NORYL PPX™ Resin PPX640F

REGION AMERICAS

DESCRIPTION

NORYL PPX640F resin is a 40% glass fiber reinforced alloy of polyphenylene ether (PPE) + polypropylene (PP). This injection moldable grade is NSF 61 certified and exhibits high elongation and stiffness along with temperature performance, impact resistance, hydrolytic and dimensional stability. NORYL PPX640F resin is an excellent candidate for copper and brass replacement in water management applications such as water filtration systems, boiler systems, and heat exchangers.

GENERAL INFORMATION	
Features	Chemical Resistance, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Food contact, Creep resistant, Dimensional stability, High stiffness/Strength, High temperature resistance, Impact resistant, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polyphenylene Ether + PP (PPE+PP)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Water Management

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	95	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	95	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	6.4	%	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	150	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	8310	MPa	ASTM D790
IMPACT [1]			
Izod Impact, unnotched, 23°C	576	J/m	ASTM D4812
Izod Impact, notched, 23°C	106	J/m	ASTM D256
Izod Impact, notched, -30°C	96	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	16	J	ASTM D3763
Instrumented Dart Impact Total Energy, -30°C	14	J	ASTM D3763
THERMAL [1]			
Vicat Softening Temp, Rate B/50	163	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	158	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	146	°C	ASTM D648
CTE, -40°C to 40°C, flow	1.08E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	6.3E-05	1/°C	ASTM E831
PHYSICAL [1]			
Specific Gravity	1.3	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [2]	0.17 – 0.18	%	SABIC method

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Mold Shrinkage, xflow, 3.2 mm [2]	0.27 – 0.61	%	SABIC method
Melt Flow Rate, 260°C/5.0 kgf	1.3	g/10 min	ASTM D1238
FLAME CHARACTERISTICS [3]			
UL Yellow Card Link	E121562-221228	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	65 – 75	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	260 – 305	°C	
Nozzle Temperature	260 – 305	°C	
Front - Zone 3 Temperature	255 – 300	°C	
Middle - Zone 2 Temperature	250 – 290	°C	
Rear - Zone 1 Temperature	245 – 290	°C	
Mold Temperature	40 – 65	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	
Vent Depth	0.051 – 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) 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) 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.

(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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