Grades and Physical Properties Chart - Electrical and Electronic Applications

				A R L E N (For electrical and electronic parts)									Remarks
				C series									
			Test method				flame-retardant	flame-retardant	flame-retardant	flame-retardant	flame-retardant	flame-retardant	flame-retardant
Physical Properties		Unit	ASTM	C215	C230	C240	C230N	C240N	CH230N	CH245NK	PA46	PPS	LCP
Glass fiber content		%	-	15	30	40	30	40	30	45	30	40	30
Specific gravity		-	D792	1.30	1.42	1.53	1.72	1.75	1.63	1.77	1.68	1.67	1.62
Mechanical Properties													
Tensile strength	dry	MPa	D638	110	170	210	170	180	160	160	160	170	140
	(moist)*1			(90)	(140)	(180)	(140)	(150)	(140)	(140)	(12.0)	(-)	(-)
Tensile elongation	dry	%	D638*2	3	3	3	3	3	4	3	4	2	3
	(moist)*1			(3)	(3)	(3)	(3)	(3)	(3)	(3)	(4)	(-)	(-)
Flexural strength	dry	MPa	D790	180	260	300	260	280	240	250	250	250	220
	(moist)*1			(150)	(220)	(260)	(220)	(240)	(200)	(210)	(190)	(-)	(-)
Flexural modulus	dry	MPa	D790	6,000	10,000	13,000	12,000	13,000	11,000	14,000	10,000	13,000	13,000
	(moist)*1			(4,000)	(7,000)	(9,000)	(8,500)	(9,000)	(8,000)	(10,000)	(7,500)	(-)	(-)
Izod Impact strength (notched)	dry	J/m	D256	50	80	85	70	75	80	90	80	80	110
	(moist)*1			(55)	(90)	(90)	(80)	(80)	(90)	(100)	(100)	(-)	(-)
Rockwell hardness		M scale	D 785	105	110	110	110	110	95	95	-	100	-
Thermal Properties													
Melting point		℃	-	310	310	310	310	310	310	310	295	280	-
Glass transition point		℃	-	85	85	85	85	85	85	85	60	90	-
Deflection temp. under load (1.82MPa)		℃	D648	295	300	300	295	295	290	290	285	265	280
Coefficient of linear thermal expansion	Flow direction	X10-5/℃	D696	3.4	2.4	2.0	2.4	2.0	3.0	2.5	-	2.0	-
	Vertical direction			5.5	5.0	4.5	5.0	4.5	6.0	5.5	-	4.0	-
Electrical Properties													
Volume resistivity	(dry)	Ω・cm	D257	10^{16}	10^{16}	10^{16}	10^{15}	10^{15}	10^{15}	10^{15}	10^{15}	10^{16}	10^{16}
Dielectric constant (10^6 Hz)	(dry)	-	D150	4.2	4.5	4.5	3.9	4.0	4.0	4.3	3.8	3.8	4.0
Dielectric dissipation factor (10^6 Hz)	(dry)	-	D150	0.020	0.018	0.018	0.012	0.011	0.013	0.011	-	0.0014	-
Dielectric breakdown voltage	(dry)	kV/mm	D149	25	28	30	20	22	25	22	-	17	-
Other Properties													
Mold shrinkage (2mmt)	Flow direction	%	D955	0.6	0.5	0.4	0.4	0.3	0.4	0.3	-	0.2	-
	Vertical direction			0.9	0.8	0.8	0.8	0.7	0.8	0.7	-	0.4	-
Water absorption (24 hr in water) (2mmt)	23℃	%	D570	0.4	0.3	0.2	0.3	0.2	0.3	0.2	0.8	0.02	0.02
	100℃	%		3.8	3.0	2.8	3.0	2.8	3.0	2.8	4.7	0.3	0.06
Flammability		-	UL94	H B	H B	H B	V-0	V-0	V-0	V-0	V-0	V-0	V-0

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Notes:

The above figures are just representative values but not specification values.
*1 Moist: In a saturated state in the atmosphere at 23℃ and a relative humidity of 65%
*2 Elongation was measured between the chucks.

Unit conversion:
Tensile strength, flexural strength, flexural modulus.
1 Mpa = 10.2 kg/cm²

Izod impact strength.
1 J/m=0.102 kg • cm/cm