

PET AND ENGINEERING PLASTICS



- Polyethylene terephthalate chips. Applications can be categorized into SD, BR, FD, CD, wide variety of products, Exceptional functional products and any customized production. Can be used in draw textured yarn plant and variety of application.
- Polyethylene terephthalate. The Polyester Chip Bottle Grade we represent is broadly used in the application of PET bottle (Mineral Water Bottle, Aseptic-Filling Bottle, Carbonated Soft Drink Bottle, Edible Oil and Soy Souse Bottle), PET Sheet (A-PET), PET shrinkable film, Food Utensils Containers and Packages, and etc.

CATEGORY	SPECIFICATION
For Textiles	BR, SD, FD / CATIONIC DYEABLE(CD) / Copolyester
Bottle Grade IV=0.76, 0.80, 0.84, 0.88	Mineral Water Bottle / Aseptic-Filling Bottle / PET Sheet(A-PET) Jar / Food Container / Oil and Condiment Bottle / Carbonated Soft Drink Bottle

資料來源：台南紡織

PBT

GRADE	CHARACTERISTICS	APPLICATION
GENERAL PURPOSE 1100	Low viscosity, I.V. value 0.85 Meet FDA requirement	Extrusion, spinning, injection molding for thick or small parts.
GLASS-FIBER REINFORCED 1210G3	15% glass fiber reinforced, with high rigidity, high HDT and excellent electrical properties	Injection molding for automobile, electrical and electronic parts. For example, tube lighter base, lamp socket, head lamp housing, speaker housing, distributor cap and adaptor, door handle, fan housing, switch, reflector, back mirror stay, carburettor, electrical junction box, pump housing, etc.
GLASS-FIBER REINFORCED 1210G6	30% glass fiber reinforced, with high rigidity, high HDT and excellent electrical properties	
FLAME RETARDED, UNREINFORCED 1300	UL 94V-0, General grade	Connector, socket, switch, terminal block, etc.
FLAME RETARDED, GLASS-FIBER REINFORCED 1403G3	UL 94V-0, 15% glass-fiber reinforced with higher HDT	For electrical/electronic applications with flame retardant, excellent mechanical and electrical properties, good dimensional stability and high heat resistance. For example, bobbin, switch, socket, relay block, capacitor housing, terminal block, connector, lamp socket, lamp housing, OA fan frame and impeller, glue gun housing, heater fan housing, breaker cover, etc.
FLAME RETARDED, GLASS-FIBER REINFORCED 1403G6	UL 94V-0, 30% glass-fiber reinforced with higher HDT	
FLAME RETARDED, GLASS-FIBER REINFORCED 1410G3	UL 94V, 3.2mm V-0, 15%, glass-fiber reinforced	
FLAME RETARDED, GLASS-FIBER REINFORCED 1410G6	UL 94V, 3.2mm V-0, 30%, glass-fiber reinforced	
FLAME RETARDED, GLASS-FIBER REINFORCED 140PG3	UL 94 V-0, Nonhalogenated, 15% glass-fiber reinforced	
FLAME RETARDED, GLASS-FIBER REINFORCED 140PG6	UL 94 V-0, Nonhalogenated, 30% glass-fiber reinforced	
FLAME RETARDED, GLASS-FIBER REINFORCED 1408G6	UL 94, 0.4mm V-0, 30%, glass-fiber reinforced	

資料來源：南亞

NYLON 6

GRADE	CHARACTERISTICS	APPLICATION
GENERAL PURPOSE 2100	Low viscosity	Extrusion, spinning, injection molding for thick or small parts.
GENERAL PURPOSE 2110	Standard type	For general purpose injection molding applications which require high mechanical strength. For example, gear, housing, socket for electrical goods, etc.
GLASS-FIBER REINFORCED 2210G3	15% glass-fiber reinforced with high stiffness, high HDT and high mechanical strength	For high mechanical strength required applications. For example, speed metering housing, head of hair dryer, etc.
GLASS-FIBER REINFORCED 2210G6	30% glass-fiber reinforced with high stiffness, high HDT and high mechanical strength	For high mechanical strength required applications. For example, brake lever of bicycle, breaker, yoke, hand tools housing, etc.
GLASS-FIBER REINFORCED 2210G9	45% glass-fiber reinforced with high stiffness, high HDT and high mechanical strength	For high mechanical strength required applications. For example, fishing reel, racket frame, etc.
GLASS-FIBER REINFORCED 2212G4	20% glass-fiber reinforced with high stiffness and high toughness	For both high stiffness and toughness required applications. For example, brake lever of bicycle, road roller frame, wheel frame, etc.
MINERAL REINFORCED 2200M6	30% mineral reinforced	For low warpage, good surface required applications. For example, heater housing, fan housing, etc.
FLAME RETARDED, GLASS-FIBER REINFORCED 2310	UL 94 V-0, Nonhalogenated	Connector, relay block.
SUPER TOUGHNESS 2512	Outstanding impact strength, fast cycle	For high impact strength applications. For example, brake lever of bicycle, toe-clip, sporting goods, etc.

資料來源：南亞

PP

GRADE	CHARACTERISTICS	APPLICATION
THERMAL RESISTANCE 3117	High mechanical strength, good surface heat resistance, FDA.	Electrical housing.
GLASS-FIBER REINFORCED 3210G4	20% glass fiber reinforced, with high mechanical strength, low shrinkage, and heat, creep resistance	Pump and controller housing, household electrical and electronic parts. For example, fan housing and blade, pump housing, valve frame, sockets, etc.
GLASS-FIBER REINFORCED 3210G6	30% glass fiber reinforced, with high mechanical strength, low shrinkage, and heat, creep resistance	Yarn dye tube, pump and controller housing, household electrical and electronic parts, For example, fan housing and blade, pump housing, valve frame, sockets, etc.
MINERALS REINFORCED 3210T4	Talc reinforced, high mechanical strength, same Biaxial shrinkage, good surface heat resistance, and stable dimensions	Automotive parts, for example, lamp housing, conditioner fan, air-duct, distributor cap, Instrument panel, parts housing, trims, etc. Household electrical and electronic parts.
MINERALS REINFORCED 3210T6		For example, lamp housing and base, machine housing, trims, etc.
MINERALS REINFORCED 3210T8		
MINERALS REINFORCED 3219M3	15% minerals reinforced	Electrical housing.
MINERALS REINFORCED 3219M5	25% minerals reinforced FDA glossy, low warpage	Electrical housing.
FLAME RETARDED, UNREINFORCED 3307	UL 94 V-0, Low specific gravity	Christmas lamp parts.
FLAME RETARDED, UNREINFORCED 3317	UL 94 V-0, General grade	Flame retarded demand for household and automotive parts. For example, insulator.
FLAME RETARDED, GLASS-FIBER REINFORCED 3410G6	UL 94 V-0, 30% glass-fiber reinforce	Electrical housing.

資料來源：南亞

PET

GRADE	CHARACTERISTICS	APPLICATION
GLASS-FIBER REINFORCED 4210G3	15% glass fiber reinforced, with high strength, good balance on rigidity and impact strength.	Relay base, vacuum pump housing, car louver frame, ignition parts, gear, carburetor parts, lamp base, antenna case, etc.
GLASS-FIBER REINFORCED 4210G6	30% glass fiber reinforced, with high strength, good balance on rigidity and impact strength.	
FLAME RETARDED, GLASS-FIBER REINFORCED 4410G3	UL 94V-0, Non-blooming 15% glass-fiber/ mineral reinforced, with high HDT.	For electrical/electronic and automobile applications. For example, connector, bobbin, pump housing, sandwich toaster, iron plate, lamp housing, diesel filter, glue gun housing, car distributor body, head lamp housing, ignition parts, carburetor body, etc.
FLAME RETARDED, GLASS-FIBER REINFORCED 4410G6	UL 94V-0, Non-blooming 30% glass-fiber/ mineral reinforced, with high HDT.	

資料來源：南亞

PC

GRADE	CHARACTERISTICS	APPLICATION
GLASS-FIBER REINFORCED 5210G2	10% glass fiber reinforced	Housing, case and base for electronics. For example, power tools, power supply, etc. Camera shaft, valve frame, sockets, etc.
GLASS-FIBER REINFORCED 5210G4	20% glass fiber reinforced	
GLASS-FIBER REINFORCED 5210G6	30% glass fiber reinforced	
FLAME RETARDED, UNREINFORCED 5310	UL 94 V-0	Frame retarded demand for household and electronics parts. For example, lamp base.
FLAME RETARDED, UNREINFORCED 531P	UL 94 V-0, Nonhalogenated	Frame retarded demand for household and electronics parts. For example, lamp base.
FLAME REGARDED, GLASS-FIBER REINFORCED 540PG2	10% glass fiber reinforced, UL 94 V-0, Nonhalogenated	Housing, case, and parts for electronics. Also need UL 94 V-0. For example, power tools, power supply, printer, optics and OA machine, etc.
FLAME REGARDED, GLASS-FIBER REINFORCED 540PG4	20% glass fiber reinforced, UL 94 V-0, Nonhalogenated	
FLAME REGARDED, GLASS-FIBER REINFORCED 5400G2	10% glass fiber reinforced, UL 94 V-0	
FLAME REGARDED, GLASS-FIBER REINFORCED 5400G4	20% glass fiber reinforced, UL 94 V-0	
FLAME REGARDED, GLASS-FIBER REINFORCED 5400G6	30% glass fiber reinforced, UL 94 V-0	
PC ALLOY 5502	PC/PBT alloy, Outstanding impact strength, low temperature impact.	
PC ALLOY 5512	PC/PET alloy, Outstanding impact strength, low temperature impact.	
PC ALLOY 5612	PC/ABS alloy, Outstanding impact strength.	Electrical housing.
PC ALLOY 571P	PC/ABS alloy, Outstanding impact strength UL 94 V-0, Nonhalogenated	Electrical housing.

資料來源：南亞

NYLON 6/6

GRADE	CHARACTERISTICS	APPLICATION
GLASS-FIBER REINFORCED 6210G3	15% glass-fiber reinforced	For high mechanical strength required applications. For example, breaker, bobbin, case of electrical equipment, etc.
GLASS-FIBER REINFORCED 6210GC	33% glass-fiber reinforced	
GLASS-FIBER REINFORCED 6212G3	15% glass-fiber reinforced with high stiffness and high toughness	For both high stiffness and toughness required applications. For example, road roller frame, wheel frame, etc.
GLASS-FIBER REINFORCED 6212GC	33% glass-fiber reinforced with high stiffness and high toughness	
MINERAL REINFORCED 6210M5	25% mineral reinforced	For low warpage, good surface required applications. For example, housing of heater or fog light, wheel cover, etc.
FLAME RETARDED, UNREINFORCED 6310	UL 94 V-0, Nonhalogenated	For electrical/ electronic applications. For example, terminal block, connector, etc.
FLAME RETARDED, GLASS-FIBER UNREINFORCED 6410G3	15% glass-fiber reinforced, UL 94V-0	For electrical/ electronic applications. For example, terminal block, connector, breaker, relay, etc.
FLAME RETARDED, GLASS-FIBER UNREINFORCED 6410G5	25% glass-fiber reinforced, UL 94V-0	
FLAME RETARDED, GLASS-FIBER UNREINFORCED 640PG3	15% glass-fiber reinforced, UL 94 V-0, Nonhalogenated	
FLAME RETARDED, GLASS-FIBER UNREINFORCED 640PG5	25% glass-fiber reinforced, UL 94 V-0, Nonhalogenated	
SUPER TOUGHNESS 6512	High impact resistance	

資料來源：南亞

PVC

GRADE (Test Method)	H-58	H-61	H-66	H-73	H-80
K-value (ISO 1628-2)	57-59	60-62	65-67	72-74	79-81
Degree of Polymerization	700±50	800±50	1000±50	1350±50	1800±100
Bulk Density (g/cc) (ISO 60)	0.57±0.04	0.57±0.04	0.54±0.04	0.51±0.04	0.49±0.04
Particle Size (45 mesh pass %) (Honeywell SRA-150)	≥ 99	≥ 99	≥ 99	≥ 99	≥ 99
Volatiles (%) (ISO 1269)	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3
Residual VCM (ppm) (ISO 6401)	< 1	< 1	< 1	< 1	< 1
Application	Injection Moulding (Fitting), Blowing Moulding (Bottle).	Injection Moulding (Pipe Fitting), Hollow-vacuum Forming (Bottle Blowing), Rigid Film, Shrinkable Film.	Soft and Semi-rigid Product For General Purpose (PVC Film, Sheet, Beach Chair, Venetian Blind), Rigid Pipe, Hose, Wire and Cable Insulation.	High Impact Flexible Products (PVC Leather, Film, Furniture, Shoes), High Impact Sheet, High Voltage Wire and Cable Insulation.	High Impact Flexible Products (PVC Leather, Film, Furniture, Shoes), High Impact Sheet, High Voltage Wire and Cable Insulation.

資料來源：華夏海灣

PET

ITEM	CATEGORY	SPECIFICATION
Polyethylene terephthalate chips. Applications can be categorized into SD, BR, FD, CD, wide variety of products, Exceptional functional products and any customized production. Can be used draw textured yarn plant and variety of application.	For Textiles	BR · SD · FD
		CATIONIC DYEABLE (CD)
		Copolyester
Polyethylene terephthalate. Nanlon Polyester Chip Bottle Grade is broadly used in the application of PET bottle (Mineral Water Bottle, Aseptic-Filling Bottle, Carbonated Soft Drink Bottle, Edible Oil and Soy Souse Bottle), PET Sheet (A- PET), PET shrinkable film, Food Utensils Containers and Packages, and etc.	Bottle Grade IV = 0.76, 0.80, 0.84, 0.88	Mineral Water Bottle
		Aseptic-Filling Bottle
		PET Sheet (A-PET)
		Jars
		Food Containers
		Edible Oil and Soy Sauce Bottle
Carbonated Soft Drink Bottle		

資料來源：台南紡織

品名 GRADE	基本物性 BASIC PROPERTY	熔融指數 MELT INDEX	密度 Density	熔點 Melting Point	拉力降伏強度 Tensile Strength at yield	拉力斷裂強度 Tensile Strength at break	斷裂伸長率 Elongation at break	抗撕裂性 Tear Resistance	落球衝擊強度 Dart drop test	艾氏衝擊強度 Izod Impact Strength	用途 Application
	單位 Unit	g/10 mins	g/cm ³	°C	kg/cm ²	kg/cm ²	%	N/mm	g	kg-cm/cm notch*	
	測試方法 Method	ASTM D1238	ASTM D1505	DSC	ASTM D638	ASTM D638	ASTM D638	ASTM D1922 MD/TD	ASTM D1709	ASTM D2240 ASTM D256*	
丁烯薄膜級 C4 Blown Film	3210	1.0	0.92	122.0	100	410	620	145/370	150	---	重包裝袋、農業用膜、工業用袋、伸縮膜、內襯膜 Heavy duty sacks. Agricultural Films. Liner Produce bags. Stretch Film
	3214		0.922		110	320	840				
	3220	2.0	0.92	122.0	100	360	600	40/430	120	---	
	3224		0.922		110	280	800				
3224D		0.924		110	280	800					
丁烯平膜級 C4 Cast Film	3225	2.0	0.92	122	110	280	800	110/300	120	---	保鮮膜、纏繞膜、摺包膜、伸縮膜 Cast Stretch film. Overwrap Film.
	3228	2.8	0.92	122	102	235	800	105/320	110	---	
迴轉成型 Rotation	3830U	3.2	0.938	128	180	220	> 1000	---	---	60/16*	方型桶、超大型水桶、塑膠水塔、塑膠障 (3830U/3840U 含抗紫外線吸收劑) Large Crate Containers. Tank. Barricade.(3830U/3840U contains light stabilizer.)
	3840	5.0	0.935	125	150	220	> 1000	---	---	60/20*	
	3840U	5.0	0.935	125	150	220	> 1000	---	---	60/20*	
押出級 Extrusion	3440	4.0	0.925	123	115	---	800	---	---	---/55	PE 膠布 PE Sheeting.
	3450	8.0	0.925	123	115	---	800	---	---	---/55	
	3460	14.0	0.926	124	120	---	850	---	---	---/56	
射出級 Injection	3470	23.0	0.926	122	117	---	500	---	---	---/55	一般家用盆具、食物包裝盒、各式用途軟蓋 Housewares. Thin walled food containers. Lids
	3490	50.0	0.926	123	123	---	188	---	---	---/45	

資料來源：台塑

品名 GRADE	基本物性 BASIC PROPERTY	熔融指數 MELT INDEX	密度 Density	熔點 Melting Point	拉力降伏強度 Tensile Strength at yield	拉力斷裂強度 Tensile Strength at break	斷裂伸長	艾氏衝擊強度 Izod Impact Strength	硬度 Hardness	耐環境應力龜裂性 ESCR	用途 Application
	單位 Unit	g/10 mins	g/cm ³	°C	kg/cm ²	kg/cm ²	%	kg-cm/cm notch	Shore D	Hours	
	測試方法 Method	ASTM D1238	ASTM D1505	DSC	ASTM D638	ASTM D638	ASTM D638	ASTM D256	ASTM D2240	ASTM D1693	
薄膜級 Blown Film	9000	0.07	0.95	130	260	370	850	22	65	500	超薄袋 (厚度最薄至 4.7μ)、點斷袋、小型購物袋、市場袋 Super thinnes bag (a minimum thickness of 4.7μ), roll bag, small shopping bag.
	9001	0.05	0.95	130	260	380	800	22	65	> 1000	購物袋、點斷袋、垃圾袋、排水管 Shopping bag. Roll bag. Garbage bag. Underground sewer pipe.
扁紗級 Flat Yarn & Monofilament	8009	0.85	0.95	133	270	410	1000	NB	68	--	繩、網、帆布、編織袋、發泡板 Ropes. Nets. Tarpaulin. Woven bags. Foam sheet.
	8010	1	0.958	134	295	390	1000	NB	69	--	
中空吹製級 Blow Molding	8003	0.25	0.958	134	300	320	1000	25	69	30	食品容器、鮮奶容器、醫藥品罐、工具箱 Food packaging bottle. Dairy bottle. Medicine cans. Toolbox.
	8003H	0.3	0.958	134	300	320	1000	45	69	30	
	9003	0.25	0.952	132	270	300	1000	13	66	200	清潔用品瓶、機油瓶、工具箱、鞋楦、玩具 Detergent&Bleach. Engine oil bottle. Shoe last. Tool box. Toys.
	7001	0.07 / 9.0	0.95	130	250	350	600	30	65	> 600	20-150 L 化學桶、農藥容器、工業用品 Chemical tans(up to 150L). Agricultural tanks. Big Industrial parts.
	7301 / 7301U	0.03 / 6.0	0.948	129	250	350	600	30	65	> 1000	1000 公升 IBC 桶及汽機車燃油箱等 1000 liters IBC tank and fuel tank of car.
	7501	0.02 / 3.0	0.951	134	270	380	800	NB	67	> 1000	200L 開口、雙 L 環化學桶、工業棧板 Open-top type Drum. L-ring type Drum(up to 200L). Below pallets.
射出吹瓶級 Injection Blow Molding	8013H	0.75	0.96	134	300	320	1000	10	69	--	藥品、化妝品瓶、食品瓶 Medicinal bottles. Cosmetic bottles. Food bottles. Tolleytry bottles.
管級 Pipe	8001 / 8001U	0.05 / 7.0	0.948	129	240	360	850	30	64	> 1000	PE100 本色料、飲用水管、壓力管、污水管、化學用管、電纜套管 (8001U 含有抗紫外線吸收劑) Natural PE100. Potable water pipe. Presure pipe. Sewer & drain pipe. Chemical pipe. Cable conduct pipe. (8001U contains lights stabilizer.)
	8001BL	0.05 / 7.0	0.958	129	240	360	850	30	64	> 1000	PE100 黑色混配料、飲用水管、瓦斯 (燃氣) 管、污水管、化學用管、電纜套管 Black PE100. Potable water pipe. Gas pipe. Sewer & drain pipe. Chemical pipe. Cable conduct pipe.
	8001RT	0.12 / --	0.947	127	220	370	800	--	59	> 1000	地板採暖管和多層複合管道 Underfloor heating pipe. Multilayer pipe for heating and plumbing.
通信電纜級 Wire and Cable	9007	0.8	0.951	130	230	250	600	6	65	> 48	CCP 芯線絕緣、F.S 通信電纜 Telephone wire insulation(CCP). Outer skin in "foam-skin" (F.S).
瓶蓋級 Cap & Closure	8020	2.1	0.954	133	260	300	900	5	68	20	押蓋成型專用料，適用於礦泉水瓶蓋、一般飲料瓶蓋等，不適用於碳酸飲料瓶蓋 Designed for injection Molding, suitable for cap and closure of Non-CSD bottles.
	8040C	4	0.957	133	280	280	900	7	69	15	
射出級 Injection Molding	8041	4	0.96	133	310	250	1000	8	70	6	高強度射出級，適用於棧板、搬運箱、油漆桶、安全帽等大型或高強度物件 High strength injection grade for Pallet. Crate. Paint Drum. Safety Halmet. Etc.
	8050	6	0.959	133	310	240	900	6	70	--	啤酒箱、搬運箱、醫療用具、休閒桌椅、運動護具、塑膠水塔、玩具用組件、工業用安全帽 Crates. Boxes. Seats. Pallet.
	7200	22	0.955	133	285	150	700	3.5	67	--	一般家用盆具、菜砧、玩具、涼椅、塑膠標籤裝飾品 Housewares. Thin Walled Food Containers. PET bottle base cup.
通信電纜級 Wire and Cable	7200F	22	0.955	133	285	150	700	3.5	67	--	纖維專用料，適用於不織布、複合紗、紙尿布等。 Designed for Nonwoven Fibers, such as Textiles & Fibers, Health & Hygiene.

	PRODUCTS	MAIN APPLICATIONS	VA%	MI g/10min
1	UE2828	Solar Cell Encapsulant	28	25
2	UE3312	Wire & Cable	33	12
		Shoe sole foaming		
3	UE4055	Binders used in ink	40	55
		Hot melt		
		Shoe sole foaming		
4	UE508	Powder Hot Melt (for hot melt adhesion of non-woven -fabric)	8	85
5	UE612-04	Hot melt	19	150
6	UE629	Injection foam	18	2.5
		Shoe sole foaming		
7	UE630	Shoe sole foaming	16	1.5
8	UE632	Injection foam	22	2.2
		Shoe sole foaming		
9	UE633	Injection molding	19	20
		Hot melt		
10	UE634-04	Wire & Cable	28	6
		Hot melt		
		Shoe sole foaming		
11	UE638-04	Injection molding	28	18
		Hot melt		
12	UE639-04	Hot melt	28	150
13	UE647-04	Hot melt	28	800
14	UE649-04	Hot melt	19	400
15	UE653-04	Hot melt	28	400
16	UE654-04	General Compounding	33	30
		Wire & Cable Compounds		
		Hot melt		
17	UE659	Hot melt	25	2
		Compressing molding (Foam)		

資料來源：華夏海灣