SABIC Innovative Plastics™

Lexan* Resin 4704

Americas: COMMERCIAL

High heat resistant polycarbonate copolymer, provides DTUL of 300F at 264 psi. FDA food contact compliant in limited colors. Effective January 15th, 2008 this grade will no longer be supported with biocompatibility information and should not be used for medical applications which require biocompatibility. Alternative grade HPH4704.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	77	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	8	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	78	%	ASTM D 638
Tensile Modulus, 5 mm/min	2080	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	97	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2330	MPa	ASTM D 790
Hardness, Rockwell M	92	-	ASTM D 785
Hardness, Rockwell R	127	-	ASTM D 785
Tensile Stress, yield, 50 mm/min	68	MPa	ISO 527
Tensile Stress, break, 50 mm/min	68	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	102	%	ISO 527
Tensile Modulus, 1 mm/min	2170	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	66	MPa	ISO 178
Flexural Modulus, 2 mm/min	2070	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, unnotched, 23°C	3204	J/m	ASTM D 4812
Izod Impact, notched, 23°C	373	J/m	ASTM D 256
Izod Impact, notched, -30°C	84	J/m	ASTM D 256
Tensile Impact, Type "S"	577	kJ/m²	ASTM D 1822
Falling Dart Impact (D 3029), 23°C	149	J	ASTM D 3029
Instrumented Impact Total Energy, 23°C	74	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	7	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m²	ISO 180/1A
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	173	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	148	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, flow	8.1E-05	1/°C	ASTM E 831
Specific Heat	1.25	J/g-°C	ASTM C 351
Thermal Conductivity	0.21	W/m-°C	ASTM C 177
CTE, -40°C to 40°C, flow	6.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	165	°C	ISO 306
Vicat Softening Temp, Rate B/120	167	°C	ISO 306

HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	150	°C	ISO 75/Af
Relative Temp Index, Elec	130	°C	UL 746B
Relative Temp Index, Mech w/impact	130	°C	UL 746B
Relative Temp Index, Mech w/o impact	130	°C	UL 746B
PHYSICAL	Value	Unit	Standard
Specific Gravity	1.2	-	ASTM D 792
Specific Volume	0.83	cm³/g	ASTM D 792
Density	1.19	g/cm³	ASTM D 792
Water Absorption, 24 hours	0.19	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.8 - 1	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	2	g/10 min	ASTM D 1238
Density	1.2	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.16	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.35	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	2	cm³/10 min	ISO 1133
OPTICAL	Value	Unit	Standard
Light Transmission	85	%	ASTM D 1003
Haze	1	%	ASTM D 1003
Refractive Index	1.6	-	ASTM D 542
ELECTRICAL	Value	Unit	Standard
Volume Resistivity	>2.5E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	20	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.27	-	ASTM D 150
Relative Permittivity, 1 MHz	3.1	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0016	-	ASTM D 150
Dissipation Factor, 100 Hz	0.026	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC)	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Recognized, 94HB Flame Class Rating (3)	1.47	mm	UL 94

Source GMD, last updated:01/03/2006

Processing

Parameter Injection Molding	Value	Unit
Drying Temperature	120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	350 - 370	°C
Nozzle Temperature	345 - 365	°C
Front - Zone 3 Temperature	350 - 370	°C
Middle - Zone 2 Temperature	340 - 360	°C
Rear - Zone 1 Temperature	325 - 350	°C
Mold Temperature	80 - 115	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	40 - 70	rpm
Shot to Cylinder Size	40 - 60	%
Vent Depth	0.025 - 0.076	mm

Source GMD, last updated:01/03/2006

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.