

誠信 務實 創新

Integrity.Diligence.Innovation

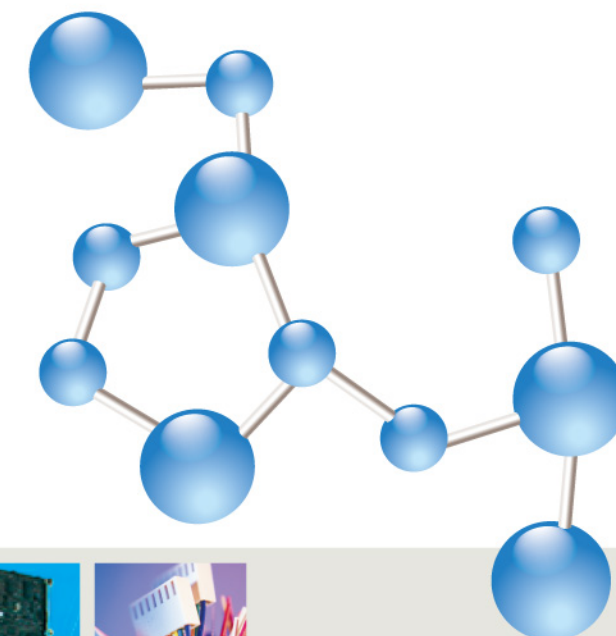


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喬福集團
CHIAO FU GROUP



Specification Catalogue for Engineering Plastics

喬福複合材料



公司簡介

『喬福集團』創立於1976年，為泡綿專業製造廠商，並於1983年跨足塑膠產業，2006年併購專業生產尼龍束帶的華偉公司。歷經數十年之努力經營，已發展為一國際性集團企業，現於台灣、中國、香港、泰國、印度與澳洲等地，擁有十餘家泡綿、塑膠、配線器材等生產工廠，員工超過三千名以上，是為世界最主要軟質泡綿、塑膠加工與配線器材生產廠商之一。

自創立迄今，喬福集團展現了堅厚的經營實力，並於國內夥伴，進行策略聯盟與技術合作，積極擴展國際市場，持續建構多角化與國際化之經營模式，以提昇市場核心競爭能力。

經營理念：客戶第一、創造利潤、回饋社會、永續經營

企業價值：誠信、務實、創新

Enterprise Profile

Chiao Fu was founded as a specialist foam manufacturer in 1976. Expansion into the plastic industry commenced in 1983. In 2006, Chiao Fu acquired Hua Wei and stepped into cable tie and wiring accessory industry. Today, Chiao Fu has grown to be an international organization with plants and offices across Australia, China, Hong Kong, Taiwan, and Thailand employing well over 3,000 people. It is one of the world's major suppliers of flexible polyurethane foams and plastic products.

Chiao Fu's products are found in many items used in everyday life, including footwear, underclothes, gym equipment, computer equipment, furniture and automobiles. Our superior quality, service and our commitment to long-term partnerships are well recognized by our customers, many of whom own world-renowned names.

We endeavor to maintain and improve our core competencies by forming strategic alliances with domestic and international partners and actively seeking expansion opportunities in overseas markets, as well as related industries.

Management Philosophy : Putting customers first; Creating profits; Contributing back to the community; Ensuring sustainable operations

Core Values : Integrity, Diligence, Innovation

塑膠簡介

『喬福集團』塑膠複合材料事業部門，主要經營業務為工程塑膠之混煉押出、染/配色與產品銷售，產品包括尼龍6、尼龍66、聚丙烯、聚對苯二甲酸丁二酯、聚碳酸酯、聚乳酸等之各級強化與合膠複合材料。而隨著全球綠色趨勢興起，環保意識的抬頭，新開發了無鹵阻燃及生物可分解產品。多年來由於優異的改良技術、穩定的加工品質與快速的客戶服務，廣受各行業客戶的好評，主要客戶涵蓋運動器材、電子電機、動力手工具、傢俱、汽車、腳踏車、餐具等產業。

為準確掌握各項產品性能，確保塑膠粒品質，設有符合ASTM檢測規範之耐衝擊試驗機、萬能試驗機、融熔指數試驗機、熱變形溫度試驗機等物性檢驗設備，以嚴格品質監控，達到穩定的成型加工性，符合各類行業客戶之物性需求。並成立塑膠研發單位，積極進行物性改質技術研究，除提供物性完整的系列產品項目外，可配合客戶客製化之工程塑膠材料開發。

為滿足客戶的需求，我們亦提供所有塑料的配色服務，也有通過UL認證之產品與符合RoHS之綠色產品。

Plastics Introduction

The main business of Plastics Composite Material Enterprise (Department of Chiao Fu Group) provide service that includes blending, extrusion, dyeing, color-matching and the product selling of engineering plastics. Our products include all kinds of reinforced and alloyed plastics composite materials such as PA6, PA66, PP, PBT, PC, PLA etc. Follow the global green tendency rise and develop, and environmental consciousness gaining ground. We have developed non-halogen flame resistant materials and the biological products newly. With excellent modified technology, stable manufacturing process quality, and quick customer service, we have won praise from all of our customers for all of our years in business. Our main customers are involved in include in various industries such as sport facility, electronics, powered hand tools, furniture, automobiles, bicycles and cutleries amongst many others.

In order to precisely control the performance of a variety of products and ensure the quality of plastic pellets, we use test equipment which meets ASTM standards, such as the Izod/Charpy Impact Testing Machine, the Universal Testing Machine, the Melt flow indexer, and the Heat distortion tester. Our company strictly controls the stable forming process in order to meet mechanical property requirements for all of our customers. Furthermore, we also have established a plastics development department in an effort to conduct more research in the modified technology field. Not only does our company provide a complete series of products in mechanical property, but we also develop engineering plastic materials to meet our customers' specific requirements.

In order to satisfy all of our customers' needs, we also provide color-matching service to all plastics, and the green of products that passed the UL authentication, and conformed to the RoHS request.

尼龍-6 樹脂 MODIFIED PA 6 (POLYAMIDE-6 RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	MC212G20 NAT	20%玻纖強化本色樹脂 20%glass fiber resins NAT	適用於高剛性、耐熱性要求之射出產品 用途例：運動器材、電動工具外殼、手工具 自行車剎車零件、釣具捲線器、 捲門軸、辦公桌椅 Apply to injection molding products of high rigid,heat resistance Used in : Sport device parts,Power drill housing, hand tool,bicycle braking parts, fishing tackle winder, curls doorpost, office furniture	1.27	1200	1900	57000	8	205	<0.35	■ ■
	MC212G30 NAT	30%玻纖強化本色樹脂 30%glass fiber resins NAT		1.33	1450	2200	75000	12	208	<0.25	■ ■
	MC212G40 NAT	40%玻纖強化本色樹脂 40%glass fiber resins NAT		1.42	1600	2400	85000	15	210	<0.20	■ ■
	MC212G45 NAT	45%玻纖強化本色樹脂 45%glass fiber resins NAT		1.45	1700	2700	90000	16	210	<0.20	■ ■
	MC212G50 NAT	50%玻纖強化本色樹脂 50%glass fiber resins NAT		1.53	1800	2900	100000	16	210	<0.20	■ ■
	MC312G20 BK	20%玻纖強化黑色樹脂 20%glass fiber resins BK		1.26	900	1400	49000	6	200	<0.35	■
	MC312G30 BK	30%玻纖強化黑色樹脂 30%glass fiber resins BK		1.33	1000	1650	65000	8	203	<0.25	■
	MC312G40 BK	40%玻纖強化黑色樹脂 40%glass fiber resins BK		1.43	1300	2000	77000	9	205	<0.20	■
	MC312G45 BK	45%玻纖強化黑色樹脂 45%glass fiber resins BK		1.46	1300	2100	80000	10	205	<0.20	■
	MC312G50 BK	50%玻纖強化黑色樹脂 50%glass fiber resins BK		1.53	1400	2200	85000	11	205	<0.20	■
表面改良剛性強化級 Glass/Mineral Reinforced	MC212GM20 NAT	20%玻纖/礦纖強化本色樹脂 20%glass fiber/minerals resins NAT	適用於尺寸安定性、低翹曲性、表面平滑性要求之射出產品 用途例：機車引擎護套、打氣筒、園藝工具 Apply to injection molding products of dimensional stability,low warp, surface smoothness Used in : locomotive engine protective covering, air pump components,garden tools	1.34	1000	1550	58000	5	200	<0.35	■
	MC212GM30 NAT	30%玻纖/礦纖強化本色樹脂 30%glass fiber/minerals resins NAT		1.37	1250	1800	65000	7	205	<0.30	■
	MC212GM40 NAT	40%玻纖/礦纖強化本色樹脂 40%glass fiber/minerals resins NAT		1.45	1450	1800	75000	10	208	<0.30	■
	MC212GM45 NAT	45%玻纖/礦纖強化本色樹脂 45%glass fiber/minerals resins NAT		1.50	1500	2000	78000	10	208	<0.25	■
	MC212GM50 NAT	50%玻纖/礦纖強化本色樹脂 50%glass fiber/minerals resins NAT		1.60	1550	2100	80000	12	210	<0.25	■
	MC312GM25 BK	25%玻纖/礦纖強化黑色樹脂 25%glass fiber/minerals resins BK		1.34	850	1300	58000	5	202	<0.35	■
超韌耐寒級 Ultra-flexible and Cold-resistant	MC212LST NAT	耐低溫衝擊本色樹脂 good low temp./ impact resins NAT	適用於超高韌性、低溫耐衝強度要求之射出產品 用途例：帳蓬支架、旅行箱配件、運動器材 Apply to injection molding products of super tough and low temperature impact strength Used in : tent holder,suitcase fitting, Sports equipments	1.03	400	500	15000	95	50	<2.20	■ ■
	MC212LST NAT (1600磅 / Pound)	耐低溫衝擊本色樹脂 good low temp./ impact resins NAT		1.08	500	800	18000	>50	53	<1.55	■
	MC312LST BK	耐低溫衝擊黑色樹脂 good low temp./ impact resins BK		1.05	400	500	15000	60	50	<2.20	■ ■
	MC312LST BK (1300磅 / Pound)	耐低溫衝擊黑色樹脂 good low temp./ impact resins BK		—	470	700	16000	>20	53	<1.55	■
耐衝擊剛性強化級 Toughness/Glass Fiber Reinforced	MC212STG20 NAT	20%玻纖強化/增韌本色樹脂 20%glass fiber/toughened resins NAT	適用於高剛性、高韌性要求之射出產品 用途例：運動器材、電動工具外殼、溜冰鞋底座 輪椅輪框、電池盒座、紡織梭 Apply to injection molding products of high rigidity and tough Used in : sports equipments,electronic equipments case,Ski shoe material,wheelchair round frame,battery container base,textile shuttle	1.23	950	1400	45000	20	201	<0.30	■ ■
	MC212STG30 NAT	30%玻纖強化/增韌本色樹脂 30%glass fiber/toughened resins NAT		1.28	1100	1700	56000	23	201	<0.25	■ ■
	MC312STG20 BK	20%玻纖強化/增韌黑色樹脂 20%glass fiber/toughened resins BK		1.25	900	1400	53000	10	201	<0.35	■ ■
	MC312STG30 BK	30%玻纖強化/增韌黑色樹脂 30%glass fiber/toughened resins BK		1.30	1000	1600	68000	15	201	<0.25	■ ■

■ 本色樹脂可依客戶顏色需求染色
■ color-matching service for customer's need

■ 另可配合客戶特殊物性需求提供產品開發
■ the product development for customer's specific physical properties

■ 測試條件：23±2°C, 50±5% RH, 24小時

■ Test condition : 23±2 , 50±5% RH, 24hrs

尼龍-6/66 樹脂 MODIFIED PA 6/66 (POLYAMIDE-6/66 RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	MB212G33 NAT	33%玻纖強化本色樹脂 33%glass fiber resins NAT	適用於高剛性、耐熱性要求之射出產品 等級高於尼龍6超高剛性強化級 用途例：馬達外殼、鞋跟、辦公桌椅、濾油器 工業用扣帶 Apply to injection molding products of high rigidity, heat resistance is higher than PA6 glass fiber reinforced Used in : motor case, shoe heel, office furniture, oil filter, industrial used buckle	1.38	1700	2500	76000	16	215	<0.25	■ ■
	MB212G45 NAT	45%玻纖強化本色樹脂 43%glass fiber resins NAT		1.47	1800	2700	95000	20	215	<0.25	■ ■
	MB312G33 BK	33%玻纖強化黑色樹脂 33%glass fiber resins BK		1.38	1200	1800	70000	8	210	<0.25	■ ■
表面改良剛性強化級 Glass/Mineral Reinforced	MB212GM33 NAT	33%玻纖/礦纖強化本色樹脂 33%glass fiber/minerals resins NAT	適用於尺寸安定性、低翹曲性、表面平滑性、高剛性要求之射出產品 用途例：吹風機外殼、打字機筒管、照相機腳座、釣具捲線軸 Apply to injection molding products of dimensional stability, low warp, surface smoothness, high rigidity Used in : air pump case, typewriter bobbin, camera holder, fishing tackle winder	1.38	1200	2100	85000	7	210	<0.30	■ ■
	MB212GM45 NAT	45%玻纖/礦纖強化本色樹脂 45%glass fiber/minerals resins NAT		1.45	1300	2300	110000	8	210	<0.25	■ ■
	MB312GM33 BK	33%玻纖/礦纖強化黑色樹脂 33%glass fiber/minerals resins BK		1.39	950	1500	73000	6	210	<0.30	■ ■
	MB312GM45 BK	45%玻纖/礦纖強化黑色樹脂 45%glass fiber/minerals resins BK		1.48	1100	1800	100000	8	210	<0.25	■ ■
超韌耐寒級 Ultra-flexible and Cold-resistant	MB212LST NAT	耐低溫衝擊本色樹脂 good low temp./impact resins NAT	適用於超高韌性、低溫耐衝強度要求之射出產品 用途例：溜冰鞋支架、嬰兒車配件、運動器材 Apply to injection molding products of super tough and low temperature impact strength Used in : roller skates holder, baby carriage fitting, sports equipments	1.06	400	550	16000	90	50	<2.50	■ ■
	MB212LST BK	耐低溫衝擊黑色樹脂 good low temp./impact resins BK		1.06	400	550	15000	60	50	<2.50	■ ■

■ 本色樹脂可依客戶顏色需求染色
 ■ color-matching service for customer's need

■ 另可配合客戶特殊物性需求提供產品開發
 ■ the product development for customer's specific physical properties

■ 測試條件：23±2℃，50±5% RH，24小時

■ Test condition：23±2℃，50±5% RH，24hrs

尼龍-66 樹脂 MODIFIED PA 66 (POLYAMIDE-66 RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	MD212G13 NAT	13%玻纖強化本色樹脂 13%glass fiber resins NAT	適用於高剛性、高強度、耐熱性要求 之射出產品等級高於尼龍-6/66超高剛性強化級 用途例：運動器材、插頭、風扇葉片、塑膠螺釘 齒輪、腳踏車剎車碟片、滾輪齒板 螺帽	1.23	1050	1500	37000	6	230	<0.60	■ ■
	MD212G23 NAT	23%玻纖強化本色樹脂 23%glass fiber resins NAT		1.29	1300	2000	60000	10	240	<0.30	■ ■
	MD212G33 NAT	33%玻纖強化本色樹脂 33%glass fiber resins NAT		1.40	1700	2600	79000	16	245	<0.25	■ ■
	MD212G43 NAT	40%玻纖強化本色樹脂 43%glass fiber resins NAT		1.48	1900	2800	95000	16	245	<0.20	■ ■
	MD212G53 NAT	53%玻纖強化本色樹脂 53%glass fiber resins NAT	Apply to injection molding products of high rigidity,high strength,heat resistance is higher than PA6/6,6 glass fiber reinforced Used in : sports equipments,plug,Air-conditioning/ fan louver,plastic screw,gear,bicycle braking parts,screw nut	1.59	2100	3200	110000	19	255	<0.20	■ ■
	MD212G23 BK	23%玻纖強化黑色樹脂 23%glass fiber resins BK		1.28	1100	1600	51000	5	230	<0.35	■ ■
	MD212G33 BK	33%玻纖強化黑色樹脂 33%glass fiber resins BK		1.33	1100	1900	74000	9	240	<0.25	■ ■
	MD212G43 BK	43%玻纖強化黑色樹脂 43%glass fiber resins BK		1.46	1400	2000	89000	10	240	<0.25	■ ■
超韌耐寒級 Ultra-flexible and Cold-resistant	MD212LST NAT	耐低溫衝擊本色樹脂 good low temp./impact resins NAT	適用於超高韌性、低溫耐衝擊強度要求之射出產品 用途例：雪鞋鞋底、網球拍條釘 Apply to injection molding products of super tough and low temperature impact strength Used in : ski shoe material	1.06	450	600	18000	95	60	<3.00	■ ■
	MD312LST BK	耐低溫衝擊黑色樹脂 good low temp./impact resins BK		1.03	400	550	16000	60	60	<3.00	■ ■
耐衝擊/剛性強化級 Toughness/ Glass Fiber Reinforced	MD212STG18 NAT	18%玻纖強化/增韌本色樹脂 18%glass fiber/toughened resins NAT	適用於高剛性、高韌性要求之射出產品 用途例：電動工具外殼、溜冰鞋底座、輪椅輪框 Apply to injection molding products of high rigidity and high tough Used in : electronic equipments case, roller skates base, wheelchair round frame	1.17	1000	1500	45000	18	215	<0.35	■ ■
	MD212STG33 NAT	33%玻纖強化/增韌本色樹脂 33%glass fiber/toughened resins NAT		1.30	1400	2000	75000	22	240	<0.30	■ ■
耐磨級 Wear-resisting	MD212LA10	添加耐磨成分銀灰色樹脂 wearing-resisting resins	適用於耐磨要求之射出產品 用途例：滑輪、軸承套 Apply to injection molding products of wear-resisting Used in : pulley, bearing wrap	1.14	750	1200	32000	4	70	<2.00	■
	MD312LA10	添加耐磨成分銀灰色樹脂 wearing-resisting resins		1.14	700	1100	30000	4	70	<2.00	■
剛性強化級 Flame Retardant/ Glass Fiber Reinforced	MD212LB30 NAT (Halogen Contained)	有鹵阻燃改質/30%剛性本色樹脂 flame retardant/30%glass fiber resins NAT UL94V-0	適用於高耐燃性、強度要求之射出產品 用途例：連接器、電氣開關殼座、散熱風扇、 電動工具、工具機馬達殼 Apply to injection molding products of high flame-resistance, strength Used in : connector, electric appliance switch, radiation ventilator, electronic equipments, machine motor shell	1.55	1350	2100	90000	7	240	<0.35	■
	MD312LB30 BK (Halogen Contained)	有鹵阻燃改質/30%剛性黑色樹脂 flame retardant/30%glass fiber resins NAT UL94V-0		1.55	1100	1700	75000	5	220	<0.35	■
防火級 Flame Retardant	MD212FH05 (Halogen Free)	無鹵阻燃劑改質本色 本色樹脂UL94 V-0 flame retardant resins NAT UL94V-0	適用於高耐燃性、強度要求之射出產品 用途例：連接器、電氣開關殼座、散熱風扇 電動工具、工具機馬達殼 Apply to injection molding products of high flame-resistance, strength Used in : connector, electric appliance switch, radiation ventilator, electronic equipments, machine motor shell	1.15	700	1100	30000	3	110	<2.00	■ ■
防火剛性強化無鹵級 Flame Retardant/ Glass Fiber Reinforced	MD212FH35 (Halogen Free)	無鹵阻燃劑改質/30%玻纖強化 本色樹脂UL94 V-0 flame retardant/30%glass fiber resins NAT UL94V-0		1.45	1200	1900	80000	8	230	<0.30	■ ■

■ 本色樹脂可依客戶顏色需求染色
■ color-matching service for customer's need

■ 另可配合客戶特殊物性需求提供產品開發
■ the product development for customer's specific physical properties

■ 測試條件：23±2°C, 50±5% RH, 24小時

■ Test condition : 23±2 , 50±5% RH, 24hrs

PP 複合工程塑膠 MODIFIED PP (POLYPROPYLENE RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	PP212G20 NAT	20%玻纖強化本色樹脂 20%glass fiber resins NAT	適用於高剛性、尺寸安定性之射出產品 用途例：化工廠泵浦外殼、紡織紗管、汽車風扇風扇座、自行車、打氣筒、排風扇等 Apply to injection molding products of dimensional stability and high rigidity Used in : pump case, spin tube, morot fan bicycle, inflator, air pump components	1.04	600	850	34000	8	150	<0.40	■ ■
	PP212G30 NAT	30%玻纖強化本色樹脂 30%glass fiber resins NAT		1.14	700	1000	40000	10	155	<0.30	■ ■
	PP212G40 NAT	40%玻纖強化本色樹脂 40%glass fiber resins NAT		1.16	800	1200	50000	11	160	<0.30	■ ■
礦纖改性級 Modified Glass/ Mineral Reinforced	PP212GM20 NAT	20%玻纖/礦纖本色樹脂 20%glass fiber/minerals resins NAT	適用於耐熱、尺寸安定性、表面佳之射出產品 用途例：汽車儀義板座、門板、內部飾板、燈罩電飯堡、咖啡爐、刮鬍刀等之外殼 Apply to injection molding products of heat-resistant, dimensional stability, surface smoothness Used in : motor meter base, door plank, lampshade automatic rice cooker, coffee pot, razor case	1.07	370	550	20000	3	130	<1.00	■ ■
	PP212GM30 NAT	30%玻纖/礦纖本色樹脂 30%glass fiber/minerals resins NAT		1.15	350	600	25000	4	130	<0.90	■ ■
	PP212GM40 NAT	40%玻纖/礦纖本色樹脂 40%glass fiber/minerals resins NAT		1.25	340	650	30000	3	135	<0.80	■ ■
表面改良耐衝強化級 Impacted Reinforced	PP212MS20 NAT	20%礦纖耐衝本色樹脂 20%mineral/impacted resins NAT	用途例： 汽車儀義板座、門板、內部飾板、燈罩家電產品零件 Apply to injection molding products of high rigidity and tough Used in : motor meter base, door plank, lampshade household appliances	1.04	290	500	18000	25	110	<1.16	■
	PP212MS30 NAT	30%礦纖耐衝本色樹脂 30%mineral/impacted resins NAT		1.11	290	510	23000	15	120	<1.00	■
	PP212MS40 NAT	40%礦纖耐衝本色樹脂 40%mineral/impacted resins NAT		1.22	270	510	27000	10	120	<0.88	■
表面改良剛性強化級 Toughness Reinforced	PP212MH20 NAT	20%礦纖強化本色樹脂 20%mineral/toughened resins NAT	用途例： 汽車儀義板座、家電外殼、內部飾板、燈罩 Apply to injection molding products of dimensional stability, surface smoothness and high rigidity Used in : motor meter base, door plank, lampshade household appliances case	1.04	320	580	24000	5	130	<1.26	■
	PP212MH30 NAT	30%礦纖強化本色樹脂 30%mineral/toughened resins NAT		1.13	330	550	26000	6	130	<1.14	■
	PP212MH40 NAT	40%礦纖強化本色樹脂 40%mineral/toughened resins NAT		1.24	280	500	30000	7	130	<1.09	■
玻璃微珠改性級 Modified Glass Particles	PP212GB20 NAT	20%玻纖珠改性 20% modified glass particles	用途例： 三度空間強化、高抗壓性、表面光澤 可做為家電外殼與洗衣機、洗淨槽等產品 Apple to injection molding products of high resistance, surface shine and three-dimensional space of strengthened Used in : household appliances case, washing machine	1.03	320	550	18000	4	120	<1.00	■ ■
	PP212GB30 NAT	30%玻纖珠改性 30% modified glass particles		1.11	330	600	23000	3	120	<1.00	■ ■
	PP212GB40 NAT	40%玻纖珠改性 40% modified glass particles		1.18	330	650	25000	3	125	<1.00	■ ■
阻燃級 Flame Retardant (Halogen Contained)	PP212LB NAT (Halogen Contained)	UL94 V-0，防火級 flame retardant resins NAT UL94V-0	用途例： 電熱器、電暖器、電器絕緣板等產品	1.31	280	600	25000	3	120	<1.00	■ ■
防火級 Flame Retardant (Halogen Free)	PP212FH05 NAT (Halogen Free)	無鹵阻燃劑改質本色 UL94 V-0，防火級 flame retardant resins NAT UL94V-0	Used in : electric heater, electric radiator electric equipment for insulation plank	1.01	290	550	18000	4	120	<1.00	■

PBT 聚對苯二甲酸丁二酯樹脂 MODIFIED PBT (POLYBUTYLENE TERPHTHALATE RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	PBT819G20 NAT	20%玻纖強化本色樹脂 20%glass fiber resins NAT	用途例：適用於汽車、電子、電氣用途、 如汽車分電盤、省電燈泡燈座、 車門把手、泵浦外殼等 Used in：automobile,electron,electric light bulb case,car door handle pump casing	1.49	1100	1800	66000	6	205	<0.5	■ ■
	PBT819G30 NAT	30%玻纖強化本色樹脂 30%glass fiber resins NAT		1.53	1300	2000	90000	8	210	<0.4	■ ■
剛性強化阻燃級 Glass Fiber Reinforced/ Flame Retardant	PBT819B15 NAT	15%玻纖/強化阻燃本色樹脂 flame retardant/15%glass fiber	用途例：適用於線圈骨架、開關繼電器、 車燈底座、連接器、端子台、 電腦風扇等用途 Used in：coil frame,electric appliance switch connector,terminal,computer fan	1.58	1000	1500	63000	6	205	<0.5	■ ■
	PBT819B30 NAT	30%玻纖/強化阻燃本色樹脂 flame retardant/30%glass fiber		1.73	1200	1800	90000	8	210	<0.3	■ ■
經濟型 Glass Fiber	PBT312G20 BK	20%玻纖強化黑色 20%glass fiber resins BK	用途例：適用於汽車、電子、電氣用途、 如汽車分電盤、省電燈泡燈座、 車門把手、泵浦外殼等 Used in：automobile,electron,electric light bulb case,car door handle pump casing	1.49	900	1400	55000	4	205	<0.5	■ ■
	PBT312G30 BK	30%玻纖強化黑色 30%glass fiber resins BK		1.53	1000	1500	70000	5	210	<0.4	■ ■
阻燃經濟型 Flame Retardant/ Glass Fiber	PBT312B15 BK	15%玻纖強化阻燃黑色 flame retardant/15%glass fiber	用途例：適用於線圈骨架、開關繼電器、 車燈底座、連接器、端子台、 電腦風扇等用途 Used in：coil frame,electric appliance switch connector,terminal,computer fan	1.59	800	1200	52000	4	205	<0.5	■
	PBT312B30 BK	30%玻纖強化阻燃黑色 flame retardant/30%glass fiber		1.75	1000	1400	70000	5	210	<0.3	■ ■

■ 本色樹脂可依客戶顏色需求染色
 ■ color-matching service for customer's need

■ 另可配合客戶特殊物性需求提供產品開發
 ■ the product development for customer's specific physical properties

■ 測試條件：23±2℃，50±5% RH，24小時

■ Test condition：23±2，50±5% RH，24hrs

PC 聚碳酸酯 MODIFIED PC (POLYCARBONATE RESIN)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	PC212G10 NAT	10%玻纖強化本色樹脂 10%glass fiber resins NAT	用途例：家電、汽機車燈、眼鏡、 電動工具外殼、光電器材零件、 影印機內零件 Used in : household appliances, motor lamp, electronic equipments case, photoelectricity equipment, photostat part	1.26	840	1400	39000	10	140	<0.15	■
	PC212G20 NAT	20%玻纖強化本色樹脂 20%glass fiber resins NAT		1.34	1200	1800	59000	13	143	<0.13	■
	PC212G30 NAT	30%玻纖強化本色樹脂 30%glass fiber resins NAT		1.41	1400	1900	73000	13	145	<0.11	■

■本色樹脂可依客戶顏色需求染色
■color-matching service for customer's need

■另可配合客戶特殊物性需求提供產品開發
■the product development for customer's specific physical properties

■測試條件：23±2°C, 50±5% RH, 24小時

■Test condition : 23±2 , 50±5% RH, 24hrs

導電尼龍 CONDUCTIVE PLOYAMIDE-6 RESIN

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity	抗伸強度 Tensile Str.at Break	抗折強度 Flexural Strength	抗折模數 Modulus	衝擊強度 Izod Impact	體積電阻 Volume resistance	表面電阻 Surface resistance	供應商 Supplier
				ASTM D792	ASTM D638 kg/cm ²	ASTM D790 kg/cm ²	ASTM D790 kg/cm ²	ASTM D256 kg-cm/cm	Ω	Ω/□	■台中Taichung ■東莞Dongguan
導電/抗靜電級 Conductive/Anti-static	MC212NC05	奈米碳管導電複合材 carbon nanotube conductive compostie	用途例：封裝包材、IC及LCD托盤、 電子通訊產品外殼、 電器產品EMI遮罩外殼 Used in：packaging,IC&LDC tray, electronic communication products case, electric equipments of EMI shell	—	640	1200	25000	6	10 ³ ~10 ⁴	10 ²	■

- 提供從10³~10⁹ Ω/□之表面電阻範圍的抗靜電/導電塑膠，
- 結合耐磨、結構補強或防火阻燃等可配合客戶特殊物性需求提供產品開發
- from 10³ ~ 10⁹ Ω/ surface resistance scope anti-static electricity/electric conduction products
- wear-resisting,flame-retardant etc. the product development for customer's specific physical properties

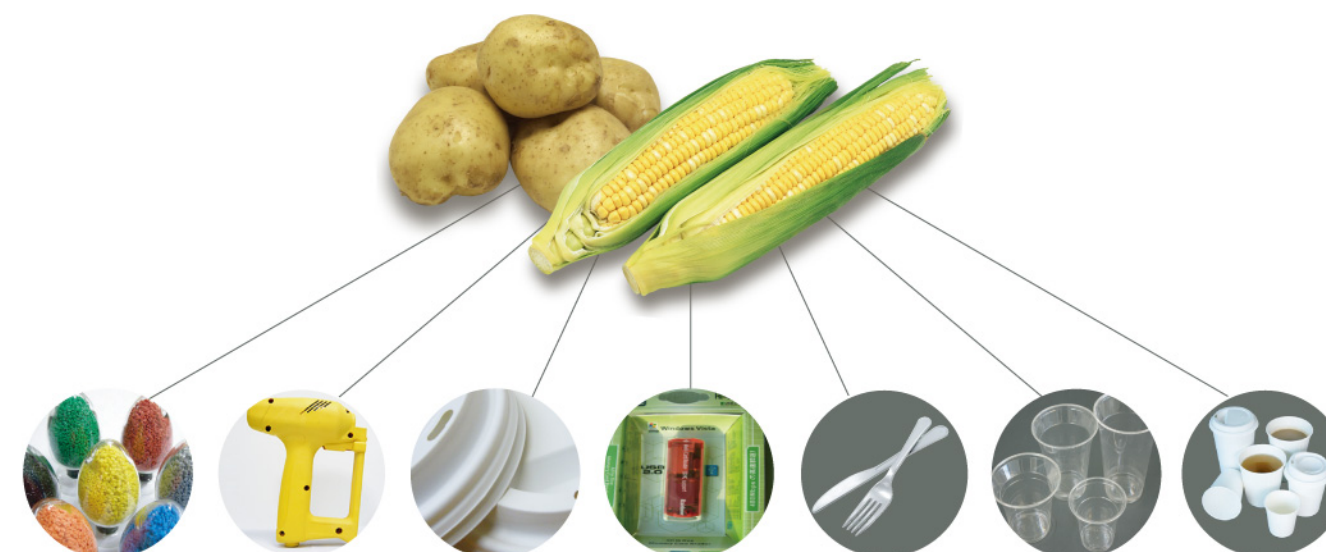
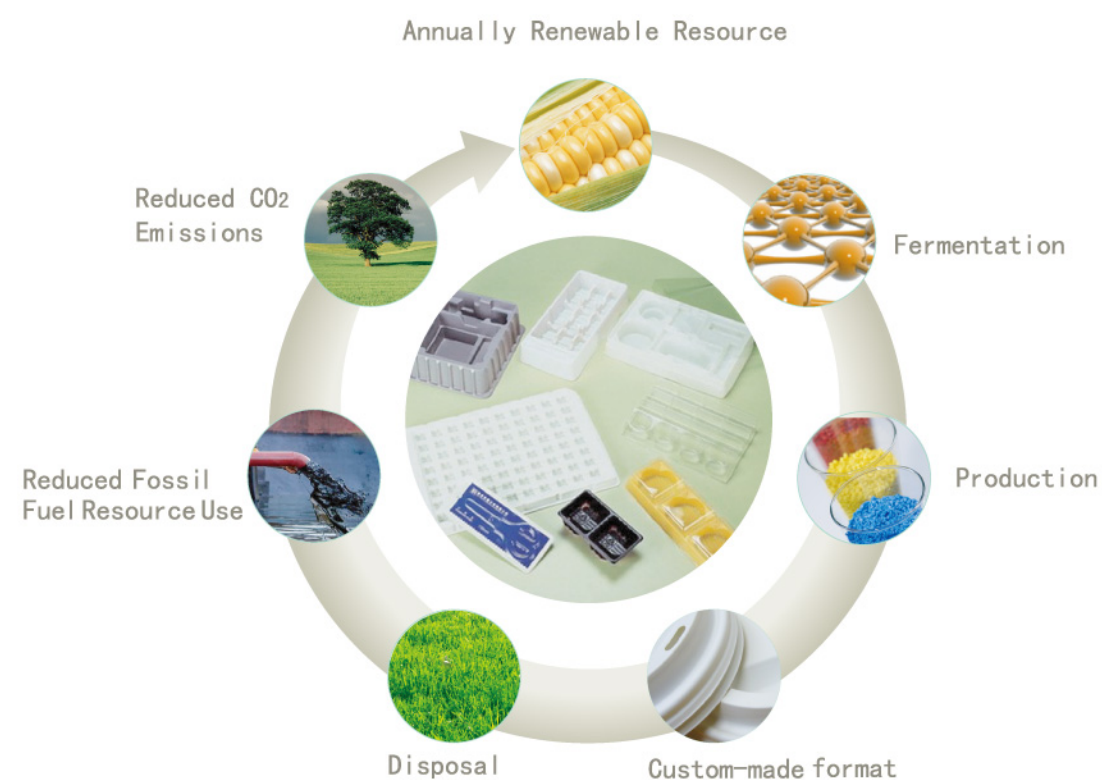
■測試條件：23±2℃，50±5% RH，24小時

■Test condition：23±2，50±5% RH，24hrs

PLA 聚乳酸 (POLY LACTIC ACID)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kgf/cm ²	抗折強度 Flexural Strength ASTM D790 kgf/cm ²	抗折模數 Modulus ASTM D790 kgf/cm ²	衝擊強度(缺口) Izod Impact ASTM D256 J/m	熱變形溫度 H.D.T ASTM D648 (4.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
生分解材質 Biodegradable products	PLA212HT31	再生玉米、馬鈴薯等無毒害植物原料 using 100% renewable corns, potatoes and other plants which are non-toxic to the environment	用途例：各樣之生分解食品包裝材、電子包裝材、一般射出、OA用品、農業資材、餐具、熱杯、杯蓋、冷杯等產品 Used in : various biodegradable packaging food, electronic, agricultural packaging, cutleries, hot cups, lids, cold cups	1.28	640	1340	77000	65	103	—	■



■本色樹脂可依客戶顏色需求染色
■color-matching service for customer's need

■另可配合客戶特殊物性需求提供產品開發
■the product development for customer's specific physical properties

■測試條件：23±2°C, 50±5% RH, 24小時

■Test condition : 23±2 , 50±5% RH, 24hrs

ABS · ABS/PBT · PA/ABS · PC · PC/ABS 改性樹脂 MODIFIED RESIN (ABS · ABS/PBT · PA/ABS · PC · PC/ABS)

物性表 Physical Properties Data Sheet

	規格/品名 Grade/Part No.	材質說明 Models	性能/用途 Speification	比重 Specific Gravity ASTM D792	抗伸強度 Tensile Str.at Break ASTM D638 kg/cm ²	抗折強度 Flexural Strength ASTM D790 kg/cm ²	抗折模數 Modulus ASTM D790 kg/cm ²	衝擊強度 Izod Impact ASTM D256 kg-cm/cm	熱變形溫度 H.D.T ASTM D648 (18.6kg /cm ²) °C	收縮率 Shrinkage ASTM D955 %	供應商 Supplier ■台中Taichung ■東莞Dongguan
剛性強化級 Glass Fiber Reinforced	ABSG15 NAT	15%玻纖強化本色樹脂 15%glass fiber NAT resins	適用於高剛性射出產品 用途例：風扇葉輪、電鍍把手	1.16	800	1200	45000	9	96	<0.3	■
	ABSG20 NAT	20%玻纖強化本色樹脂 20%glass fiber NAT resins	Apply to injection molding products of high rigidity Use in : fan wheel,electroplate handle	1.21	850	1250	55000	8	99	<0.3	■
合金剛性強化級 Glass Fiber Reinforced Alloy/	ABS/PBTG15 NAT	15%玻纖/合金強化本色樹脂 15%glass fiber/alloy resins NAT	適用於高強度射出產品 用途例：汽車零件、光學儀器零件	1.21	870	1280	43000	7	135	<0.4	■
	ABS/PBTG20 NAT	20%玻纖/合金強化本色樹脂 20%glass fiber/alloy resins NAT	Apply to injection molding products of high rigidity Use in : automobile parts,optical instrument parts	1.30	950	1350	55000	8	140	<0.4	■
合金改性 Alloy	PA/ABS 增韌級	PA/ABS 合金改性 Alloy/PA/ABS	合金改性 用途例：電子、汽車、體育 Use in : electronic,automobile, sports equipments	1.10	650	1000	21000	6	65	0.5-0.7	■
防火級 Reinforced/ Flame Retardant	PC 無鹵阻燃級 (Halogen Free)	PC/強化本色樹脂 UL94 V-0 flame retardant resins NAT UL94V-0	適用於高剛性射出產品 用途例：高頻頭骨架、電子接插件 Apply to injection molding products of high rigidity Use in : Low Noise Block frame, electron socket	1.30	1100	-	55000	18	148	<0.4	■
合金改性防火級 Alloy/Flame Retardan	PC/ABS 無鹵阻燃級 (Halogen Free)	合金阻燃改性 UL94 V-0 flame retardant resins NAT UL94V-0	適用於高耐燃性射出產品 用途例：家電薄壁制件、汽車儀表板骨架 Apply to injection molding products of high flame-resistance Use in : household appliances of thin wall parts, dashboard frame	1.15	650	1200	26000	45	88	<0.3	■

■本色樹脂可依客戶顏色需求染色
■color-matching service for customer's need

■另可配合客戶特殊物性需求提供產品開發
■the product development for customer's specific physical properties

■測試條件：23±2°C, 50±5% RH, 24小時

■Test condition : 23±2 , 50±5% RH, 24hrs

品質認證 Certified Quality

通過 UL 認證之產品 Product passed UL authentication

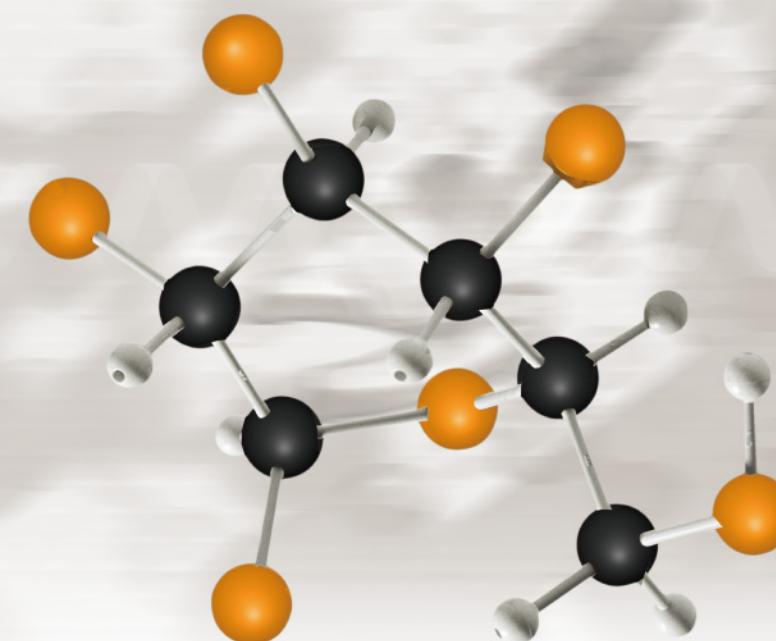
尼龍-6 (PA 6)	尼龍-6/66 (PA6/66)	尼龍-66 (PA 66)	PBT
MC212G20 MC212G30 MC212G40 MC212G45 MC212G50 MC212FH05 MC212FH35	MB212G33 MB212G45	MD212LB30 MD212FH05 MD212FH35	PBT819G20 PBT819G30 PBT819B15 PBT819B30

Material Dsg	Color	Min. Thk mm	Flame Class	H W	H A	RTI Elec	RTI Mech	H V	D 4	C T
Polyamid 6(PA6),conductive,furnished as pellets.										
MC260A15	ALL	0.87-0.95	V-0	-	-	65	65	65		
Polyamid 6(PA6),with flame retardant and glass fiber reinforced,furnished as pellets.										
MC212FH(XX)	ALL	1.5	V-0	-	-	65	65	65		
		3.0	V-0	-	-	65	65	65		
Polyamid 6(PA6),furnished as pellets.										
MC202G +	ALL	0.76-0.84	HB	-	-	65	65	65		
MC212W40	ALL	1.02-1.1	HB	-	-	65	65	65		
MC212G +	ALL	0.76-0.84	HB	-	-	65	65	65		
Polyamid 66(PA66),glass reinforced,furnished as pellets.										
MD212G(X)	ALL	1.5	V-0	-	-	65	65	65		
		3.0	V-0	-	-	65	65	65		
Polyamid 66(PA66),furnished as pellets.										
MD212LB30	ALL	3.6	V-0	-	-	65	65	65		
Polyamid 66 (PA66),with flame retardant and glass fiber reinforced,furnished as pellets.										
MD212FH(XX)	ALL	1.5	V-0	-	-	65	65	65		
	ALL	3.0	V-0	-	-	65	65	65		
Polybutylene Terephthalate (PBT), furnished as pellets.										
PBT819B15#	ALL	0.89	V-0	-	-	75	75	75		
PBT819B30#	ALL	0.81	V-0	-	-	75	75	75		
PBT819B45#	ALL	0.89	V-0	-	-	75	75	75		
PBT819G15	ALL	0.81	HB	-	-	75	75	75		
PBT819G20	ALL	0.81	HB	-	-	75	75	75		
PBT819G30	ALL	0.81	HB	-	-	75	75	75		
PBT819G35	ALL	0.81	HB	-	-	75	75	75		

■說明 Explanation: + : 5%~40%GF @ : 10%~45%GF XX : 0%~30%GF

符合 RoHS 規範之產品
Product passed RoHS

尼龍-6 (PA 6)	尼龍-6/66 (PA6/66)	尼龍-66 (PA66)
MC212G20 NAT MC212G30 NAT MC212G40 NAT MC212G45 NAT MC212G50 NAT MC212LST NAT MC212STG20 NAT MC212STG30 NAT	MB212G33 NAT MB212G45 NAT MB212GM33 NAT MB212GM45 NAT MB212LST NAT	MD212G13 NAT MD212G23 NAT MD212G33 NAT MD212G43 NAT MD212G53 NAT MD212LST NAT MD212STG18 NAT MD212STG33 NAT MD212LA10 MD212LB30 NAT



■說明 : PP/PBT 相關產品亦能符合 RoHS 規範