NORYL™ RESIN EM6100

REGION EUROPE

DESCRIPTION

NORYL EM6100 is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This grade exhibits a balance of flow/heat/impact, dimensional stability, along with paint adhesion. NORYL EM6100 resin is targeted for the automotive interior market in applications such as HVAC housings and radio components. MS-DB424, WSBM4D844-A9, GMP.PPE.007.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Dimensional stability, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, break	40	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	43	MPa	ASTM D638
Tensile Strain, yield	3	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	65	%	ASTM D638
Tensile Modulus, 5 mm/min	1900	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	67	MPa	ASTM D790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	66	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2100	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	2000	MPa	ASTM D790
Tensile Stress, yield	42	MPa	ISO 527
Tensile Stress, break	40	MPa	ISO 527
Tensile Strain, yield	2.8	%	ISO 527
Tensile Strain, break	60	%	ISO 527
Tensile Modulus, 1 mm/min	2050	MPa	ISO 527
Flexural Stress	65	MPa	ISO 178
Flexural Modulus	2100	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	453	J/m	ASTM D256
Izod Impact, notched, -30°C	250	J/m	ASTM D256
Instrumented Dart Impact Energy @ peak, 23°C	36	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, -30°C	24	J	ASTM D3763
Instrumented Dart Impact Total Energy, 23°C	42	J	ASTM D3763

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched 80*10*4 +23°C	33	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m²	ISO 180/1A
Charpy Impact, notched, 23°C	33	kJ/m²	ISO 179/2C
Charpy Impact, notched, -30°C	19	kJ/m²	ISO 179/2C
THERMAL [1]			
HDT, 0.45 MPa, 3.2 mm, unannealed	124	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	106	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	115	°C	ASTM D648
CTE, 0°C to 100°C, flow	1.17E-04	1/°C	ASTM E831
Vicat Softening Temp, Rate B/50	119	°C	ISO 306
Vicat Softening Temp, Rate B/120	123	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	126	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	110	°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	1.05	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.2	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm [3]	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 280°C/5.0 kgf	15	g/10 min	ASTM D1238
Melt Volume Rate, MVR at 280°C/5.0 kg	15	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-221232	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING [4]			
Drying Temperature	95 – 105	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	265 – 295	°C	
Nozzle Temperature	265 – 295	°C	
Front - Zone 3 Temperature	255 – 295	°C	
Middle - Zone 2 Temperature	245 – 290	°C	
Rear - Zone 1 Temperature	230 – 280	°C	
Mold Temperature	65 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	
Vent Depth	0.038 – 0.051	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) 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.

DISCLAIMER