	cm³/10 min	ISO 1133
Mold Shrinkage, flow [3]	0.1 – 0.2	%	SABIC method
Mold Shrinkage, xflow [3]	0.2 – 0.3	%	SABIC method
ELECTRICAL [1]			
Dielectric Constant			
1.1 GHz	3.60	-	SABIC method
2.45 GHz	3.60	-	SABIC method
5 GHz	3.58	-	SABIC method
10 GHz	3.58	-	SABIC method
Dissipation Factor			
1.1 GHz	0.013	-	SABIC method
2.45 GHz	0.012	-	SABIC method
5 GHz	0.011	-	SABIC method
10 GHz	0.009	-	SABIC method
FLAME CHARACTERISTICS [4]			
UL Yellow Card Link	E207780-104552483	-	-
UL Recognized, 94HB Flame Class Rating	≥0.7	mm	UL 94
INJECTION MOLDING [5]			
Drying Temperature	110 – 120	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 270	°C	
Nozzle Temperature	245 – 275	°C	
Front - Zone 3 Temperature	250 – 270	°C	
Middle - Zone 2 Temperature	250 – 270	°C	
Rear - Zone 1 Temperature	240 – 260	°C	
Hopper Temperature	40 – 60	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Temperature [6]	100 – 160	°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) Based on internal method similar to ISO 62
(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) 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.
(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.
(6) Suggest to use narrow mold temperature 140C~160C for NMT application.

DISCLAIMER