NORYL™ RESIN BN9003G

REGION ASIA

DESCRIPTION

NORYL™ BN0039 resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This blow moldable grade exhibits a good balance of impact resistance and surface aesthetics. NORYL BN0039 resin, with its Low warpage and dimensional stability, is an excellent candidate for automotive exterior components including spoilers.

TYPICAL PROPERTY VALUES

Revision 20191015

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	48	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	42	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	45	%	ASTM D 638
Tensile Modulus, 5 mm/min	2240	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	70	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2150	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	47	MPa	ISO 527
Tensile Stress, break, 50 mm/min	42	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	3.4	%	ISO 527
Tensile Strain, break, 50 mm/min	30.4	%	ISO 527
Tensile Modulus, 1 mm/min	2170	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	75	MPa	ISO 178
Flexural Modulus, 2 mm/min	2190	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, notched, 23°C	320	J/m	ASTM D 256
Izod Impact, notched, -30°C	127	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	40	J	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	54	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	25	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	10	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	12	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	107	kJ/m²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	141	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	124	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	108	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.6E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	9.5E-05	1/°C	ASTM E 831

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 40°C, flow	8.6E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	9.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	N/A	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	127	°C	ISO 306
Vicat Softening Temp, Rate B/120	130	°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
PHYSICAL			
Specific Gravity	1.06	-	ASTM D 792
Mold Shrinkage on Tensile Bar, flow	0.55 – 0.75	%	SABIC method
Mold Shrinkage, flow, 3.2 mm	0.55 – 0.75	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.55 – 0.75	%	SABIC method
Melt Flow Rate, 280°C/5.0 kgf	10	g/10 min	ASTM D 1238
Density	1.06	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	12	cm³/10 min	ISO 1133
EXTRUSION BLOW MOLDING			
Drying Temperature	80 – 85	°C	
Drying Time	2 – 4	hrs	
Melt Temperature (Parison)	235 – 260	°C	
Barrel - Zone 1 Temperature	225 – 260	°C	
Barrel - Zone 2 Temperature	230 – 260	°C	
Barrel - Zone 3 Temperature	235 – 260	°C	
Barrel - Zone 4 Temperature	235 – 260	°C	
Adapter - Zone 5 Temperature	235 – 260	°C	
Head - Zone 6 - Top Temperature	235 – 260	°C	
Head - Zone 7 - Middle Temperature	235 – 260	°C	
Head - Zone 7 - Bottom Temperature	235 – 260	°C	
Mold Temperature	65 – 95	°C	
Die Temperature	235 – 260	°C	

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