NORYL™ Resin 7310RC5

DESCRIPTION

NORYL 7310RC5 resin is a unfilled Post Consumer recycle (PCR) based injection moldable modified polyphenylene ether resin comprising at least 50% PCR styrenic series resin content. This injection moldable grade exhibits good surface appearance, high ductility, and good impact resistance along with low moisture absorption, creep resistance, dimensional stability, and hydrolytic stability. NORYL 7310RC5 resin is an excellent candidate for a variety of applications. Black only offering.

GENERAL INFORMATION	
Applications	Building and Construction
Features	Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Dimensional stability, No PFAS intentionally added (PCR contains <50ppm total organic fluorine content)
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Building and Construction	Building Component
Consumer	Consumer Goods, Home Appliances, Commercial Appliance
Electrical and Electronics	Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20240201

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	50	MPa	ISO 527
Tensile Stress, break, 50 mm/min	45	MPa	ISO 527
Tensile Nominal Strain, break, 50 mm/min	10	%	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	2350	MPa	ISO 178
Tensile Modulus, 50 mm/min	2400	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	50	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	45	MPa	ASTM D638
Tensile Nominal Strain, brk, Type I, 50 mm/min	9	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2300	MPa	ASTM D790
Flexural Stress, yld, 1.3 mm/min, 50 mm span	80	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	70	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	58	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	7	kJ/m²	ISO 179/1eA

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
Izod Impact, notched, 23°C	70	J/m	ASTM D256
Izod Impact, notched, -30°C	50	J/m	ASTM D256
Izod Impact, unnotched, 23°C	950	J/m	ASTM D4812
Izod Impact, unnotched, -30°C	900	J/m	ASTM D4812
THERMAL (1)			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	110	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	124	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	130	°C	ISO 306
Vicat Softening Temp, Rate B/120	134	°C	ISO 306
Vicat Softening Temp, Rate A/50	134	°C	ISO 306
HDT, 1.82 MPa, 3.2mm, unannealed	110	°C	ASTM D648
Vicat Softening Temp, Rate B/50	132	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	134	°C	ASTM D1525
CTE, -40°C to 40°C, flow	7.0E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	7.4E-05	1/°C	ASTM E831
Ball Pressure Test, approximate maximum	130	°C	IEC 60695-10-2
Relative Temp Index, Elec	65	°C	UL 746B
Relative Temp Index, Mech w/impact	65	°C	UL 746B
Relative Temp Index, Mech w/o impact	65	°C	UL 746B
PHYSICAL (1)			
Mold Shrinkage, flow, 3.2 mm	0.28	%	SABIC method
Density	1.1	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.06	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.2	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	12	cm³/10 min	ISO 1133
Melt Flow Rate, 280°C/5.0 kgf	12	g/10 min	ASTM D1238
Specific Gravity	1.1	-	ASTM D792
INJECTION MOLDING (2)			
Drying Temperature	105 – 110	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	280 – 310	°C	
Nozzle Temperature	280 – 310	°C	
Front - Zone 3 Temperature	270 – 310	°C	
Middle - Zone 2 Temperature	260 – 305	°C	
Rear - Zone 1 Temperature	250 – 300	°C	
Mold Temperature	75 – 105	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

(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) 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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