

Nylon Resin 																			
Property	Test Condition	Test Method ISO	Units	Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced		Nylon6/Reinforced	
				Standard, GF15%		High flow, GF15%		High flow, GF20%		Standard, GF30%		Heat stability, GF30%		Standard, GF45%		Heat stability, GF45%		Low warpage, Mineral filler reinforced	
				CM1011G-15		CM1001G-15		CM1001G-20		CM1011G-30		CM1016G-30		CM1011G-45		CM1012G-45N		CM1001R	
				>PA6-GF15<		>PA6-GF15<		>PA6-GF20<		>PA6-GF30<		>PA6-GF30<		>PA6-GF45<		>PA6-GF45<		>PA6-MD40<	
				Dry	3.0%water	Dry	3.0%water	Dry	3.0%water	Dry	2.5%water	Dry	2.5%water	Dry	1.9%water	Dry	1.9%water	Dry	2.1%water
Physical property																			
Water Absorption	24hrs. in 23°C water	ISO62	%	1.3	-	1.3	-	1.3	-	1.1	-	1.1	-	0.9	-	0.9	-	0.9	-
Water Absorption	23°C in water	ISO62	%	8.3	-	8.3	-	7.8	-	6.4	-	6.4	-	5.3	-	5.3	-	5.8	-
Density	23°C	ISO1183	kg/m ³	1250	-	1250	-	1290	-	1360	-	1360	-	1500	-	1500	-	1510	-
Mechanical property																			
Tensile strength	-40°C	ISO527-1,2	MPa	150	120	135	115	-	-	250	225	250	225	290	250	300	260	130	-
Tensile strength	23°C	ISO527-1,2	MPa	130	65	110	55	120	-	185	105	185	105	205	130	220	140	95	55
Tensile strength	80°C	ISO527-1,2	MPa	55	30	45	25	-	-	100	70	100	70	120	85	115	90	40	-
Elongation at Break	-40°C	ISO527-1,2	%	2	5	2	3	2.5	3	3	3	3	3	3	3	3.5	3	2	-
Elongation at Break	23°C	ISO527-1,2	%	2.5	6	2	4.5	3	4.5	3	4	3	4	3	3	3.5	3.5	2.5	2.5
Elongation at Break	80°C	ISO527-1,2	%	6	7.5	5.5	6	5	5.5	4	4.5	4	4.5	5	5	5	5	7	-
Flexural Strength	-40°C	ISO178	MPa	245	-	205	-	275	-	325	315	325	315	385	325	385	325	160	-
Flexural Strength	23°C	ISO178	MPa	200	100	170	85	205	-	280	145	280	145	340	210	360	230	145	70
Flexural Strength	80°C	ISO178	MPa	100	50	80	45	115	-	155	105	155	105	185	125	190	130	60	-
Flexural Modulus	-40°C	ISO178	GPa	7.3	5.9	7.3	6	8.7	7.3	11.8	9.8	11.8	9.8	16.1	14.3	16.1	14.3	6.9	-
Flexural Modulus	23°C	ISO178	GPa	5.8	2.7	5.7	2.7	6.8	3.5	9.5	5.1	9.5	5.1	13.8	8.1	13.8	8.1	5.8	2.3
Flexural Modulus	80°C	ISO178	GPa	2.3	1.7	2.3	1.7	3.2	2.6	4.7	3.5	4.7	3.5	7.1	5	7.1	5	1.8	-
Compressive Strength	-40°C	ISO604	MPa	220	140	205	130	240	-	250	210	250	210	260	220	280	230	-	-
Compressive Strength	23°C	ISO604	MPa	150	75	135	65	155	80	180	120	180	120	190	120	220	140	-	-
Compressive Strength	80°C	ISO604	MPa	85	45	70	35	90	-	95	70	95	70	100	70	110	80	-	-
Coefficient of friction (Without lubrication)	Vs metal	Suzuki Method	-	0.15	-	0.15	-	0.15	-	0.15	-	0.15	-	0.15	-	0.15	-	0.15	-
Shear Strength	23°C	ASTM D732	MPa	105	-	100	-	115	65	85	-	85	-	95	75	100	250	73	62
Rockwell Hardness	23°C	ISO2039-2	R Scale	R119,M90	-	R119,M90	-	R120,M92	-	R120,M93	-	R120,M93	-	R121,M95	-	R121,M95	-	R119,M81	-
Rockwell Hardness	80°C	ISO2039-2	R Scale	10	-	10	-	12	-	12	-	12	-	30	-	30	-	25~30	-
Taper Abrasion		ISO9352	mg/1000times	0.3	-	0.3	-	0.3	-	0.35	-	0.35	-	0.35	-	0.35	-	0.4	-
Charpy Impact Strength (V-notched)	-40°C	ISO179	kJ/m ²	6	7	5.5	6.5	6	7	10	16.5	10	16.5	15	17	15.5	18	-	-
Charpy Impact Strength (V-notched)	23°C	ISO179	kJ/m ²	9	9.5	8.5	7	7	8.5	15	22.5	15	22.5	18.5	23	18.5	23.5	5	7
Charpy Impact Strength (Unnotched)	-40°C	ISO179	kJ/m ²	20	25	20	25	25	30	70	80	70	80	90	95	120	140	35	-
Charpy Impact Strength (Unnotched)	23°C	ISO179	kJ/m ²	50	60	30	35	55	70	80	100	80	100	100	120	130	-	45	-
Heat property																			
Melting Point		DSC Method	°C	225	-	225	-	225	-	225	-	225	-	225	-	225	-	225	-
Specific Heat		-	J/g · °C	1.7	-	1.7	-	1.6	-	1.6	-	1.6	-	1.4	-	1.4	-	-	-
Thermal Conductivity		-	W/m · °C	0.31	-	0.31	-	0.33	-	0.38	-	0.38	-	0.4	-	0.4	-	-	-
Coef of Linear Thermal Expansion		ISO11359-2	×10 ⁻⁵ /°C	4.5	-	4.5	-	3	-	2~3	-	2~3	-	2~3	-	2~3	-	8	-
Heat Deflection Temp Low Load	0.45MPa	ISO75-1,2	°C	210	-	210	-	215	-	224	-	224	-	225	-	225	-	203	-
Flammability		UL94	rank/thickness mm	HB相当	HB相当	HB(1/16")	HB(1/16")	HB(1/16")	HB(1/16")	HB(1/32")	HB(1/32")	HB(1/32")	HB(1/32")	HB(1/16")	HB(1/16")	-	-	HB(1/32")	HB(1/32")
Electrical property																			
Volume Resistivity		IEC60093	Ω · m	10 ¹³	10 ¹⁰	10 ¹³	10 ¹⁰	10 ¹³	10 ¹⁰	10 ¹³	10 ¹⁰	10 ¹³	10 ¹⁰	10 ¹³	10 ¹⁰	-	-	10 ¹³	10 ¹⁰
Dielectric Strength		IEC60243-1	MV/m	20	-	20	-	20	-	20	18	20	18	19	15	-	-	21	-
Dielectric Constant	23°C、60%RH、50Hz	IEC 60250	-	4.5	-	4.5	-	4.6	-	4.9	10.7	4.9	10.7	5	9.5	-	-	4.6	-
Dielectric Constant	23°C、60%RH、1KHz	IEC 60250	-	4.3	-	4.3	-	4.4	-	4.6	7.9	4.6	7.9	4.9	7.4	-	-	4.5	-
Dielectric Constant	23°C、60%RH、1MHz	IEC 60250	-	3.7	-	3.7	-	3.8	-	4	4.3	4	4.3	4.2	4.5	-	-	3.8	-
Dissipation Factor	23°C、60%RH、50Hz	IEC 60250	-	0.05	-	0.05	-	0.04	-	0.03	0.17	0.03	0.17	0.03	0.16	-	-	0.04	-
Dissipation Factor	23°C、60%RH、1KHz	IEC 60250	-	0.04	-	0.04	-	0.04	-	0.03	0.18	0.0~3	0.18	0.03	0.15	-	-	0.03	-
Dissipation Factor	23°C、60%RH、1MHz	IEC 60250	-	0.03	-	0.03	-	0.03	-	0.03	0.07	0.0~3	0.07	0.03	0.06	-	-	0.02	-
Arc resistance	Tungsten Electrode	UL-746A	sec.	120	-	120	-	120	-	131	137	131	137	104	109	-	-	137	-
Molding property																			
Mold shrinkage(Machine Direction)	80×80×3mm	Toray Method	%	0.5~0.7	-			0.3~0.5	-	0.2~0.4	-	0.2~0.4	-	0.1~0.3	-	0.1~0.3	-	0.8~1.0	-
Mold shrinkage(Transverse Direction)	80×80×3mm	Toray Method	%	0.7~1.1	-	0.7~1.1	-	0.6~0.9	-	0.5~0.8	-	0.5~0.8	-	0.4~0.6	-	0.4~0.6	-	0.8~1.0	-

These values are typical data for this product under specific test conditions and not intended for use as limiting specifications.