



Crastin® PBT

thermoplastic polyester resin



Applications

Crastin PBT thermoplastic polyester resins exhibit a broad range of mechanical, thermal, and electrical properties, as well as excellent surface appearance and ease of processing. These characteristics make them outstanding candidates for replacement of metal, thermosets, and other thermoplastics.

Processing

Crastin PBT has good thermal stability and can be processed with a melt temperature ranging from 243 to 266°C (470 to 510°F).

Due to the fast crystallization rate of Crastin PBT resins, the mold temperature ranges from 30–130°C (85–265°F).

Handling of Virgin Resin and Rework

Virgin resin or regrind must be dried to a moisture content of 0.04% or less prior to molding. The use of dehumidified hopper dryers is the only practical way to maintain moisture levels as recommended.

Table 1
Compositions

Grade	Characteristics	Candidate Uses
6129	High-viscosity unmodified polybutylene terephthalate suitable for extrusion	Film, sheet, tubing, monofilament
6130	Medium-viscosity unmodified polybutylene terephthalate for injection molding	General mechanical goods such as caps, brackets, gears, hooks
6131	Low-viscosity unmodified polybutylene terephthalate for injection molding	General mechanical goods that contain thin sections
S600	General purpose injection molding grade of polybutylene terephthalate	
S610	General purpose injection molding grade of polybutylene terephthalate available in color	Housings and covers, key caps, lamp sockets, decorative trims
ST820	Super tough grade of polybutylene terephthalate toughened to withstand impact and mechanical abuse	Wheels, bumpers, tool handles, housings, snap fit applications, automotive fasteners
SK602	15% glass-reinforced polybutylene terephthalate	Housings and covers, gear boxes, frames, bases, and mechanical components such as gears and sprockets
SK605	30% glass-reinforced polybutylene terephthalate	Mechanical components requiring strength and rigidity such as door handles and support brackets
T805	30% glass-reinforced polybutylene terephthalate modified for increased toughness	Mechanical and electrical components subject to impact and mechanical abuse
LW9020	20% glass-reinforced polybutylene terephthalate alloy with improved surface and dimensional stability	Exterior body parts, housings and enclosures where good appearance and/or flatness is required
LW9030	30% glass-reinforced polybutylene terephthalate alloy with improved surface and dimensional stability	Structural frames, housings and covers, exterior body parts, bases where good appearance and/or flatness is required

(continued)

Table 1
Compositions (continued)

Flame Retardant Grades		
Grade	Characteristics	Candidate Uses
S660FR	Flame-retarded polybutylene terephthalate recognized by UL as 94 V-0 at 0.8 mm (0.031 in)	Connectors, capacitors, bobbins, switches, cable enclosures
T850FR	Flame-retarded polybutylene terephthalate modified for increased toughness; recognized by UL as 94 V-0 at 1.6 mm (0.062 in)	Electrical components subject to mechanical abuse
HTI681FR	Flame-retarded, 10% mineral filled polybutylene terephthalate with good resistance to tracking and good dimensional stability; UL 94 V-0 at 0.8 mm (0.031 in)	Electrical components requiring high track resistance
SK642FR	Flame-retarded, 15% glass-reinforced polybutylene terephthalate; UL 94 V-0 at 0.8 mm (0.031 in)	Electrical components, frames and housings, lamp components
SK652FR	Flame-retarded, 15% glass-reinforced polybutylene terephthalate with good flow and impact properties; UL 94 V-0 at 0.8 mm (0.031 in)	Electrical components, connectors, bobbins, frames and housings
SK645FR	Flame-retarded, 30% glass-reinforced polybutylene terephthalate; recognized by UL as 94 V-0 at 0.8 mm (0.031 in)	Electrical components, structural frames and housings
SK655FR	Flame-retarded, 30% glass-reinforced polybutylene terephthalate with good flow and impact properties; UL 94 V-0 at 0.8 mm (0.031 in)	Connectors and other electrical components, structural frames, housings and covers
T841FR	Flame-retarded, 10% glass-reinforced polybutylene terephthalate with improved toughness; UL 94 V-0 at 1.6 mm (0.062 in)	Connectors and other electrical components subject to mechanical abuse
T845FR	Flame-retarded, 30% glass-reinforced polybutylene terephthalate with improved toughness; UL 94 V-0 at 1.6 mm (0.062 in)	Connectors and other electrical components subject to mechanical abuse
XMB7919	Flame-retarded, 30% glass and mineral reinforced polybutylene terephthalate with excellent dimensional stability; recognized by UL as 94 V-0 at 0.8 mm (0.031 in)	Housings and covers requiring very good flatness and dimensional tolerances; connectors, terminal boxes, bases, structural members

Table 2. Typical Properties of Crastin PBT

Property	ASTM Method	Units	Unreinforced Resins					
			Neat Polymer			General Purpose		Tough
			Crastin PBT 6129	Crastin PBT 6130	Crastin PBT 6131	Crastin PBT S600	Crastin PBT S610	Crastin PBT ST820
Tensile Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D638	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		93.8 13.6 55.2 8.0 20 2.9 13.1 1.8				68.3 9.9 37.9 5.5 28.3 4.1 21.4 3.1
Elongation at Break –40°C (–40°F) 23°C (73°F) 90°C (194°F) 150°C (300°F)	D638	% % % %	300	11 >300 >300 >300	200	>50	175	14 145 170 190
Tensile Modulus 23°C 73°F	D638	MPa kpsi				2700 390		
Compressive Strength 23°C 73°F	D695	MPa kpsi	75.8 11.0	75.8 11.0	75.8 11.0		75.8 11.0	43.1 6.3
Flexural Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		120.7 17.5 80 11.6 13.8 2.0 9 1.3				75.8 11 53.1 7.7 9.7 1.4 5.5 0.8
Flexural Modulus –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		3000 435 2400 350 330 48 234 34				2000 295 1700 244 230 34 140 20
Heat Deflection Temperature 1.8 MPa 264 psi 0.46 MPa 66 psi	D648	°C °F °C °F	52 125 150 302	52 125 150 302	52 125 150 302	60 140 160 320	52 125 150 302	48 118 120 248

(continued)

Table 2. Typical Properties of Crastin PBT (continued)

Property	ASTM Method	Units	Reinforced Resins				
			General Purpose		Tough	Low Warp	
			Crastin PBT SK602	Crastin PBT SK605	Crastin PBT T805	Crastin PBT LW9020	Crastin PBT LW9030
Tensile Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D638	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		208 30.1 140 20.3 77 11.1 54 7.9	200 29.1 100 14.5 66 9.6 46 6.7		174 25.2 135 19.6 66 9.6 34 3.5
Elongation at Break –40°C (–40°F) 23°C (73°F) 90°C (194°F) 150°C (300°F)	D638	% % % %		2.7 2.6 3.8 4.2	3.2 4.2 6.1 6.5	2.8	2 2.5 3.7 4.9
Tensile Modulus 23°C 73°F	D638	MPa kpsi	6000 870	10000 1450	7000 1015	7000 1015	9500 1375
Compressive Strength 23°C 73°F	D695	MPa kpsi		203 29.4	159 23.1	143 20.7	164 23.8
Flexural Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		270 39.0 200 29.0 110 16.8 75.8 11.0			248 35.9 190 27.6 96 13.9 28 4.1
Flexural Modulus –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi		9310 1350 9000 1300 3862 560 2758 400			8931 1295 8275 1200 4828 700 1380 200
Heat Deflection Temperature 1.8 MPa 264 psi 0.46 MPa 66 psi	D648	°C °F °C °F	195 383 220 428	205 401 220 428	190 374 205 401	150 302 210 410	182 360 215 419

(continued)

Table 2. Typical Properties of Crastin PBT (continued)

Property	ASTM Method	Units	Unreinforced Resins					
			Neat Polymer			General Purpose		Tough
			Crastin PBT 6129	Crastin PBT 6130	Crastin PBT 6131	Crastin PBT S600	Crastin PBT S610	Crastin PBT ST820
Izod Impact Unnotched –40°C –40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in	NB NB NB NB	NB NB NB NB	 514 9.6	NB NB NB NB	 NB NB	NB NB NB NB
Izod Impact Notched –40°C –40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in	26.8 0.5 48.2 0.9	26.8 0.5 48.2 0.9	 34.8 0.7	37.5 0.7 65 1.2	 43 0.8	120 2.2 NB NB
Melting Point	D2117	°C °F	225 437	225 437	225 437	225 437	225 437	225 437
CLTE Flow Direction –40° to 23°C –40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F Cross Flow –40° to 23°C –40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F	E831	10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F 10 ^{–4} mm/mm/°C 10 ^{–4} in/in/°F	0.8 0.4 1.1 0.6 1.4 0.8 0.9 0.5 1.4 0.8 1.6 0.9	0.8 0.4 1.1 0.6 1.4 0.8 0.9 0.5 1.4 0.8 1.6 0.9	0.8 0.4 1.1 0.6 1.4 0.8 0.9 0.5 1.4 0.8 1.6 0.9	 1.3 0.7 1.3 0.7 0.25	0.8 0.4 1.1 0.6 1.4 0.8 0.9 0.5 1.4 0.8 1.6 0.9	
Thermal Conductivity	C177	W/m·K				0.25		
Specific Gravity	D792		1.31	1.31	1.31	1.31	1.31	1.23
Water Absorption 24 h at 23°C (73°F)	D570	%	0.07	0.07	0.07		0.07	
Rockwell Hardness	D785	R	120	120	120		120	98
Coefficient of Friction Against Self Against Steel	D1894		0.35 0.19	0.35 0.19	0.35 0.19		0.35 0.19	
Mold Shrinkage 3.18 mm (1/8 in) thick Flow Transverse		% %	1.6 1.6	1.6 1.6	1.6 1.6	1.6 1.6	1.6 1.6	2.2 3.0

(continued)

Table 2. Typical Properties of Crastin PBT (continued)

Property	ASTM Method	Units	Reinforced Resins				
			General Purpose		Tough	Low Warp	
			Crastin PBT SK602	Crastin PBT SK605	Crastin PBT T805	Crastin PBT LW9020	Crastin PBT LW9030
Izod Impact Unnotched -40°C -40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in	640 12.1 705 13.2	1124 21.0 1000 18.7	1253 23.4 1242 23.2	680 12.7 798 14.9	857 16.0 934 17.5
Izod Impact Notched -40°C -40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in	59 1.1 70 1.3	102 1.9 110 2.1	112 2.1 120 2.2	69.6 1.3 80 1.5	86 1.6 96 1.8
Melting Point	D2117	°C °F	225 437	225 437	213 415	225 437	225 437
CLTE Flow Direction -40° to 23°C -40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F Cross Flow -40° to 23°C -40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F	E831	10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F	0.5 0.3 1.1 0.06	0.3 0.2 0.9 0.05	0.3 0.2 1.2 0.7	0.3 0.2 1 0.5	0.25 0.1 1 0.5
Thermal Conductivity	C177	W/m·K	0.26	0.28	0.28	0.25	0.26
Specific Gravity	D792		1.41	1.53	1.50	1.35	1.43
Water Absorption 24 h at 23°C (73°F)	D570	%					
Rockwell Hardness	D785	R					
Coefficient of Friction Against Self Against Steel	D1894						
Mold Shrinkage 3.18 mm (1/8 in) thick Flow Transverse		% %	0.6 1.2	0.3 1.0	0.25 0.7	0.3 0.6	0.2 0.5

(continued)

Table 2. Typical Properties of Crastin PBT (continued)

Property	ASTM Method	Units	Unreinforced Resins					
			Neat Polymer			General Purpose		Tough
			Crastin PBT 6129	Crastin PBT 6130	Crastin PBT 6131	Crastin PBT S600	Crastin PBT S610	Crastin PBT ST820
Volume Resistivity	D257	ohm·cm	1.00E+14	1.00E+14	1.00E+14	1.00E+16	8.00E+15	1.00E+16
Surface Resistivity	D257	ohm·sq	3.00E+12	3.00E+12	3.00E+12	1.00E+14	5.00E+15	1.00E+14
Dielectric Strength short time 1.59 mm (1/16 in) 23°C 73°F 3.18 mm (1/8 in) 23°C 73°F	D149 500 V/sec in oil	kV/mm V/mil kV/mm V/mil	22.2 564 14.7 374	22.2 564 14.7 374	22.2 564 14.7 374	22.2 564 15 382	22.2 564 14.7 374	23.6 600 15.7 400
Dielectric Constant 1 kHz 1 MHz	D150		3 3	3 3	3 3	3.8 3.2	3 3	3.8 3.7
Dissipation Factor 1 kHz 1 MHz	D150		0.002 0.02	0.002 0.02	0.002 0.02	0.002 0.02	0.002 0.02	0.003 0.021
Arc Resistance	D495	sec				160		
UL Flammability	UL-94		HB	HB	HB	HB	HB	HB
Oxygen Index	D2863	%	22	22	22	22	23	22
Hot Wire Ignition	UL-746A	sec						
Temp. Index (1.5 mm) Electrical	UL-746B	°C (°F)	75 (167)	75 (167)	75 (167)	130 (266)	130 (266)	
Mechanical w/Impact	UL-746B	°C (°F)	75 (167)	75 (167)	75 (167)	115 (239)	100 (212)	
Mechanical w/o Impact	UL-746B	°C (°F)	75 (167)	75 (167)	75 (167)	120 (248)	130 (266)	

Table 2. Typical Properties of Crastin PBT (continued)

Property	ASTM Method	Units	Reinforced Resins				
			General Purpose		Tough	Low Warp	
			Crastin PBT SK602	Crastin PBT SK605	Crastin PBT T805	Crastin PBT LW9020	Crastin PBT LW9030
Volume Resistivity	D257	ohm-cm	1.00E+16	1.00E+16	1.00E+16	1.00E+15	1.00E+15
Surface Resistivity	D257	ohm-sq	1.00E+14	1.00E+14	1.00E+14	1.00E+13	1.00E+13
Dielectric Strength short time 1.59 mm (1/16 in) 23°C 73°F 3.18 mm (1/8 in) 23°C 73°F	D149 500 V/sec in oil	 kV/mm V/mil kV/mm V/mil	 17 433	 23.6 600 17 433	 17 433	 20 509	 21 534
Dielectric Constant 1 kHz 1 MHz	D150		 3.5	 4 3.8	 4.4 4	 4 3.4	 4 3.6
Dissipation Factor 1 kHz 1 MHz	D150		 0.02	 0.002 0.018	 0.008 0.022	 0.005 0.018	 0.005 0.017
Arc Resistance	D495	sec	103	124	116	106	121
UL Flammability	UL-94		HB	HB	HB	HB	HB
Oxygen Index	D2863	%	19	19	19	19	19
Hot Wire Ignition	UL-746A	sec					
Temp. Index (1.5 mm) Electrical	UL-746B	°C (°F)	130 (266)	130 (266)	130 (266)	130 (266)	130 (266)
Mechanical w/Impact	UL-746B	°C (°F)	115 (239)	130 (266)	130 (266)	130 (266)	130 (266)
Mechanical w/o Impact	UL-746B	°C (°F)	120 (248)	130 (266)	140 (284)	130 (266)	130 (266)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins

Property	ASTM Method	Units	Unreinforced Resins		
				Tough	Tracking
			Crastin PBT S660FR	Crastin PBT T850FR	Crastin PBT HTI681FR
Tensile Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D638	MPa kpsi MPa kpsi MPa kpsi MPa kpsi	 52 7.5 31 4.5	 45 6.5	77 11.2 54 7.8 24 3.5 17 2.5
Elongation at Break –40°C (–40°F) 23°C (73°F) 90°C (194°F) 150°C (300°F)	D638	% % % %	 10 300	20	2.5 2.2 18 21
Tensile Modulus 23°C 73°F	D638	MPa kpsi	2965 430	2400 348	3600 522
Compressive Strength 23°C 73°F	D695	MPa kpsi	73 10.6		118 17.1
Flexural Strength –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi	 80 11.7 19 2.7	68 9.9	122 17.7 95 13.8 29 4.2 17 2.4
Flexural Modulus –40°C –40°F 23°C 73°F 90°C 194°F 150°C 300°F	D790	MPa kpsi MPa kpsi MPa kpsi MPa kpsi	 2700 390 400 62	2138 310	4235 614 3600 525 730 106 455 66
Heat Deflection Temperature 1.8 MPa 264 psi 0.46 MPa 66 psi	D648	°C °F °C °F	53 127 180 355	60 140 167 333	75 167 194 381

(continued)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins (continued)

Property	ASTM Method	Units	Reinforced Resins						
			General Purpose				Tough		
			Crastin PBT SK642FR	Crastin PBT SK652FR	Crastin PBT SK645FR	Crastin PBT SK655FR	Crastin PBT T841FR	Crastin PBT T845FR	Crastin PBT XMB7919
Tensile Strength	D638								
–40°C		MPa		134		188	110	190	121
–40°F		kpsi		19.5		27.3	16	27.6	17.6
23°C		MPa	95	98	140	141	70	110	82
73°F		kpsi	13.8	14.2	20.3	20.5	10.1	16.0	11.9
90°C		MPa		57		69	39	63	40
194°F		kpsi		8.3		10	5.6	9.2	5.8
150°C		MPa		37		35	28	45	30
300°F		kpsi		5.3		5	4	6.5	4.3
Elongation at Break	D638								
–40°C (–40°F)		%		3.1		2.6	3.1	2.4	1.6
23°C (73°F)		%	3.0	2.4	2.5	2.4	4.2	3.0	1.7
90°C (194°F)		%		3.0		3.0	6	4.6	4.3
150°C (300°F)		%		9.7		3.9	9	5.2	4.8
Tensile Modulus	D638								
23°C		MPa	6500	6500	12000	12000	3900	8500	10300
73°F		kpsi	943	943	1740	1740	566	1230	1500
Compressive Strength	D695								
23°C		MPa		137		219	107	165	132
73°F		kpsi		19.9		31.8	15.5	24.0	19.2
Flexural Strength	D790								
–40°C		MPa		197	251	281			
–40°F		kpsi		28.5	36.4	40.8			
23°C		MPa	155	145	215	217	100	170	136
73°F		kpsi	22.5	21	31.2	31.5	14.5	24.7	19.7
90°C		MPa		90	114	117			
194°F		kpsi		13	16.5	17			
150°C		MPa		68	76	76			
300°F		kpsi		9.9	11.0	11			
Flexural Modulus	D790								
–40°C		MPa		6900	10170	12000	4828	10172	11034
–40°F		kpsi		1000	1475	1670	700	1475	1600
23°C		MPa		6200	9600	9600	3100	6900	10000
73°F		kpsi		900	1400	1400	450	1000	1460
90°C		MPa		3200	5000	5200		3965	3103
194°F		kpsi		470	725	750		575	450
150°C		MPa		2500	3450	3450	1076	2414	2207
300°F		kpsi		360	500	500	156	350	320
Heat Deflection Temperature	D648								
1.8 MPa		°C	203	210	210	215	183	192	202
264 psi		°F	397	410	410	419	361	378	396
0.46 MPa		°C	218	222	220	226	200	205	217
66 psi		°F	424	432	428	439	392	401	423

(continued)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins (continued)

Property	ASTM Method	Units	Unreinforced Resins		
				Tough	Tracking
			Crastin PBT S660FR	Crastin PBT T850FR	Crastin PBT HTI681FR
Izod Impact Unnotched -40°C -40°F 23°C 73°F	D256	J/m ft-lb/in J/m ft-lb/in	1500 28	2407 45.1 NB NB	295 5.5 407 7.6
Izod Impact Notched -40°C -40°F 23°C 73°F	D256	J/m ft-lb/in J/m ft-lb/in	42 0.8	59 1.1 144 2.7	26.8 0.5 30 0.6
Melting Point	D2117	°C °F	225 437	225 437	225 437
CLTE Flow Direction -40° to 23°C -40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F Cross Flow -40° to 23°C -40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F	E831	10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F 10 ⁻⁴ mm/mm/°C 10 ⁻⁴ in/in/°F	0.8 0.4 1.2 0.7 1.2 0.7 0.8 0.5 1.4 0.8 1.5 0.8	1.4 0.8 0.8	1.1 0.6 0.6
Thermal Conductivity	C177	W/m·K		—	0.27
Specific Gravity	D792		1.45	1.4	1.51
Water Absorption 24 h at 23°C (73°F)	D570	%	0.06		
Rockwell Hardness	D785	R	116		
Coefficient of Friction Against Self Against Steel	D1894				
Mold Shrinkage 3.18 mm (1/8 in) thick Flow Transverse		% %	1.8 2.2	1.9 1.9	1.8 1.7

(continued)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins (continued)

Property	ASTM Method	Units	Reinforced Resins						
			General Purpose				Tough		
			Crastin PBT SK642FR	Crastin PBT SK652FR	Crastin PBT SK645FR	Crastin PBT SK655FR	Crastin PBT T841FR	Crastin PBT T845FR	Crastin PBT XMB7919
Izod Impact Unnotched –40°C –40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in		439 8.2 562 10.5	792 14.8 712 13.3	857 16 964 18	621 11.6 605 11.3	958 17.9 958 17.9	332 6.2 354 6.6
Izod Impact Notched –40°C –40°F 23°C 73°F	D256	J/m ft·lb/in J/m ft·lb/in		70 1.3 80 1.5	86 1.6 90 1.7	80 1.5 118 2.2	43 0.8 70 1.3	86 1.8 110 2.1	37 0.7 43 0.8
Melting Point	D2117	°C °F	225 437	225 437	225 437	225 437	210 410	210 410	225 437
CLTE Flow Direction –40° to 23°C –40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F Cross Flow –40° to 23°C –40° to 73°F 23° to 55°C 73° to 131°F 55° to 160°C 131° to 320°F	E831			0.26 0.14 0.22 0.12 0.2 0.11 0.46 0.26 0.6 0.38 0.7 0.39	0.3 0.2 0.2 0.7 0.9 0.5	0.25 0.14 0.12 0.7 0.17 0.1 0.69 0.38 1.18 0.66 1.11 0.62	0.7 0.4 0.3 0.2 1.4 0.8 1.2 0.7		
Thermal Conductivity	C177	W/m·K	0.27		0.29		0.26	0.29	
Specific Gravity	D792		1.55	1.61	1.69	1.72	1.53	1.69	1.67
Water Absorption 24 h at 23°C (73°F)	D570	%		0.05		0.04			
Rockwell Hardness	D785	R		122		117			
Coefficient of Friction Against Self Against Steel	D1894			0.3 0.2		0.3 0.2			
Mold Shrinkage 3.18 mm (1/8 in) thick Flow Transverse		% %	0.6 1.2	0.6 1.1	0.35 1	0.3 0.8	0.7 1.1	0.25 0.9	0.5 0.65

(continued)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins (continued)

Property	ASTM Method	Units	Unreinforced Resins		
				Tough	Tracking
			Crastin PBT S660FR	Crastin PBT T850FR	Crastin PBT HTI681FR
Volume Resistivity	D257	ohm-cm	1.00E+16	1.00E+16	1.00E+16
Surface Resistivity	D257	ohm-sq	5.00E+14	1.00E+14	1.00E+14
Dielectric Strength short time 1.59 mm (1/16 in) 23°C 73°F 3.18 mm (1/8 in) 23°C 73°F	D149 500 V/sec in oil	kV/mm V/mil kV/mm V/mil	22.0 560 16.0 400	23.6 600 17.0 433	23.6 600 15.0 382
Dielectric Constant 1 kHz 1 MHz	D150		3.1 3.0	3.3 3.2	3.3 3.0
Dissipation Factor 1 kHz 1 MHz	D150		0.002 0.02	0.002 0.018	0.003 0.016
Arc Resistance	D495	sec		65	84
UL Flammability	UL-94		V-0	V-0	V-0
Oxygen Index	D2863	%	30	29	32
Hot Wire Ignition	UL-746B	sec			
Temp. Index (1.5 mm) Electrical	UL-746B	°C (°F)	75 (167)	75 (167)	140 (284)
Mechanical w/Impact	UL-746B	°C (°F)	75 (167)	75 (167)	130 (266)
Mechanical w/o Impact	UL-746B	°C (°F)	75 (167)	75 (167)	140 (284)

Table 3. Typical Properties of Crastin PBT Flame Retardant Resins (continued)

Property	ASTM Method	Units	Reinforced Resins						
			General Purpose				Tough		
			Crastin PBT SK642FR	Crastin PBT SK652FR	Crastin PBT SK645FR	Crastin PBT SK655FR	Crastin PBT T841FR	Crastin PBT T845FR	Crastin PBT XMB7919
Volume Resistivity	D257	ohm-cm	1.00E+16	5.00E+15	1.00E+16	5.00E+15	1.00E+16	1.00E+16	1.00E+16
Surface Resistivity	D257	ohm-sq	1.00E+14	1.00E+15	1.00E+14	5.00E+15	1.00E+14	1.00E+14	1.00E+14
Dielectric Strength short time 1.59 mm (1/16 in) 23°C 73°F 3.18 mm (1/8 in) 23°C 73°F	D149 500 V/sec in oil	kV/mm V/mil kV/mm V/mil		21.8 553	23.6 600	23.8 604	23.6 600	24.3 619	29.5 750
Dielectric Constant 1 kHz 1 MHz	D150		3.5	3.1 3.1	3.8	4.2 4.0	4.0 3.8	4.2 4.0	4.1 3.9
Dissipation Factor 1 kHz 1 MHz	D150		0.017	0.002 0.014	0.016	0.002 0.014	0.008 0.018	0.009 0.017	0.007 0.014
Arc Resistance	D495	sec	73		122		77	82	
UL Flammability	UL-94		V-0	V-0	V-0	V-0	V-0	V-0	V-0
Oxygen Index	D2863	%	31	36	31	35	28	30	32
Hot Wire Ignition	UL-746A	sec							
Temp. Index (1.5 mm) Electrical	UL-746B	°C (°F)	140 (284)	140 (284)	140 (284)	130 (266)	130 (266)	140 (284)	
Mechanical w/Impact	UL-746B	°C (°F)	130 (266)	130 (266)	130 (266)	130 (266)	130 (266)	140 (284)	
Mechanical w/o Impact	UL-746B	°C (°F)	140 (284)	130 (266)	140 (284)	130 (266)	130 (266)	140 (284)	

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