SABIC Innovative Plastics™

Noryl* Resin HIPS3190

Americas: COMMERCIAL

Complies with FDA Regulation 21 CFR 177.1640 for rubber modified polystyrene. HB rating from 0.062-0.125" pending. Natural only.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	28	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	24	MPa	ASTM D 638
Tensile Stress, yld, Type I, 5 mm/min	23	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	22	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	1.7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	67	%	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	1.4	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	67	%	ASTM D 638
Tensile Modulus, 50 mm/min	2210	MPa	ASTM D 638
Tensile Modulus, 5 mm/min	190	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	42	MPa	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	36	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2130	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	1970	MPa	ASTM D 790
Hardness, Rockwell R	94	-	ASTM D 785
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	192	J/m	ASTM D 256
Izod Impact, notched, -30°C	74	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	23	J	ASTM D 3763
Instrumented Impact Total Energy, -30°C	11	J	ASTM D 3763
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	92	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	90	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	77	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	93	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	83	°C	ASTM D 648
CTE, -40°C to 40°C, flow	5.22E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.92E-05	1/°C	ASTM E 831
Relative Temp Index, Elec	50	°C	UL 746B
Relative Temp Index, Mech w/impact	50	°C	UL 746B
Relative Temp Index, Mech w/o impact	50	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.04	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.6 - 0.8	%	SABIC Method
Melt Flow Rate, 200°C/5.0 kgf	2.6	g/10 min	ASTM D 1238
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94HB Flame Class Rating (3)	1.52	mm	UL 94

Source GMD, last updated:03/10/2000

Processing

Parameter Injection Molding	Value	Unit
Drying Temperature	80 - 85	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	8	hrs
Melt Temperature	230	°C
Nozzle Temperature	190 - 230	°C
Front - Zone 3 Temperature	190 - 230	°C
Middle - Zone 2 Temperature	190 - 230	°C
Rear - Zone 1 Temperature	175 - 225	°C
Mold Temperature	40 - 65	°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:03/10/2000

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.