SABIC Innovative Plastics™

Noryl* Resin EXNL0353

Americas: COMMERCIAL

EXNL0353 resin is a modified PPE + PS blend with an excellent balance of non-halogenated flame retardance, hydrolytic stability, impact and heat resistance, good flow, and low specific gravity for light-weight parts. This injection-molding resin is available in custom colors and meets UL 94 V-0 requirements at 1.5 mm. EXNL0353 may be an excellent candidate for industrial battery applications.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	69	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	53	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	7.6	%	ASTM D 638
Tensile Modulus, 5 mm/min	2720	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	105	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2850	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4	%	ISO 527
Tensile Strain, break, 50 mm/min	9.5	%	ISO 527
Tensile Modulus, 1 mm/min	2970	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	105	MPa	ISO 178
Flexural Modulus, 2 mm/min	2750	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	120	J/m	ASTM D 256
Izod Impact, notched, -30°C	79	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	36	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	10	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	7	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	11	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	114	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	92	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.3E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	6.9E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.3E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	114	°C	ISO 306
Vicat Softening Temp, Rate B/120	116	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	93	°C	ISO 75/Af
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.11	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.34 - 0.52	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	35.5	g/10 min	ASTM D 1238
Density	1.1	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.11	%	ISO 62

Moisture Absorption (23°C / 50% RH)	0.09	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	32	cm³/10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	2.6E+16 - 4.3E+16	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 1.6 mm	27.7	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	2.3	-	ASTM D 150
Dissipation Factor, 1 MHz	0.003	-	ASTM D 150
Hot Wire Ignition {PLC)	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	1	PLC Code	UL 746A
Comparative Tracking Index	225	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Compliant, 94V-0 Flame Class Rating (3)(4)	1.5	mm	UL 94 by GE

Source GMD, last updated:07/22/2008

Processing

Parameter Injection Molding	Value	Unit
Drying Temperature	95 - 100	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	260 - 290	°C
Nozzle Temperature	260 - 290	°C
Front - Zone 3 Temperature	250 - 290	°C
Middle - Zone 2 Temperature	240 - 280	°C
Rear - Zone 1 Temperature	225 - 275	°C
Mold Temperature	70 - 95	°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

Source GMD, last updated:07/22/2008

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.

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