



NORYL™ Resin BN9003G
Americas: COMMERCIAL

PPE+PS blend. Unfilled. Blow molding. Excellent balance of impact and surface aesthetics. Suitable for automotive exterior components including spoilers.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	480	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	420	kgf/cm ²	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	22800	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	710	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	21900	kgf/cm ²	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	cm-kgf/cm	ASTM D 4812
Izod Impact, notched, 23°C	32	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	12	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	407	cm-kgf	ASTM D 3763
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	54	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	25	kJ/m ²	ISO 180/1A



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IMPACT			
Izod Impact, notched 80*10*4 -30°C	10	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	26	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	12	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	107	kJ/m ²	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
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 (2) (5)	0.55 - 0.75	%	SABIC Method
Mold Shrinkage, flow, 3.2 mm (5)	0.55 - 0.75	%	SABIC Method
Mold Shrinkage, xflow, 3.2 mm (5)	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/cm ³	ISO 1183



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PHYSICAL			
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	cm ³ /10 min	ISO 1133



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
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