〔TECHNICAL DATA〕

CHARACTERISTICS OF PLASTIC MATERIALS ②

	JIS Testing method	A.S.T.M Testing method			Plastic resins										
			1	Plastic Materials	Polyacetal		Polybutyrene terephthalate		Polyethylene terephthalate		Polyphenylene sulfide		Liquid-crystal polymer		Fluororesin
			2	Grade	General										
			3	Filler	—	Glass fiber 25% or less	—	Glass fiber 30%	—	Glass fiber 30%	—	Glass fiber 30%	—	Glass fiber 40%	—
			4	Abbreviations	POM	POM-GF	PBT	PBT-GF	PET	PET-GF	PPS	PPS-GF	LCP	LCP-GF	FEP
Molding properties			5	Drying temperature (℃)	10	110	120	120	120	120	130～140	130～140	140～160	140～160	—
			6	Drying time (hr)	2	2	4	4	4	4	2	2	4	4	—
			7	Injection forming cylinder temperature (℃)	180～230	180～230	230～280	230～280	265～325	265～325	315～330	315～360	360～390	290～310	370～430
			8	Injection molding tool temperature (℃)	60～120	60～120	40～80	40～80	130～150	130～150	130～150	130～150	70～110	70～110	95～230
			9	Injection molding pressure (kgf/cm²)	703～1410	730～1410	562～1800	562～1800	700～1400	400～700	500～1000	500～1400	400～900	400～900	352～1410
			10	Compression molding temperature (℃)	—	—	—	—	—	—	—	—	—	—	315～399
			11	Compression molding pressure (kgf/cm²)	—	—	—	—	—	—	—	—	—	—	70.3～141
			12	Molding shrinkage rate (%)	2～2.5	0.4	1.5～2.0	0.2～0.8	2～2.5	0.2～0.9	0.6～0.8	Flow direction 0.3～0.4 Traverse direction 0.6～0.7	Flow direction 0.1～0.2 Traverse direction 0.6～0.9	Flow direction 0.1～0.15 Traverse direction 0.3～0.5	2～3
	K6911,K7112	D792	13	Specific gravity (density)	1.41～1.42	1.61	1.31～1.38	1.52	1.29～1.40	1.55～1.67	1.30	1.60～1.67	1.35	1.70	2.15～2.17
Mechanical characteristics	K6911,K7113	D638	14	Tensile strength (kgf/cm²)	580～800	1250～1300	550～640	1100～1340	465～700	1400～1550	630	1500～1550	1060～1335	900	180～210
			15	Tensile elongation (%)	25～75	3	50～300	2～4	30～300	2～7	1～2	0.9～4	1.3～4.5	1.8	250～330
	K7208		16	Compressive strength (kgf/cm²)	1270	1200	605～1020	1270～1650	—	—	—	—	—	—	155
	K7203		17	Flexure strength (kgf/cm²)	991	1970	844～1170	1830	—	—	—	—	—	—	—
	K7110,K7111		18	Izot impact strength (kgf/cm²)	5.4～13	10	4.4～5.4	7.0～8.7	1.4～3.8	8.7～11	＜2.7	6～8	13～21	8.7	Non-destructive
	K7202	D785	19	Rockwell hardness	M78～94	M79	M68～78	M90	M94～101	M90～100	R123	R123	R60～63	R79	D60～80
Thermal characteristics			20	Heat resistance temperature (continuous) (℃)	90	104	49.8～121	115～176	—	—	—	—	—	—	204
	K7206,K7207	D648	21	Deflection temperature under load (℃) a) Bending stress 18.6kgf/cm²	124	110	49.8～85	220	21～38	210～225	135	250～265	337～335	319	—
				b) Bending stress 4.6kgf/cm²	170	158	115～193	225	—	243					69.8
			22	Applications	Gears, cams Bearing Electromagnetic valve cases Connector	Motor fans Pump implant Gears Switch covers	Textile Containers Key top Electrical connectors	Automobile components	PET bottles Coil bobbins Consumer electronics components		Gears Connectors Automobile components Switches		Connectors Electronic parts		High temperature insulation parts Radio-frequency device components Insulating tapes Wire coverings

	JIS Testing method	A.S.T.M Testing method			Thermoplastic resins											
			1	Plastic Materials	Epoxy (Epoxide)		Melamine-formaldehyde	Polydiallyl phthalate	Phenol-formaldehyde			Silicone	Urea-formaldehyde	Unsaturated polyester		
			2	Grade		Low specific gravity				High impact proof	High strength				Premix	SMC
			3	Filler	Glass fiber	Glass balls	Cellulose	Glass	—	Wood flour, cotton	Glass fiber	Glass fiber	α Cellulose	Glass roving	Glass fiber	Glass fiber
			4	Abbreviations	EP	EP	MF	PDAP	PF	PF	PF	SI	UF	UP	UP	UP
Molding properties			5	Drying temperature (℃)	—	—	—	—	—	—	—	—	—	—	—	—
			6	Drying time (hr)	—	—	—	—	—	—	—	—	—	—	—	—
			7	Injection molding cylinder temperature (℃)	—	121～149	143～171	149～176	—	183～222	165～199	—	143～160	—	—	—
			8	Injection molding tool temperature (℃)	—	—	—	—	—	—	—	—	—	—	—	—
			9	Injection molding pressure (kgf/cm²)	—	703～1050	1050～1410	1410～4220	—	703～1410	352～1410	—	1050～1410	—	—	—
			10	Compression molding temperature (℃)	149～165	121～160	138～188	143～193	132～160	143～193	149～193	154～182	135～176	76.5～160	138～176	132～176
			11	Compression molding pressure (kgf/cm²)	21.1～35.2	7.03～141	105～562	352～281	123～263	123～334	70.3～422	70.3～350	141～562	17.6～141	35.2～141	21.1～94.4
			12	Molding shrinkage rate (%)	0.1～0.5	0.6～1.0	0.5～1.5	0.1～0.5	1.0～1.2	0.4～0.9	0.1～0.4	0～0.5	0.6～1.4	0.02～0.2	0.1～1.2	0.1～0.4
	K6911,K7112	D792	13	Specific gravity (density)	1.6～2.0	0.75～1.0	1.47～1.52	1.51～1.78	1.21～1.30	1.34～1.45	1.69～2.0	1.80～1.94	1.47～1.52	1.35～2.30	1.65～2.30	1.65～2.60
Mechanical characteristics	K6911,K7113	D638	14	Tensile strength (kgf/cm²)	703～1410	176～281	492～914	422～773	492～562	352～633	352～1270	281～457	387～914	1050～2110	211～703	562～1410
			15	Tensile elongation (%)	4	—	0.6～0.9	3～5	1.0～1.5	0.4～0.8	0.2	—	0.5～1.0	0.5～5.0	0.5～2.0	3
	K7208		16	Compressive strength (kgf/cm²)	1760～2810	703～1050	2810～3160	1760～2460	703～2190	155～253	1120～4920	103～1050	176～316	1050～2110	1410～2110	1050～2110
	K7203		17	Flexure strength (kgf/cm²)	703～4220	352～492	703～1120	773	844～1050	492～984	703～4220	703～984	703～1270	703～1270	492～1410	703～2530
	K7110,K7111		18	Izot impact strength (kgf/cm²)	10.9～163	0.82～1.36	1.31～1.91	2.18～81.6	1.09～1.96	1.31～3.27	1.63～100	1.63～43.5	1.36～2.18	10.9～109	8.16～87.1	38.1～120
	K7202	D785	19	Rockwell hardness	M100～110	—	M115～125	E80～87	M124～128	M100～115	E54～101	M80～90	M10～120	barcol 50～80	barcol 50～80	barcol 50～70
Thermal characteristics			20	Heat resistance temperature (continuous) (℃)	149～260	—	99	149～204	121	149～176	176～288	＞315	76.5	149～176	149～176	149～204
	K7206,K7207	D648	21	Deflection temperature under load (℃) a) Bending stress 18.6kgf/cm²	121～260	93～121	176～188	165～232	115～126	149～188	149～315	＞482	126～143	＞204	＞204	190～260
				b) Bending stress 4.6kgf/cm²	—	—	—	—	—	—	—	—	—	—	—	—
			22	Applications	Electronics/telecom device parts High-insulating cases, covers Semiconductor chips IC Capacitors Small-size transformers		Push buttons Handles Knobs Arc extinguishing panels Tableware	Micro switches Connector relay parts Measuring instrument components	Connector switches Tuners Breakers Coils Bobbins			Electric parts Lubricants	Laminated sheets Textile Colorant Knobs Tableware	TV tuners Fuses Breakers Motor covers Power distributor case covers Press rings Rectifier frames		