

NORYL™ RESIN FP3060

REGION EUROPE

DESCRIPTION

NORYL FP3060 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This injection moldable grade contains non-brominated, non-chlorinated flame retardant with a UL94 flame rating of V0 at 2.5mm and V0 at 2.5mm. NORYL FP3060 resin was designed to have very good dimensional stability with high flow and exhibits good rheological properties, high heat resistance, hydrolysis resistance, and very low density. The combination of these properties makes this material an excellent candidate for Flat Panel TV enclosure applications.

GENERAL INFORMATION

Features

Flame Retardant, High Flow, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability

Fillers

Unreinforced

Polymer Types

Polyphenylene Ether + PS (PPE+PS)

Processing Techniques

Injection Molding

INDUSTRY

Electrical and Electronics

SUB INDUSTRY

Mobile Phone - Computer - Tablets

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yld, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	3	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	12	%	ASTM D638
Tensile Modulus, 50 mm/min	2200	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	84	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2400	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	42	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3	%	ISO 527
Tensile Strain, break, 50 mm/min	11	%	ISO 527
Tensile Modulus, 1 mm/min	2420	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	82	MPa	ISO 178
Flexural Modulus, 2 mm/min	2530	MPa	ISO 178
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	78	J/m	ASTM D256
Izod Impact, notched 80*10*4 +23°C	6	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m²	ISO 179/1eA
THERMAL ⁽¹⁾			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/50	105	°C	ASTM D1525
HDT, 1.82 MPa, 3.2mm, unannealed	80	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.3E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	8.3E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	91	°C	ISO 306
Vicat Softening Temp, Rate B/120	93	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	74	°C	ISO 75/Af
Relative Temp Index, Elec ⁽²⁾	65	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽²⁾	65	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽²⁾	65	°C	UL 746B
PHYSICAL ⁽¹⁾			
Specific Gravity	1.1	-	ASTM D792
Density	1.1	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.13	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.02	%	ISO 62
Melt Volume Rate, MVR at 280°C/1.2 kg	20	cm ³ /10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/2.16 kg	41	cm ³ /10 min	ISO 1133
FLAME CHARACTERISTICS ⁽²⁾			
UL Yellow Card Link	E45329-100064745	-	-
UL Recognized, 94V-0 Flame Class Rating	≥2.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING ⁽³⁾			
Drying Temperature	65 – 75	°C	
Drying Time	2 – 3	Hrs	
Melt Temperature	250 – 285	°C	
Nozzle Temperature	240 – 270	°C	
Front - Zone 3 Temperature	250 – 285	°C	
Middle - Zone 2 Temperature	230 – 260	°C	
Rear - Zone 1 Temperature	200 – 220	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	40 – 65	°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, colors and regions. 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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