

NORYL™ RESIN FM3020V

REGION ASIA

DESCRIPTION

NORYL FM3020V resin is a 30% glass fiber and mineral filled high modulus foamable blend of polyphenylene ether (PPE) + polystyrene (PS) This grade offers up to 9% weight reduction at 5mm wall and contains non-brominated, non-chlorinated flame retardant with a UL94 flame rating of 5VA and V1 at 5mm. NORYL FM3020V resin offers fast cycle time, improved processing, and exhibits good dimensional stability and low moisture absorption. The unique combination of properties in this structural foam material allows for designing optimum wall thickness in computer and business machine applications, electrical enclosures/housings and medical equipment.

GENERAL INFORMATION	
Features	Flame Retardant, Good Processability, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, High stiffness/Strength
Fillers	Glass Fiber
Brands	NORYL™
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Structural Foam Molding

INDUSTRY	SUB INDUSTRY
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Electronic Components, Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yield	75	MPa	SABIC - Japan Method
Tensile Strain, break	6	%	SABIC - Japan Method
Flexural Stress	113	MPa	ASTM D790
Flexural Modulus	6370	MPa	ASTM D790
THERMAL ⁽¹⁾			
HDT, 1.82 MPa, 6.4 mm, unannealed	116	°C	ASTM D648
CTE, -30°C to 30°C	0.000024 – 0.000035	1 / °C	TMA
PHYSICAL ⁽¹⁾			
Specific Gravity	1.332	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.08	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm ⁽²⁾	0.25	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm ⁽²⁾	0.3	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	19.2	g/10 min	ASTM D1238
FLAME CHARACTERISTICS ⁽³⁾			
UL Yellow Card Link	E207780-237015	-	-
UL Recognized, 94V-1 Flame Class Rating	5	mm	UL 94

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94-5VA Flame Class Rating	5	mm	UL 94
INJECTION MOLDING ⁽⁴⁾			
Drying Temperature	105 – 110	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	295 – 315	°C	
Front - Zone 3 Temperature	280 – 315	°C	
Middle - Zone 2 Temperature	270 – 310	°C	
Rear - Zone 1 Temperature	260 – 305	°C	
Mold Temperature	75 – 105	°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) 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, colors and regions. 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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