Kotex® Polycarbonate Resin

Properties	Standards	Test Conditions	Units	*Super High Flow* ・*Standard* ・*Mould Release* ・*UV Stability* ・*UV Stability + Mould Release*	*General Purpose* ・*Standard* ・*Mould Release* ・*UV Stability* ・*UV Stability + Mould Release*			*Flame Retardant (Non-brominated & Non-chlorinated)*				*Food Contact*				*Extrusion*	
				K-20T28 K-20MRA28 K-20UV28 K-20UVR28	K-20 K-20MRA K-20UV K-20UVR	K-30 K-30MRA K-30UV K-30UVR	K-40 K-40MRA K-40UV K-40UVR	K-30FR	K-30FRT12	KFN-30	KFN-30T12	KV-20FD	KV-30FD	KV-40FD	KV-75FD	K-75E	K-75EUV
Mechanical Properties																	
Izod Impact Strength	ASTM D256	V-Notched 1/8" 23℃	J/m kgf・cm/cm ft・lbf/in	540 55 10	740 75 14	780 80 15	830 85 16	780 80 15	780 80 16	780 80 17	830 85 16	740 75 14	780 80 15	830 85 16	880 90 17	880 90 17	880 90 17
Tensile Strength at break	ASTM D638	---	MPa kgf/cm^2 lbf/in^2	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100	63 640 9100
Tensile Elongation at break	ASTM D638	---	%	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Flexural Strength	ASTM D790	---	MPa kgf/cm^2 lbf/in^2	85 870 12400	85 870 12400	85 870 12400	85 870 12400	84 860 12200	84 860 12200	85 870 12400	85 870 12400	85 870 12400	85 870 12400	85 870 12400	88 900 12800	88 900 12800	88 900 12800
Flexural Modulus	ASTM D790	---	MPa kgf/cm^2 lbf/in^2	2160 22000 313000	2160 22000 313000	2160 22000 313000	2160 22000 313000	2160 22000 313000	2160 22000 313000	2160 22000 313000	2160 22000 311000	2160 22000 313000	2160 22000 313000	2160 22000 313000	2260 23000 327000	2260 23000 327000	2260 23000 327000
Rockwell Hardness	R scale	---	---	120	120	120	120	120	120	120	120	120	120	120	120	120	120
Thermal Properties																	
Flammability	UL-94	---	---	V-2 (0.4mm)	V-2 (0.4mm)	V-2 (1.6mm)	V-2 (1.6mm)	V-0 (3.0mm)	V-0 (3.0mm)	V-0 (1.5mm)	V-0 (1.5mm)	---	---	---	---	V-2 (1.6mm)	V-2 (1.6mm)
Heat Deflection Temperature	ASTM D648	---	℃	129	131	132	133	132	133	132	133	131	132	134	135	135	135
			℉	264	267	269	271	269	271	269	271	267	269	273	275	275	275
Melt Flow Rate	ASTM D1238	300℃ 1.2 kgf	g/10 min.	30	20	15	12	15	12	15	12	20	15	10	4	4	5
Optical Properties																	
Light Transmittance	ASTM D1003	3.0mm	%	89	89	89	89	89	89	Opaque	Opaque	89	89	89	89	89	89
Light Refractive Index	ASTM D542	---	---	1.58	1.58	1.58	1.58	1.58	1.58	---	---	1.58	1.58	1.58	1.58	1.58	1.58
Parallel L. Trans.	JIS K7361	1mm / 2mm	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Diffusion L. Trans.	JIS K7361	1mm / 2mm	%	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Haze	ASTM D1003	3.0mm	%	< 1	< 1	< 1	< 1	< 1	< 1	---	---	< 1	< 1	< 1	< 1	< 1	< 1
Physical Properties																	
Specific Gravity	ASTM D792	---	---	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Water Absorption	ASTM D570	24 hrs @23℃ Water immersion	%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mould Shrinkage	ASTM D995	Parallel	%	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.6 ~ 0.8	0.6 ~ 0.8	0.6 ~ 0.8
		Across															
Electrical Properties																	
Dielectric Breakdown Strength	ASTM D149	---	kV/mm	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dielectric Constant	ASTM D150	10^6 Hz	---	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
Dielectric Dissipation Factor	ASTM D150	10^6 Hz	---	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009	0.009
Arc Resistance	ASTM D495	---	sec.	110	110	110	110	110	110	110	110	110	110	110	110	110	110
Volume Resistivity	ASTM D257	---	Ω・cm	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}

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Properties	Standards	Test Conditions	Units	*Glass Fibre Reinforced*				*Glass Fibre Reinforced Flame Retardant (Non-brominated & Non-chlorinated)*				*Wear Resistance + Glass Fibre Reinforced*		*Wear Resistance*	*Electrically Conductive*	*Electrically Conductive + Glass Fibre Reinforced*
				KG-10MRA	KG-15MRA	KG-20MRA	KG-30MRA	KGN-10MRA	KGN-15MRA	KGN-20MRA	KGN-30MRA	KG-20F10	KG-30F15	K-30F5	K-30CF10	KG-15CF15
Mechanical Properties																
Izod Impact Strength	ASTM D256	V-Notched 1/8" 23℃	J/m kgf·cm/cm ft·lbf/in	69 7 1.3	78 8 1.5	90 9 1.6	100 10 1.8	69 7 1.3	78 8 1.5	90 9 1.6	100 10 1.8	78 8 1.5	118 12 2.2	150 15 2.8	80 8 1.5	83 8.5 1.6
Tensile Strength at break	ASTM D638	---	MPa kgf/cm^2 lbf/in^2	74 750 11000	98 1000 14200	108 1100 15600	127 1300 18500	74 750 11000	98 1000 14200	108 1100 15600	127 1300 18500	118 1200 17100	120 1220 17400	62 630 9000	118 1200 17000	140 420 23000
Tensile Elongation at break	ASTM D638	---	%	5	4.5	4	3	5	4.5	4	3	4	3	100	118	3
Flexural Strength	ASTM D790	---	MPa kgf/cm^2 lbf/in^2	118 1200 17100	132 1350 19200	152 1550 22000	162 1650 23400	118 1200 17100	132 1350 19200	152 1550 22000	162 1650 23400	132 1350 19200	127 1300 18400	84 860 12200	150 1530 21800	170 1750 24800
Flexural Modulus	ASTM D790	---	MPa kgf/cm^2 lbf/in^2	3530 36000 512000	4410 45000 639000	5690 58000 824000	7550 77000 1090000	3530 36000 512000	4410 45000 639000	5690 58000 824000	7550 77000 1090000	5390 55000 782000	4900 50000 708600	2100 21500 306000	5700 58200 828000	9100 92500 1310000
Rockwell Hardness	R scale	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Thermal Properties																
Flammability	UL-94	---	---	V-2 (1.5mm) V-0 (3.0mm)	V-2 (1.5mm) V-0 (3.0mm)	V-2 (1.5mm) V-0 (3.0mm)	V-2 (1.5mm) V-0 (3.0mm)	V-0 (1.7mm)	V-0 (1.7mm)	V-0 (1.7mm)	V-0 (1.7mm)	(Equiv. V-0) (1.7mm)	(Equiv. V-0) (1.7mm)	(Equiv. V-2) (1.6mm)	(Equiv. V-2) (1.6mm)	V-1 @ 1.5mm V-0 @ 3.0mm
Heat Deflection Temperature	ASTM D648	---	℃	140	143	145	146	140	143	145	146	145	145	132	147	146
			℉	284	289	293	294	284	289	293	294	293	293	269	296	295
Melt Flow Rate	ASTM D1238	300℃ 1.2 kgf	g/10 min.	---	---	---	---	---	---	---	---	---	---	---	---	---
Optical Properties																
Light Transmittance	ASTM D1003	3.0mm	%	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Translucent	Opaque	Opaque
Light Refractive Index	ASTM D542	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Parallel Light Transmittance	JIS K7361	1mm / 2mm	%													
Diffusion Light Transmittance	JIS K7361	1mm / 2mm	%													
Haze	ASTM D1003	3.0mm	%	---	---	---	---	---	---	---	---	---	---	---	---	---
Physical Properties																
Specific Gravity	ASTM D792	---	---	1.27	1.30	1.35	1.43	1.27	1.30	1.35	1.43	1.41	1.57	1.22	1.24	1.37
Water Absorption	ASTM D570	24 hrs @23℃ Water immersion	%	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mould Shrinkage	ASTM D995	Parallel	%	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.4	0.2 ~ 0.4	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.4	0.2 ~ 0.4	0.3 ~ 0.4	0.3 ~ 0.4	0.5 ~ 0.7	0.3 ~ 0.5	0.3 ~ 0.5
		Across		0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5	0.3 ~ 0.5		0.3 ~ 0.5	0.3 ~ 0.5
Electrical Properties																
Dielectric Breakdown Strength	ASTM D149	---	kV/mm	20	20	20	20	20	20	20	20	20	20	20	-	-
Dielectric Constant	ASTM D150	10^6 Hz	---	2.9	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.9	-	-
Dielectric Dissipation Factor	ASTM D150	10^6 Hz	---	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	0.008	-	-
Arc Resistance	ASTM D495	---	sec.	110	110	110	110	110	110	110	110	110	110	110	110	110
Volume Resistivity	ASTM D257	---	Ω · cm	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^{16}	10^5	10^4