

Kotex/Carbotex Polycarbonate

				Standard Mould release UV resistance Mold release+UV resistance											Recycled				Speciality compounding			
Properties	Standards	Test condition	Units	Flame retardant (Non-brominated & Non-chlorinated)			Flame retardant (brominated)		Glass fiber reinforced		Glass Fibre Reinforced Flame Retardant (Non-brominated & Non-chlorinated)		Conductive +glass fiber reinforced	Conductive	Eco mark (PIR)		EPEAT (PCR)	Luminescence	Surface modified			
				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	KFN-30	K-30FRB	KG-10MRA	KG-30MRA	KGN-10MRA	KGN-30MRA	KG-15CF15	K-30CF10	R-20	R-30		R-40	RE-20	KLS-1920 Blue Blue Green Yellow Green	KSH-20

Mechanical properties

Izod impact strength	ASTM D256	1/8" 23°C (V-Notched)	J/m kgf·cm/cm	740 75	780 80	830 85	780 80	780 80	101 10	69 7	100 10	69 7	100 10	98 10	80 8
Tensile strength at break	ASTM D638	—	MPa kgf/cm ²	63 640	63 640	63 640	63 640	63 640	72 730	74 750	127 1300	74 750	127 1300	140 1430	118 1200
Tensile elongation at break	ASTM D638	—	%	120	120	120	120	120	90	5	3	5	3	3	4
Flexural strength	ASTM D790	—	MPa kgf/cm ²	85 870	85 870	85 870	84 860	85 870	96 980	118 1200	162 1650	118 1200	162 1650	176 1800	150 1530
Flexural modulus	ASTM D790	—	MPa kgf/cm ²	2160 22000	2160 22000	2160 22000	2160 22000	2160 22000	2100 22000	3530 36000	7550 77000	3530 36000	7550 77000	9000 92000	5700 58200
Rockwell hardness	R scale	—	—	120	120	120	120	120	—	—	—	—	—	—	—

Mechanical properties

Izod impact strength	ASTM D256	1/8" 23°C (V-notched)	J/m kgf·cm/cm	107 11	39 4	29 3
Tensile strength at break	ASTM D638	—	MPa kgf/cm ²	48 490	66 680	59 600
Tensile elongation at break	ASTM D638	—	%	—	—	—
Flexural strength	ASTM D790	—	MPa kgf/cm ²	94 960	98 1000	98 1000
Flexural modulus	ASTM D790	—	MPa kgf/cm ²	2250 23000	2150 22000	2200 23000
Rockwell hardness	R scale	—	—	120	120	120

Thermal properties

Flammability	UL 94	—	—	V-2 (0.4mm)	V-2 (1.6mm)	V-2 (1.6mm)	V-0 (3.0mm)	V-0 (1.5mm)	V-0 equiv. (2.0mm)	V-0 (3.0mm)	V-0 (3.0mm)	V-0 (1.7mm)	V-0 (1.7mm)	V-0 (3.0mm)	V-2 equiv. (1.6mm)
Heat deflection temperature	ASTM D648	18.6kgf/cm ²	°C	126	127	128	127	127	133	140	146	140	146	146	140
Melt flow rate	ASTM D1238	300°C 1.2kgf	g/10min.	20	15	12	15	15	15	—	—	—	—	—	—

Thermal properties

Flammability	UL 94	—	—	V-2 equiv. (1.6mm)	—	—
Heat deflection temperature	ASTM D648	18.6kgf/cm ²	°C	125	115	110
Melt flow rate	ASTM D1238	300°C 1.2kgf	g/10min.	23	26	40

Optical properties

Light transmittance	ASTM D1003	3.0mm	%	89	89	89	89	Opaque	89	—	—	—	—	—	—
Light reflective index	ASTM D542	—	—	1.58	1.58	1.58	1.58	—	1.58	—	—	—	—	—	—
Haze	ASTM D1003	3.0mm	%	<1	<1	<1	<1	—	<1	—	—	—	—	—	—

Optical properties

Light transmittance	ASTM D1003	3.0mm	%	—	89.8	89.8
Light reflective index	ASTM D542	—	—	—	—	—
Haze	ASTM D1003	3.0mm	%	—	—	—

Physical properties

Specific gravity	ASTM D792	—	—	1.20	1.20	1.20	1.20	1.20	1.27	1.27	1.43	1.27	1.43	1.37	1.24
Water absorption	ASTM D570	24hrs@23°C (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
Mould shrinkage	ASTM D995	MD TD	%	0.5~0.7	0.5~0.7	0.5~0.7	0.5~0.7	0.5~0.7	0.5~0.7	0.3~0.5	0.2~0.4	0.3~0.5	0.2~0.4	0.3~0.5	0.3~0.5

Physical properties

Specific gravity	ASTM D792	—	—	1.28	1.19	1.19
Water absorption	ASTM D570	24hrs@23°C (water immersion)	%	0.2	0.2	0.2
Mould shrinkage	ASTM D995	MD TD	%	0.5~0.7	0.5~0.7	0.5~0.7

Electrical properties

Dialect breakdown strength	ASTM D149	—	kV/mm	20	20	20	20	20	20	20	20	20	20	—	—
Dialect constant	ASTM D150	10 ⁶ Hz	—	2.9	2.9	2.9	2.9	2.9	2.9	2.9	3.2	3.2	3.2	—	—
Dialect dissipation factor	ASTM D150	10 ⁶ Hz	—	0.009	0.009	0.009	0.009	0.009	0.009	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
Surface 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 ⁵	10 ⁵

Others

Phosphorescence brightness	JIS Z9107	D65	—	JA (Blue)	—	—
				JB (Blue Green)	—	—
				JC (Yellow Green)	—	—
Pencil hardness	JIS K 5600-5-4	750g	—	—	F	H

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