

NORYL™ RESIN HNA055

REGION ASIA

DESCRIPTION

>PPE+PS-HI< Autoclavable engineering thermoplastic. Biocompatible per ISO10993 (color dependent).

TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Modulus, 50 mm/min	2480	MPa	ASTM D 638
Tensile Stress, yld, Type I, 50 mm/min	67	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	16.3	%	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	101	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2540	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	67	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.9	%	ISO 527
Tensile Strain, break, 50 mm/min	12.6	%	ISO 527
Tensile Modulus, 1 mm/min	2400	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	107	MPa	ISO 178
Flexural Modulus, 2 mm/min	2490	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	293	J/m	ASTM D 256
Izod Impact, notched, -30°C	144	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	54	J	ASTM D 3763
Izod Impact, notched 80°10°4 +23°C	24	kJ/m ²	ISO 180/1A
Izod Impact, notched 80°10°4 -30°C	14	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10°4 sp=62mm	27	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	168	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	147	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.66E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	9.25E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.66E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	9.25E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	168	°C	ISO 306
Vicat Softening Temp, Rate B/120	169	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80°10°4 sp=64mm	147	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.08	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.6 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	6.2	g/10 min	ASTM D 1238

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Density	1.08	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.23	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	5	cm ³ /10 min	ISO 1133
INJECTION MOLDING			
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	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

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