NORYL™ RESIN HMC1010

DESCRIPTION

NORYL HMC1010 compound is based on Polyphenylene Ether (PPE) resin containing 10% carbon fiber. Added features of this grade include: Electrically Conductive, Non-Chlorinated, Non-Brominated Flame Retardant.

GENERAL INFORMATION	
Features	Flame Retardant, Electrically Conductive, Non Cl/Br flame retardant, Carbon fiber filled, High stiffness/Strength
Fillers	Carbon Fiber
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Electrical and Electronics	Electronic Components, Mobile Phone - Computer - Tablets
Industrial	Electrical, Material Handling

TYPICAL PROPERTY VALUES

Revision 20241028

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 5 mm/min	79	MPa	ASTM D638
Tensile Stress, brk, Type I, 5 mm/min	71	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	103	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	6890	MPa	ASTM D790
Hardness, Rockwell R	122	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	83	mg/1000cy	ASTM D1044
IMPACT [1]			
Izod Impact, unnotched, 23°C	240	J/m	ASTM D4812
Izod Impact, notched, 23°C	69	J/m	ASTM D256
THERMAL [1]			
HDT, 0.45 MPa, 6.4 mm, unannealed	111	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	105	°C	ASTM D648
PHYSICAL [1]			
Specific Gravity	1.15	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm [2]	0.05 – 0.15	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [2]	0.15 – 0.3	%	SABIC method
ELECTRICAL [1]			
Volume Resistivity [3]	8.E+03	Ω.cm	ASTM D257
Surface Resistivity [3]	1.3E+04	Ω	ASTM D257
Static Decay, 5000V to <50V	<0.01	Seconds	FTMS101B
FLAME CHARACTERISTICS [4]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link	E121562-221166	-	-
UL Recognized, 94V-1 Flame Class Rating	2	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	2	mm	UL 94
INJECTION MOLDING [5]			
Drying Temperature	90 – 95	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	255 – 280	°C	
Nozzle Temperature	255 – 280	°C	
Front - Zone 3 Temperature	245 – 280	°C	
Middle - Zone 2 Temperature	230 – 275	°C	
Rear - Zone 1 Temperature	220 – 270	°C	
Mold Temperature	65 – 90	°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) 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) Measurement meets requirements as specified in ASTM D4496.
(4) 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.
(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.

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