



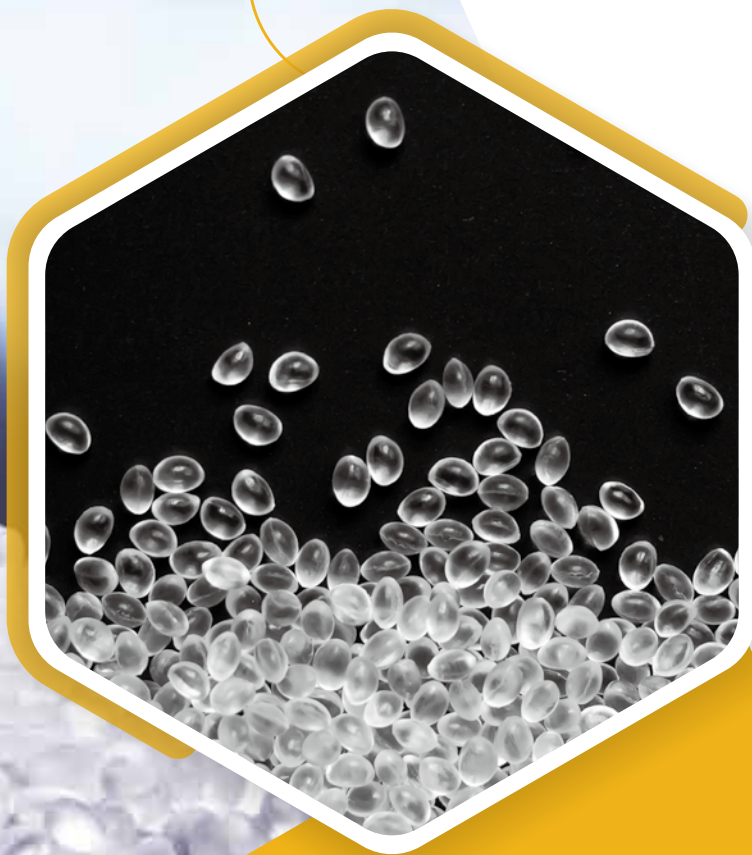
台塑聚丙烯塑膠

Polypropylene

ISO 9001 : TW03 / 016 02QA

ISO 14001 : EMSC- 1140

永嘉烯®
YUNGSOX®





聚丙烯事業部簡介

聚丙烯事業部原為台灣塑膠公司轉投資之子公司-永嘉化學工業股份有限公司，於2003年8月1日併入而成立。整合後資源共享，競爭力增強，及延續過去20多年來的生產經驗，擴展研究開發領域，研製新產品，繼續為聚丙烯加工業界提供更廣泛的服務，並沿用原已註冊之商品名-永嘉烯®及商標。

目前林園聚丙烯廠有粉漿法與氣相法兩套製程，年產能共有47.4萬噸。其中粉漿製程的產品特色，主要為低MI真空成型與管材產品，高流動性低氣味射出級產品，高結晶高耐熱性的家電用品，醫療用器材及食品用之雙向延伸膜(BOPP)；氣相製程的產品特色，主要為PPR與PPB管材，高流動且高耐衝擊產品(RTPO)，高透明性射出產品及高速高透明之雙向延伸膜(BOPP)。

台塑公司於2003年12月在寧波成立台塑聚丙烯(寧波)有限公司。寧波聚丙烯工廠位於寧波北侖的台塑關係企業寧波工業園區，於2008年完成試車、量產及銷售，並沿用原註冊之商品名-永嘉烯®及商標；採用與林園廠氣相製程相同且新一代的Novolen德國工藝，年產能52萬噸，產品的特色主要為PPR與PPB管材，高流動且高耐衝擊產品，高結晶高耐熱家電用品，高透明性射出產品及高速高透明之雙向延伸膜(BOPP)。

Briefing of PP Division

PP Division was founded on August 1, 2003 when FPC merged Yung-Chia Chemistry Ind. Corp. The merging integrated the resources of FPC and Yung-Chia, strengthening the competitive edge and expanding researching & development to provide more extensive service in PP processing industry. We continue using the registered brand name and logo, Yungsox® and .

The total annual capacity is 474KT of Polypropylene by using slurry and gas phase processes in the Lin-Yuan Plant. Slurry process mainly produces low MFI for thermoforming grade, high flow and low odor injection grade, high crystalline grade with high temperature resistance for home appliances, medical application and BOPP film grade for food package, while gas phase process mainly produces PPR and PPB pipe grade, high flow and high impact copolymer, and high processing speed, high transparent BOPP grade.

Ningbo Plant, located in the Ningbo Industrial Park Beilun Ningbo China, completed plant trial, production and sale in 2008. The annual capacity is 520KT of Polypropylene by using the most latest and advanced manufacture technology from Novolen Germany. Specific products in this plant are PPB and PPR pipe grade, high flow and high impact copolymer, high crystalline grade with high temperature resistance, high transparent injection grade and high speed, high transparent BOPP grade.

永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	薄膜級 Film Grade														
			均聚物 Homopolymer						耐衝擊共聚物 Impact Copolymer		無規共聚物 Random Copolymer						
			6020P	2020	2020S	2080	2100	2100M	3015S	3080P	5020	5050	5050R	5050M	5050S	5070	5071
熔融指數 Melt Index	g/ 10min	ISO1133 (ASTM D-1238)	2	3	3	10	7	7	2	7.5	3	6.5	6.5	6.5	6.5	7.5	7.5
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	115	113	113	115	115	115	100	108	75	75	75	80	75	90	90
軟化點溫度 Vicat Softening Temperature	℃	ISO306	155	150	150	155	155	155	145	152	110	110	110	110	110	125	125
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	370 (36)	350 (34)	350 (34)	350 (34)	350 (34)	350 (34)	250 (25)	260 (25)	200 (20)	200 (20)	200 (20)	200 (20)	200 (20)	250 (25)	250 (25)
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	600	600	600	500	500	500	500	500	500	500	500	500	500	500	500
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	105	105	105	107	107	107	95	93	80	80	80	85	80	95	95
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	16,500 (1618)	12,500 (1226)	12,500 (1226)	14,000 (1373)	14,000 (1373)	14,000 (1373)	11,000 (1079)	12,000 (1177)	5,000 (490)	5,000 (490)	5,000 (490)	5,500 (539)	5,000 (490)	7,500 (735)	7,500 (735)
IZOD 衝擊強度 IZOD Impact Strength	Kgcm/ cm notch (J/m)	ISO180 (23℃) (ASTM D-256)	4.5 (44)	4.5 (44)	4.5 (44)	3.5 (34)	4 (39)	4 (39)	48 (470)	8 (78)	12 (118)	10 (98)	10 (98)	10 (98)	10 (98)	7 (69)	7 (69)
		(-20℃)	---	---	---	---	---	---	10 (98)	5 (49)	---	---	---	---	---	---	---
濁度 Haze (30 μ)	%	FPC Method	<1.5	< 0.12	< 0.11	< 2.2	< 0.5	< 0.5	< 60	< 60	< 1.0	< 1.0	< 0.6	< 1.5	< 0.5	< 1.0	< 0.5
密度 Density	g/cm ³	ISO1183 (ASTM D-792)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
熔點 Melting Point	℃	DSC	165	162	160	165	165	165	165	165	133	132	130	131	130	144	144
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USP Class VI			---	---	---	---	---	---	---	---	---	---	---	Yes	Yes	---	---
JHOSPA-PL			---	Yes	Yes	---	Yes	Yes	---	---	---	Yes	Yes	---	---	Yes	---
用途 Application			隔離膜 微孔膜 Separator, Micro-porous membrane	BOPP 膜、高級食品、 服裝及飾品包裝、透明 膠帶及裝飾紙積層膜 BOPP film, High quality food, Garment & garnish packaging, Tape		IPP 吹膜 一般食品及 成衣包裝 IPP film, General food & garment, packaging	CPP 鑄膜 食品包裝 積層膜 CPP film, Food packing cast film	CPP 鑄膜 電鍍積層膜 CPP film, Aluminum metallized cast film	高溫蒸煮膜、 CPP 鑄膜、 鋁塑膜 Retort film , CPP film, Aluminum laminate film	光學保護膜、 CPP 鑄膜 Optical protective film, CPP film	收縮膜 Shrink film	熱封層膜、 收縮膜 Heat sealing layer, Shrink film		電鍍積層膜 熱封層膜 Aluminum metallized cast film,Heat sealing layer	醫用包裝膜 輸液軟袋膜 Packaging of pharm- aceuticals, Infusion bags (IV bags)	CPP 鑄膜、一般食品 成衣包裝積層膜 CPP film, General food & garment packaging cast film	
特性 Characteristics			拉力強度優、 剛性佳、耐化學性好 Excellent tensile strength, High flexural modulus, Excellent chemical resistance	高速生產性優、 明性優、光澤性佳 Excellent processing for high speed, Excellent transparent, Good luster		開口性佳、 滑性佳、 透明性佳 Good slippery & antiblock, Good transparent	透明性優、 積層加工性優 Excellent transparent, Excellent laminates	電鍍性佳、透明性 優、積層加工性優 Good metallize properties, Excellent transparent, Excellent laminates	高衝擊強度、低溫 脆性優、熱封強度 優、低魚目、加工 穩定性佳 High impact strength, Excellent heat sealing, Low fish eye	中衝擊強度、 熱封強度優、低魚目、 加工穩定性佳 Medium impact strength, Excellent heat sealing strength, Low fish eye, Excellent process stability	低熱封溫度、 柔軟性佳 Low heat seal temperature, Good softness		電鍍性佳 低熱封溫度 柔軟性佳 Good metallizing properties, Low heat seal temperature, Good softness	低熱封溫度 柔軟性佳 抗化學藥品性佳 Low heat seal temperature, Good softness, Good resistance to chemical	透明性佳 積層加工性優 滑性佳 Good transparent, Excellent laminates, Good slip	透明性優 積層加工性優 Excellent transparent, Excellent laminates	

本表數據為代表值，僅供選擇品級用途之參考
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永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	射出級 Injection Grade											
			均聚物 Homopolymer											
			1040	1080	1120	1100	1124	1124H	1250D	1350D	1350R	1600D	1700D	1600N
熔融指數 Melt Index	g/ 10min	ISO1133 (ASTM D-1238)	5	10	15	11	15	23	25	35	38	60	70	60
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	115	115	120	115	135	125	120	120	110	118	118	125
軟化點溫度 Vicat Softening Temperature	℃	ISO306	155	155	155	155	157	156	155	155	150	153	153	155
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	350 (34)	350 (34)	450 (44)	380 (37)	490 (48)	470 (46)	400 (39)	400 (39)	350 (34)	380 (37)	380 (37)	400 (39)
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	550	500	100	500	50	50	50	50	500	50	50	50
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	105	107	111	107	115	112	111	111	105	110	110	111
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	14,000 (1373)	14,000 (1373)	16,000 (1569)	14,500 (1422)	22,000 (2157)	17,000 (1667)	16,000 (1569)	16,000 (1569)	15,000 (1471)	15,500 (1520)	15,500 (1520)	17,000 (1667)
IZOD 衝擊強度 IZOD Impact Strength	Kgcm/ cm notch (J/m)	ISO180 (23℃) (ASTM D-256)	4 (39)	3.5 (34)	3.0 (29)	3.5 (34)	3.0 (29)	3.0 (29)	3.0 (29)	3.0 (29)	4.0 (39)	3.0 (29)	2.5 (25)	3.6 (35)
		(-20℃)	---	---	---	---	---	---	---	---	---	---	---	---
收縮率 Mold Shrinkage	%	FPC Method	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7
密度 Density	g/cm ³	ISO1183	0.90	0.90	0.90	0.90	0.91	0.91	0.90	0.90	0.90	0.90	0.90	0.90
燃燒 Flammability File No. E216959	Class	UL94	94HB	94HB	94HB	---	---	94HB RTI 125℃	---	---	---	---	---	---
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USP Class VI			---	---	---	---	---	---	Yes	---	Yes	---	---	---
JHOSPA-PL			Yes	Yes	Yes	---	---	Yes	Yes	Yes	---	Yes	Yes	Yes
用途 Application			通用級、玩具、 電器用品、家庭用品 General purpose, Toys, Electrical appliances, Housewares			光學級、 電器用品 Optical purpose, Electrical appliances	電器用品、微波食品容器、 家庭用品 Electrical appliances, Microwave food containers, Housewares		薄壁射出成型品、收藏箱、家庭用品 Thin walled products, Storage boxes, Housewares		實驗室耗材、 醫療器材、 Labware, Medical device	高速射出薄壁成型品、收藏箱、家庭用品 High speed thin walled injection molding products, Storage boxes, Housewares		
特性 Characteristics			耐熱性佳、 剛性佳 Good heat resistance, Good stiffness		高剛性、 耐熱性優 High stiffness, Excellent heat resistance	抗化學藥品性 佳、低翹曲、 低析出 Good resistance to chemical, Low warpage, Low migration	高剛性、高耐熱性、 耐磨性優、光澤性佳 High stiffness, High heat resistance, Excellent resistance to abrasion, Good luster		高流動性、光澤性佳、低翹曲 High fluidity, Good luster, Low warpage		適用於 γ ray 消毒 高流動性、 光澤性佳、低翹曲 Anti γ-ray, High fluidity, Good luster, Low warpage	超高流動性、成型時間短、 光澤性佳、低翹曲 Superhigh fluidity, Fast cycling, Good luster, Low warpage		透明性佳、 成型時間短、 光澤性佳、低翹曲 Good transparency, Fast cycling, Good luster, Low warpage

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永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	射出級 Injection Grade															
			耐衝擊共聚物 Impact Copolymer															
			3015	3040C	3040	3080	3090	3064H	3084	3084H	3155	3204	3354	3504				
熔融指數 Melt Index	g/ 10min	ISO1133 (ASTM D-1238)	2	3.5	5	8.5	8.5	6	8.5	8.5	15	29	35	55				
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	110	110	105	105	110	130	130	130	105	105	105	125				
軟化點溫度 Vicat Softening Temperature	℃	ISO306	145	145	140	140	145	155	155	155	140	140	140	155				
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	280 (27)	280 (27)	280 (27)	280 (27)	280 (27)	300 (29)	290 (28)	290 (28)	250 (25)	260 (25)	250 (25)	270 (26)				
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	450	400	500	500	500	200	200	200	400	100	100	100				
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	95	95	98	100	100	105	105	105	95	95	95	100				
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	11,500 (1128)	13,000 (1275)	12,000 (1177)	12,000 (1177)	11,500 (1128)	15,500 (1520)	14,000 (1373)	14,000 (1373)	11,500 (1128)	11,000 (1079)	12,500 (1226)	13,000 (1275)				
IZOD 衝擊強度 IZOD Impact Strength	Kgcm/ cm notch (J/m)	ISO180(23℃) (ASTM D-256)	60 (588)	55 (539)	15 (147)	12 (118)	50 (490)	15 (147)	15 (147)	15 (147)	12 (118)	13 (127)	9 (88)	8.5 (83)				
		(-20℃)	13 (127)	10 (98)	5.5 (54)	4.5 (44)	8 (78)	4.5 (44)	4.5 (44)	4.5 (44)	6 (59)	6 (59)	4 (39)	4 (39)				
收縮率 Mold Shrinkage	%	FPC Method	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7				
密度 Density	g/cm ³	ISO1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
燃燒 Flammability File No. E216959	Class	UL94	94HB	94HB	---	94HB	---	---	94HB	94HB RTI 125℃	---	---	---	---				
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
USP Class VI			---	---	---	---	---	---	---	---	---	---	---	---				
JHOSPA-PL			---	---	Yes	---	---	---	---	---	---	---	---	---				
用途 Application			油漆桶、運動器材、行李箱、載重容器 Pail, Sports appliance, Base of luggage, Heavy duty container			汽機車配件、電器零件、玩具、電池殼、辦公傢具 Automotive parts, Electric appliance parts, Toys, Battery case, Furniture			飲料瓶蓋、電器零件 Bottle cap, Electric appliance parts		汽機車配件、電器零件、電池殼、辦公傢具 Automotive parts, Electric appliance parts, Battery case, Furniture		汽機車配件、電器零件 辦公傢具、行李箱 Automotive parts, Electric appliance parts, Furniture, Luggage		汽機車大型配件、電器零件、洗衣機內槽、工具箱、大型整理箱、薄壁產品 Larger automotive parts, Electric appliance parts, Washing machine parts, Tool boxes, Storage boxes, Thin wall products			
特性 Characteristics			高衝擊強度、低溫脆性優、剛性佳 High impact strength, Excellent resistance to low temperature brittleness, Good stiffness			中衝擊強度 Medium impact strength		高衝擊強度 High impact strength	高剛性、高耐熱性、高衝擊強度 High stiffness, High heat resistance, High impact strength		高剛性、高耐熱性、中衝擊強度 High stiffness, High heat resistance, Medium impact strength		高光澤、抗應力白化性佳 High gloss, Good resistance to stress whitening		高流動性、中衝擊強度 High fluidity, Medium impact strength		超高流動性、高剛性、高耐熱性 Superhigh fluidity, High stiffness, High heat resistance	

本表數據為代表值，僅供選擇品級用途之參考
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永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	射出級 Injection Grade											
			耐衝擊共聚物 Impact Copolymer		高耐衝擊共聚物 High Impact Copolymer				無規共聚物 Random Copolymer					
			3300N	3600N	4084	4204	4304	4604	5060T	5090T	5200XT	5250T	5090R	5350T
熔融指數 Melt Index	g/ 10min	ISO1133 (ASTM D-1238)	30	55	10	19	30	60	7.5	15	18	22	19	35
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	125	125	100	100	100	100	95	95	95	95	95	95
軟化點溫度 Vicat Softening Temperature	℃	ISO306	140	140	135	135	140	140	125	125	125	125	125	125
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	260 (27)	270 (26)	220 (22)	210 (21)	230 (23)	200 (20)	280 (27)	280 (27)	280 (27)	280 (27)	280 (27)	280 (27)
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	100	100	550	550	450	450	300	300	300	300	300	200
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	95	100	95	92	95	90	98	98	98	98	98	98
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	10,500 (1030)	12,000 (1177)	9,000 (883)	9,500 (932)	9,500 (932)	8,500 (834)	10,000 (981)	10,500 (1030)	10,500 (1030)	10,500 (1030)	10,500 (1030)	10,500 (1030)
IZOD 衝擊強度 IZOD Impact Strength	Kgcm/ cm notch (J/m)	ISO180(23℃) (ASTM D-256)	14 (137)	8.5 (83)	40 (392)	50 (490)	45 (441)	50 (490)	7 (69)	6 (59)	6 (59)	5 (49)	6 (59)	5 (49)
		(-20℃)	8 (78)	4 (39)	10 (98)	10 (98)	10 (98)	10 (98)	---	---	---	---	---	---
收縮率 Mold Shrinkage	%	FPC Method	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7
密度 Density	g/cm ³	ISO1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
燃燒 Flammability File No. E216959	Class	UL94	---	---	---	---	---	---	94HB	94HB	---	---	---	94HB
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USP Class VI			---	---	---	---	---	---	Yes	Yes	---	Yes	Yes	Yes
JHOSPA-PL			---	---	---	---	---	---	---	Yes	---	---	---	Yes
用途 Application			汽機車大型配件、電器零件、洗衣機內槽、大型整理箱、薄壁產品 Larger automotive parts, Electric appliance parts, Washing machine parts, Storage boxes, Thin wall products		保險槓、汽車配件、載重容器、棧板 Bumpers, Automotive parts, Heavy duty container, Pallet				透明文件夾、透明 CPP 膜、透明容器 Transparent portfolio, Transparent CPP film, Transparency container		高透明容器、透明家庭用品、一次性針筒 High transparent container, Transparent housewares, Disposable syringes		一次性針筒 適用於 γ ray 消毒 Disposable syringes, Anti γ ray	高透明容器、透明家庭用品、一次性針筒 High transparent container, Transparent housewares, Disposable syringes
特性 Characteristics			高流動性、中衝擊強度、收縮均勻性佳 High fluidity, Medium impact strength, Uniform shrinkage	超高流動性、高剛性、高耐熱性、收縮均勻性佳 Superhigh fluidity, High stiffness, High heat resistance, Uniform shrinkage	高衝擊強度、低溫脆性優 High impact strength, Excellent resistance to low temperature brittleness	高流動性、高衝擊強度、低溫脆性優 High fluidity, High impact strength, Excellent resistance to low temperature brittleness			高透明性、光澤性佳 High transparent, Good luster		高透明性、抗化學藥品性佳 High transparent, Good resistance to chemical		高透明性、抗化學藥品性佳 High transparency, Good resistance to chemical	高流動性、高透明性、抗化學藥品性佳 High fluidity, High transparent, Good resistance to chemical

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永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	押出吹製級 Extrusion & Blow Molding Grade								
			均聚物 Homopolymer								
			1005	1005N	1009	1020	1020L	1024	1025	1024T	1020T
熔融指數 Melt Index	g/10min	ISO1133 (ASTM D-1238)	0.5	0.5	0.9	2.0	1.7	1.8	1.8	1.8	2.8
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	117	115	115	115	115	122	122	120	105
軟化點溫度 Vicat Softening Temperature	℃	ISO306	155	152	152	152	152	155	155	153	150
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	370 (36)	360 (35)	350 (34)	350 (34)	350 (34)	400 (39)	400 (39)	380 (37)	350 (34)
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	300	350	300	400	400	200	200	200	400
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	107	105	105	105	105	110	110	110	105
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	15,500 (1520)	15,500 (1520)	13,500 (1324)	13,500 (1324)	13,500 (1324)	16,000 (1569)	16,000 (1569)	15,000 (1471)	13,500 (1324)
IZOD 衝擊強度 IZOD Impact Strength	Kgcm/cm notch (J/m)	ISO180 (23℃) (ASTM D-256)	13 (127)	45 (441)	8 (78)	6 (59)	6 (59)	6 (59)	6 (59)	6 (59)	7 (69)
		(-20℃)	---	---	---	---	---	---	---	---	---
收縮率 Mold Shrinkage	%	FPC Method	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7
密度 Density	g/cm ³	ISO1183	0.90	0.90	0.90	0.90	0.90	0.91	0.91	0.91	0.90
燃燒 Flammability File No. E216959	Class	UL94	---	---	---	---	---	---	---	---	---
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USP Class VI			---		---	---	---	Yes	---	---	---
JHOSPA-PL			Yes	Yes	---	---	---	---	---	---	Yes
用途 Application			真空成型板、PPH 管材、吹製成型 Thermoforming sheet, PPH pipe, Blow molding	真空成型板、吹製成型 Thermoforming sheet, Blow molding	真空成型板、吹製成型、打包帶 Thermoforming sheet, Blow molding Strapping	壓空成型板、文件夾、吹瓶、打包帶 Pressure forming sheet, Portfolio, Bottles, Strapping		藥水瓶、滴眼劑瓶 Liquid medicine bottle, Eye drop bottle	透明壓空成型板、文件夾、吹瓶 Transparent pressure forming sheet, Portfolio, Bottles	透明壓空成型板、文件夾 Transparent pressure forming sheet, Portfolio	
特性 Characteristics			熔融強度優、真空成型性佳 Excellent melt strength, Deep drawing	熔融強度優、真空成型性佳、透明性佳 Excellent melt strength, Deep drawing, Good transparency	拉力強度優 Excellent tensile strength	拉力強度優 Excellent tensile strength		正己烷溶出物低、高剛性、高耐熱性 Low n-hexane extract, High stiffness, High heat resistance	透明性佳、高剛性、高耐熱性 Good transparency, High stiffness, High heat resistance		超高透明性佳、高剛性、高耐熱性 Excellent transparency, High stiffness, High heat resistance

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永嘉烯物性表 YUNGSOX PP RESIN PROPERTIES DATA SHEET

項目 Properties	單位 Unit	檢驗 方法 Test Method	押出吹製級 Extrusion Grade					纖維級 Fiber Grade					
			耐衝擊共聚物 Impact Copolymer			無規共聚物 Random Copolymer		均聚物 Homopolymer					
			3003	3005	3010	5018	5018T	1040F	1202F	1352F	1900D	1924F	1990
熔融指數 Melt Index	g/ 10min	ISO1133 (ASTM D-1238)	0.35	0.5	1.3	1.7	1.7	3	18	35	120	240	1,500
熱變形溫度 Heat Deflection Temperature	℃	ASTM D648 (ISO75)	110	110	110	90	95	113	115	115	115	115	115
軟化點溫度 Vicat Softening Temperature	℃	ISO306	145	145	145	120	125	150	152	152	153	150	150
降伏拉力強度 Tensile Strength at Yield	Kg/cm ² (MPa)	ISO527 (ASTM D-638)	250 (25)	250 (25)	250 (25)	250 (25)	300 (29)	350 (34)	350 (34)	300 (29)	370 (36)	300 (29)	300 (29)
斷裂點伸長率 Tensile Elongation at Break	%	ISO527 (ASTM D-638)	500	500	500	500	400	600	300	100	50	<50	<50
洛氏硬度 Rockwell Hardness	R scale	ISO2039 (ASTM D-785)	95	95	95	90	98	105	105	105	108	110	107
剛性係數 Flexural Modulus	Kg/cm ² (MPa)	ISO178 (ASTM D-790)	13,000 (1275)	12,500 (1226)	13,500 (1324)	9,500 (932)	10,500 (1030)	12,500 (1226)	13,500 (1324)	13,000 (1275)	15,000 (1471)	14,000 (1373)	13,500 (1324)
IZOD 衝擊強度 IZOD Impact Strength	Kgc m/ cm notch (J/m)	ISO180(23℃) (ASTM D-256)	90 (882)	70 (686)	70 (686)	8 (78)	15 (147)	4.5 (44)	3 (29)	3 (29)	2.5 (25)	2.3 (23)	2 (20)
		(-20℃)	16 (157)	16 (157)	13 (127)	---	---	---	---	---	---	---	---
收縮率 Mold Shrinkage	%	FPC Method	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7	1.3-1.7
密度 Density	g/cm ³	ISO1183	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
燃燒 Flammability File No. E216959	Class	UL94	---	---	---	---	---	---	---	---	---	---	---
FDA 21 CFR 177.1520			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USP Class VI			---	---	---	Yes	---	---	---	---	---	---	---
JHOSPA-PL			---	---	---	---	Yes	---	---	---	---	---	---
用途 Application			PPB 管材 PPB Pipe	真空成型板、 吹製成型 Thermoforming sheet, Blow molding	瓦楞板、吹製成型 Corrugated sheet, Blow molding	吹瓶、點滴瓶, Blow molding, Pharmaceutical bottle	吹瓶、果汁瓶, 透明文件夾 Blow molding, Juice bottle, Transparent portfolio	扁紗：編織袋， 地毯底部單絲： 刷子，繩索 Yarn: Woven bags, Carpet backing Monofilament: Brush, Rope	地工織物、織帶 地毯紗、工業布 Geotextile, Textile, Carpet facing, Industrial textile	不織布、濾布、 工業布 Non-woven fabric , Filter cloth, Industrial textile	高速薄壁射出成型 品、濾材 High speed thin walled injection molding products, Filtration media	高速薄壁射出成型 品、熔噴濾芯、濾材 High speed thin walled injection molding products, Meltblown filter, Filtration media	熔噴濾芯、不織布、 衛材、尿布、濾材 Meltblown filter, Non-woven fabric, Hygiene, Diaper, Filtration media
特性 Characteristics			高衝擊強度、低溫脆性優、 熔融強度優 High impact strength, Excellent resistance to low temperature brittleness, Excellent melt strength		高衝擊強度、低溫 脆性優、剛性佳 High impact strength, Excellent resistance to low temperature brittleness, Good stiffness	抗化學藥品性佳 Good resistance to chemical	高透明性 光澤性佳 High transparency, Good luster	拉力強度優 Excellent tensile strength	抗氣體變色性佳、 延伸性佳、 拉力強度優 Anti gas-fading, Good stretchability Excellent tensile strength	抗氣體變色性佳、 延伸性佳、柔軟性佳 Anti gas-fading, Good stretchability, Good softness	超高流動性、成型時間短、 光澤性佳、低翹曲 Superhigh fluidity, Fast cycling, Good luster, Low warpage	超高流動性、成型時間短、 紡織性優、牽引性優、 低丹尼數 Superhigh fluidity, Fast cycling, Excellent spinnability, Excellent drawability, Low denier	超高流動性、紡織性 優、牽引性優、低丹尼 數、柔軟性佳、顆粒狀 Superhigh fluidity, Excellent spinnability, Excellent drawability, Low denier, Good softness, Pellet type

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(2025.02.2000.38)