

MC/PA/POM

PROPERTIES 特性	Method	Unit	Dynex-Cast Nylon							POM-C			Dynex PET	Dynex-PC		Dynex-PEEK	
			Blue	NAT	Moly	OIL	WAX	ESD-R6	ESD-R10	NAT/BLK	ESD-R10	CNT-R6		NAT/BLK	NAT/BLK	CNT-R6	
Color 顏色	-	-	blue	ivory	gray-black	yellow	gray	black	Beige	white/black	beige	black	white	clear translucent/black	natural/black	black	
Density 比重	ISO1183	g/cm ³	1.15	1.15	1.16	1.11	1.11	1.2	1.15	1.41	1.33	1.41	1.4	1.2	1.31	1.31	
Water absorption 吸水率																	
After 24/96h immersion in water of 23°C 於水溫 23°C 在 24/96h 後吸水率	ISO62	mg	49/93	44/83	52/98	-/-	-/-	-/-	-	20/37	-	-	-	-/-	5/10	-	
	ISO62	%	0.72/1.37	0.65/1.22	0.76/1.43	0.5/-	0.5/-	-/-	-	0.24/0.45	-	-	-	0.15/-	0.06/0.12	-	
At saturation in air of 23°C,50%HR 空氣中 23°C,50%HR 直至飽和	-	%	2.3	2.2	2.4	-	-	-	-	0.2	-	-	-	-	0.2	-	
At saturation in of 23°C 23°C 吸水直至飽和	-	%	6.6	6.5	6.7	6.3	6.3	-	-	0.85	-	-	-	-	0.45	-	
Thermal Properties 熱性質																	
Melting Temperature 溶點	-	°C	220	220	220	220	220	225	-	165	165		255	-	340	-	
Thermal conductivity at 23°C 23°C 時熱傳導性	-	W/(K·m)	0.29	0.29	0.3	-	-	-	-	0.31				0.2	0.25	-	
Coefficient of liner thermal expansion 線型熱膨脹係數																	
Average value btw 23~60°C 介於 23~60°C 平均標準	-	m/(m·K)·10 ⁻⁶	80	80	80	-	-	-	-	110				-	50		
Average value btw 23~100°C 介於 23~100°C 平均標準	-	m/(m·K)·10 ⁻⁶	90	90	90	90	90	80	-	125	150		60	56	50		
Temperature of deflection under load 彎曲負載下之溫度																	
Method A : 1.8Mpa	ISO75	°C	180	180	180	115	115	180	-	105	90	100	67	136	160	160	
Max. allowable service temp.in air 空氣中最大允許溫度																	
For short periods(a few hours) 短時間(幾小時)	-	°C	170	170	170	-	-	-	-	140			160	-	310	-	
Continuously : 5000/20000h 連續 5000/20000h	-	°C	105/90	105/90	105/90	-/-	-/-	-/-	-	115/100	80	95		-/-	250	250	
Min. service temperature 最低使用溫度	-	°C	-30	-30	-30	-	-	-	-	-50				-	-	-	
Flammability 燃燒性																	
UL94(3/6mm thickness) UL94(厚度 3/6mm)	-	-	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	-	HB/HB	V-0/V-0	V-0/V-0
Mechanical Properties at 23°C 23°C 時機械性質																	
Tension test 抗漲特性																	
Tensile stress 抗漲應力	ISO527	MPa	81	85	78	68	66	78	60	65	37	56	80	72	100/-	100	
Tensile strain at break 斷裂抗漲強度	ISO527	%	35	25	25	14	19	4	30	30	15	6	20	20/5	15/	15	
Tensile modulus of elasticity 彈性抗漲係數	ISO527	MPa	3200	3500	3300	3000	3000	4200	1700	3100	1500	2200	3200	-	3900	4000	
Compression test 壓縮測試																	
Compressive stress at 1/2/5% nominal strain 1/2/5%變形之壓縮應力	ISO604	MPa	24/47/86	26/51/92	25/49/88	-/-/75	-/-/75	-/-/98	-	19/35/67	-	-	-	-/-/-	-/29/57	-	
Izod impact strength-Notched 耐衝擊測試(切口)	ISO180/2A	kJ/m ²	3.5	3.5	3.5	3.9	3.9	3.5	5.7	4	-	-	-	9.5	-	-	
Rockwell hardness 勞氏硬度	ISO2039-2	-	R116	R117	R114	R110	R110	R119	R98	R115	R106	R115	R84	R120	R120	R120	
Electrical Properties at 23°C 23°C 電氣性質																	
Electric strength 介電強度	IEC60243	KV/mm	25	25	24	-	-	-	-	20	-	-	-	-	24	-	
Volume resistivity 體積電阻係數	IEC60093	Ω·cm	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	10 ⁶ ~10 ⁸	-	>10 ¹⁴	-	-	-	>10 ¹⁶	>10 ¹⁴	-	
Surface resistivity 表面電阻係數	IEC60093	Ω	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	10 ⁵ ~10 ⁷	10 ⁹ ~10 ¹¹	>10 ¹³	10 ⁹ ~10 ¹¹	10 ⁵ ~10 ⁷	-	>10 ¹⁵	>10 ¹³	10 ⁵ ~10 ⁷	

Note : 1g/cm³ = 1000kg/m³; 1MPa = 1N/mm². 1kV/mm = 1MV/m

PE									PP			
PROPERTIES 特性	Method	Unit	Dynex-HDPE	OKULEN OK500 (HMW-PE)	OKULEN OK1000 (UHMW-PE)			OKULEN OK2000 (UHMW-PE)	Dynex-PP	Rochling-Polystone® P	Rochling-Polystone® PPs	
Color 顏色	-	-	white/black	white/black	white	Reg.-green	ESD	conductive	white/ brown	white	white/grey/nature	white
Density 比重	ISO1183	g/cm ³	0.94	≥ 0.95	≥ 0.93	≥ 0.93	≥ 0.93	≥ 0.93	≥ 0.93	0.9	0.91	-
	ASTM D792									-	-	0.94
Molecular-weight (average) 分子量(平均)	-	Mio g/mol.	-	~ 0,5	~ 5	~ 4-5	~ 4-5	~ 4-5	9.2			
Abrasion 耐磨性	ISO15527	%	-	400 ± 40	100	100	100±10	110-120	80			
Water absorption 吸水率												
After 24/96h immersion in water of 23°C 於水溫 23°C 在 24/96h 後吸水率	ISO62	%	0.01/-	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.1	0.01/-	< 0.1	-
At saturation in of 23°C 23°C 吸水直至飽和	-	%	0.01	-	-	-	-	-	-	0.01	-	-
Thermal Properties 熱性質												
Melting Point 溶點	ISO11357-1	°C	-	133-136	133-135	133-135	133-135	133-135	133-135	-	162-167	-
Thermal conductivity 熱導電性	Wire Method	W/(K·m)	-	0.41	0.41	0.41	0.41	0.41				
Thermal conductivity at 23°C 23°C 時熱傳導性	-	W/(K·m)								-	0.2	0.22
Coefficient of liner thermal expansion 線型熱膨脹係數												
Coefficient of liner thermal expansion 線型熱膨脹係數	DIN 53752	10 ⁻⁶ K ⁻¹								-	120-190	-
Coefficient of thermal expansion(23 - 80 °C) 熱膨脹係數(23 - 80 °C)	ISO11359	mm / mm °C	-	0.00015-0.00020	0.0002	0.0002	0.0002	0.0002	-	-	-	-
Temperature of deflection under load 彎曲負載下之溫度												
Method A : 1.8Mpa	ISO75	°C	47	-	-	-	-	-	-	-	-	-
Heat deflection temperature 熱變形溫度	ISO306	°C								-	90	-
Max. allowable service temp.in air 空氣中最大允許溫度												
For short periods(a few hours) 短時間(幾小時)	-	°C	-	80	80	80	80	80	80	-	150	-
Continuously : 5000/20000h 連續 5000/20000h	-	°C	-	-	-	-	-	-	-	-	100	-
Flammability 燃燒性												
UL94(3/6mm thickness) UL94(厚度 3/6mm)	-	-	HB/HB	HB	HB	HB	HB	HB	HB	HB	HB	V-0
Mechanical Properties at 23°C 23°C 時機械性質												
Tension test 抗漲特性												
Tensile stress 抗漲應力	ISO527	MPa	23	≥ 26 N/mm ²	≥ 20 N/mm ²	≥ 18 N/mm ²	≥ 18 N/mm ²	≥ 18 N/mm ²	≥ 20 N/mm ²	26	32	33
Tensile strain at break 斷裂抗漲強度	ISO527	%	>600	≥ 350	≥ 350	≥ 350	≥ 300	≥ 50	≥ 50	>500	>50	-
Tensile modulus of elasticity 彈性抗漲係數	ISO527	MPa	-	≥ 1100 N/mm ²	≥ 700 N/mm ²	≥ 700 N/mm ²	≥ 750 N/mm ²	≥ 750 N/mm ²	-	-	1300	1300
Compression test 壓縮測試												
Compressive stress at 1/2/5% nominal strain 1/2/5%變形之壓縮應力	ISO604	MPa	-/-/29	-	-	-	-	-	-	-/-/29	-	-
Izod impact strength-Notched 耐衝擊測試(切口)	ISO180/2A	kJ/m ²	No break	-	-	-	-	-	-	3	-	-
Charpy Impact strength (notched) 耐衝擊測試(切口)	ISO179	kJ/m ²								-	4	8
Notched impact strength 耐衝擊測試(切口)	ISO11542-2	kJ/m ²	-	≥ 25	≥ 190	≥ 140 - 170	≥ 140	≥ 50	≥ 130	-	-	-
Rockwell hardness 勞氏硬度	ISO2039-2	-	R60	-	-	-	-	-	-	R75	-	-
Shore Hardness, scale D 蕭氏硬度	ISO868	-	-	65-67	61-65	61 - 65	61-65	61-65	62	-	72	72
Electrical Properties at 23°C 23°C 電氣性質												
Electric strength 介電強度	IEC60243	kV/mm	-	-	-	-	-	-	-	-	45	-
Volume resistivity 體積電阻係數	IEC60093	Ω · cm	>10 ¹⁴	≥ 10 ¹⁴	≥ 10 ¹⁴	≥ 10 ¹⁴	≤ 10 ⁸	≤ 10 ³	≥ 10 ¹⁴	>10 ¹⁷	>10 ¹⁴	>10 ⁶
Surface resistivity 表面電阻係數	IEC60093	Ω	>10 ¹³	≥ 10 ¹³	≥ 10 ¹³	≥ 10 ¹³	10 ⁶ -10 ⁸	≤ 10 ³	≥ 10 ¹³	>10 ¹⁶	>10 ¹⁴	>10 ¹⁰

Note : 1g/cm³ = 1000kg/ m³; 1MPa = 1N/mm² . 1kV/mm = 1MV/m

PTFE/PVDF/PFA/PCTFE								PAI/PPS/PEI				PVC				
PROPERTIES 特性	Method	Unit	GAP PTFE	THAI-PTFE (carbon25%)	Simona PVDF	PFA	PCTFE	TPS-PAI			TPS-PPS	Dynex-PEI 5031	Simona PVC	SUMITOMO-PVC	Palram-PVC	SUMITOMO-HTPVC
								5013	5031	5032						
Color 顏色	-	-	white	black	white	natural	natural	natural	natural	natural	natural	amber translucent	dark grey/ swiss grey/ivory	grey/ivory	clear	dark grey
Light transmittance 透光率	ASTM D1003														87	-
Density 比重	ASTM D792 (ISO1183)	g/cm ³	2.15	2.1	(1.78)	2.12-2.20	2.1-2.2	1.4	1.45	1.5	1.35	(1.27)	(1.44)	1.47	1.4	1.65
Water absorption 吸水率																
After 24/96h immersion in water of 23°C 於水溫 23°C 在 24/96h 後吸水率	ISO62	mg	-	-	-	-	-	-	-	-	-	20/41	-	-	-	-
	ISO62 (ASTM D570)	%	(<0.01)	-	-	(0.03)	0.00	(0.33)	(0.28)	(0.18)	(0.02)	0.26/0.54	-	(0.02)	(0.03)	(0.02)
At saturation in air of 23°C,50%HR 空氣中 23°C,50%HR 直至飽和	-	%	-	-	-	-	-	-	-	-	-	0.75	-	-	-	-
At saturation in of 23°C 23°C 吸水直至飽和	-	%	-	-	-	-	-	-	-	-	-	1.35	-	-	-	-
Thermal Properties 熱性質																
Melting Temperature 溶點	-	°C	-	-	-	310	220	-	-	-	278	-	-	-	-	-
Thermal conductivity at 23°C 23°C 時熱傳導性	ASTM C177 (DIN 52612)	W/(K·m)	0.2	-	(0.14)	-	-	0.29	0.6	-	0.2	0.22	(0.159)	-	0.15	-
Coefficient of liner thermal expansion 線型熱膨脹係數																
From 25 to 100°C	ASTM D696	°C-1	13 x 10 ⁻⁵	7 x 10 ⁻⁵	-	12	4.5-70.0	-	-	-	-	-	-	-	-	-
Temperature of deflection under load 彎曲負載下之溫度																
Method A : 1.8Mpa	ISO75 (ASTM D648)	°C	-	-	-	-	-	(278)	(279)	(280)	(112)	190	-	(75)	(62 to 65)	(95)
Max. allowable service temp.in air 空氣中最大允許溫度																
For short periods(a few hours) 短時間(幾小時)	-	°C	-	-	-	260	200	-	-	-	-	200	-	-	-	-
Continuously : 5000/20000h 連續 5000/20000h	-	°C	-200 to 260	-200 to 260	-30 to 160	230	170	250	250	250	260	170	0°C to 60°C	60	0 to 50	80
Flammability 燃燒性																
Flammability ATB	ASTM D635	sec	<5	-	-	-	-	-	-	-	-	-	-	-	-	-
Flammability AEB	ASTM D635	mm	<5	-	-	-	-	-	-	-	-	-	-	-	-	-
FM4910	-	-	-	-	fulfilled	-	-	-	-	-	-	-	-	-	-	-
UL94(3/6mm thickness) UL94(厚度 3/6mm)	-	-	-	-	-	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0(>1mm)	V-0	-	V-0
Mechanical Properties at 23°C 23°C 時機械性質																
Tension test 抗漲特性																
Tensile stress 抗漲應力	ISO527 (ASTM D4849)	MPa	(22)	(15)	55	-	-	(186)	(157)	(147)	(79)	105	58	(55)	(71)	(61)
Tensile strain at break 斷裂抗漲強度	ISO527 (ASTM D4849)	%	(220)	(80)	-	-	-	-	-	-	-	10	-	(120)	(95)	(70)
Tensile modulus of elasticity 彈性抗漲係數	ISO527 (ASTM D790)	MPa	-	-	1950	-	-	-	-	-	-	3400	3300	(2940)	(3100)	(2940)
Compression test 壓縮測試																
Compressive stress at 1/2/5% nominal strain 1/2/5%變形之壓縮應力	ISO604 (ASTM D695)	MPa	(5/-)	(10/-)	-	-	-	(216)	(167)	(118)	-	25/49/-	-	-	-	(100)
Izod impact strength-Notched 耐衝擊測試(切口)	ISO180/2A (ASTM D256)	kJ/m ²	-	-	-	-	-	(127)	(60)	(59)	(15)	-	-	-	-	-
Impact strength 耐衝擊測試	ISO179	kJ/m ²	-	-	no break	-	-	-	-	-	-	-	-	-	-	-
Notched impact strength 耐衝擊測試(切口)	ISO179	kJ/m ²	-	-	12	-	-	-	-	-	-	-	4	-	-	-
Shore Hardness, scale D 蕭氏硬度	ISO868 (ASTM D2240)	-	(55)	(64)	78	(64)	-	-	-	-	-	-	82	-	80	-
Rockwell hardness 勞氏硬度	ISO2039-2 (ASTM D785)	-	-	-	-	-	(75-95)	(M119)	(M109)	(M100)	-	M114	-	(120)	(115)	(120)
Electrical Properties at 23°C 23°C 電氣性質																
Electric strength 介電強度	IEC60243 (ASTM D149)	kV/mm	(80)	-	25	(20)	(20-24)	-	-	-	-	27	39	(15)	(>50)	(15)
Volume resistivity 體積電阻係數	IEC60093 (ASTM D257)	Ω·cm	(10 ¹⁷)	(10 ⁷)	-	(>10 ¹⁸)	(1.2X>10 ¹)	(10 ¹⁵)	(10 ¹³)	(10 ¹²)	(10 ¹⁸)	>10 ¹⁴	-	-	-	-
Surface resistivity 表面電阻係數	IEC60093 (ASTM D257)	Ω	(10 ¹⁶)	(10 ⁶)	10 ¹⁴	-	-	(10 ¹⁸)	(10 ¹⁷)	(10 ¹¹)	(10 ¹⁶)	>10 ¹³	10 ¹³	(>10 ¹⁵)	(3.7x10 ¹⁴)	(>10 ¹⁵)

Note : 1g/cm³ = 1000kg/ m³; 1MPa = 1N/mm² . 1kV/mm = 1MV/m