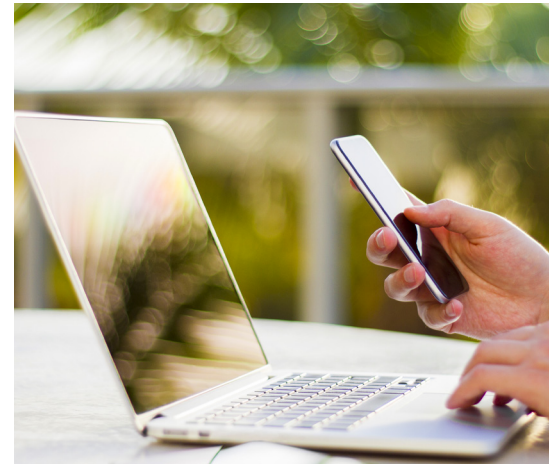


FORMOSA CHEMICALS AND FIBRE CORPORATION



Established in 1965 Formosa Chemicals and Fibre Corporation is a subsidiary of the Formosa Plastics Group. Offering a range of Styrenic Resin:

- TAIRILAC® ABS with Annual Capacity 410,000 Tonnes
- TAIREX® PS with Annual Capacity 320,000 Tonnes

ABS: ACRYLONITRILE BUTADIENE STYRENE

ABS is a terpolymer made by polymerizing styrene and acrylonitrile in the presence of polybutadiene. The most important mechanical properties of ABS are impact resistance and toughness. A variety of modifications can be made to improve impact resistance, toughness, and heat resistance. The impact resistance can be amplified by increasing the proportions of polybutadiene in relation to styrene and acrylonitrile.

A highly versatile engineering plastic, ABS is used in a broad range of injection moulding and extrusion applications with variants available offering flame retardant, heat resistant, high flow and high gloss characteristics

PS: POLYSTYRENE RESINS

Polystyrene is a commonly used thermoplastic resin generally divided into General Purpose (GPPS) and High Impact (HIPS) categories. GPPS offers excellent optical properties and ease of processing whereas HIPS grades offer enhanced impact resistance.

Widely used in thermoforming and injection or extrusion processes, PS resins offer excellent performance in rigid packaging applications for containers, lids, dairy tubs, bottles and trays.

FORMOSA ABS GENERAL GRADE

TAIRILAC® ABS Resin				AG100H	AG1000	AG12A0
PROPERTY	UNIT	TEST METHOD	TEST CONDITION			
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	370 (37)	390 (38)	460 (45)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	630 (62)	580 (57)	750 (74)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	19500 (1911)	19500 (1910)	25000 (2450)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-96	R-93	R-105
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	36 (353)	39 (382)	30 (294)
			-30°C 1/4"	26 (255)	-	-
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	100	99	102
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/2" bar)	85	-	-
			Unannealed 18.6 kg/cm ² (1/4" bar)	-	84	85
			Annealed (80°C x 8hr)	95	94	95
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	0.85	0.9	2.1
			220°C x 10kg (98N)	9	10	21
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.04	1.03	1.04
Flammability		UL-94	File No. E162823	1.5mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour
Characteristics				Super high impact	Super high impact	High impact
Applications				Helmets, Shoe heels, Pipe fittings, Products of low temp. usage	Helmets, Shoe heels, Pipe fittings, Products of low temp. usage	Shoe heels, Toys, Clock housing, Stereo housing, Suitcase, The plate-like products
Features				Super high impact with better low temp. impact property	Super high impact	High impact

GENERAL PURPOSE GRADES – GP EXTRUSION

	AG12A3	AG15A0	AG15A1-H	AG15A3	AG15E0	AG15E1	AG15E3
	450 (44)	475 (47)	475 (47)	470 (46)	490 (48)	490 (48)	490 (48)
	750 (74)	800 (78)	800 (78)	800 (78)	870 (86)	870 (86)	870 (86)
	25000 (2450)	27000 (2650)	27000 (2650)	27000 (2650)	28000 (2750)	28000 (2750)	28000 (2750)
	R-106	R-110	R-110	R-108	R-110	R-110	R-111
	28 (274)	22 (216)	22 (216)	22 (216)	14 (137)	14 (137)	15 (147)
	–	–	–	–	–	–	–
	102	100	100	99	103	103	103
	–	–	–	–	–	–	–
	85	85	85	85	86	N/A	86
	95	95	95	95	100	100	96
	1.6	2.2	2.2	2.2	1.8	1.8	2.1
	16	22	22	22	20	20	21
	1.04	1.05	1.05	1.05	1.05	1.05	1.06
	1.5mm HB All Colour	1.8mm HB All Colour	1.8mm HB All Colour	1.9mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour
	High gloss, High impact	High gloss, Medium impact	High gloss, Medium impact	High gloss, Medium impact	High gloss, High rigid	High gloss, High rigid	High gloss, High rigid
	Shoe heels, Toys, Clock housing, Stereo housing, Suitcase, The plate-like products	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase	Toys, Calculators, Phone, Clock housing, Stereo housing, Suitcase
	High gloss, High impact	High rigid, Medium impact	High gloss, Medium impact	High gloss, Medium impact	High rigid	High rigid	High gloss, High rigid

FORMOSA ABS JET BLACK

TAIRILAC® ABS Resin				JET BLACK GENERAL GRADE		
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	AG12AJ	AG15AB	AG15AJ
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	430 (42)	470 (46)	450 (44)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	750 (74)	790 (77)	800 (78)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	26000 (2550)	27000 (2650)	27000 (2650)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-106	R-110	R-108
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	25 (245)	15 (147)	20 (196)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	101	102	104
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	86	86	83
			Annealed (80°C x 8hr)	96	96	95
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	1.9	2.4	1.6
			220°C x 10kg (98N)	19	24	17
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.05	1.05	1.05
Flammability		UL-94	File No. E162823	1.5mm HB Black Colour	1.5mm HB Black Colour	1.5mm HB Black Colour
Characteristics				Jet black, High impact	Jet black, High gloss	Jet black, High gloss
Applications				Black purpose parts, LED-TV housing, All-in-one PC housing	Black purpose parts, LED-TV housing, All-in-one PC housing	Black purpose parts, LED-TV housing, All-in-one PC housing
Features				Jet black, High impact	Jet black, High gloss	Jet black, High gloss

FORMOSA ABS HIGH FLOW

TAIRILAC® ABS Resin				HIGH FLOW GRADES		
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	AF3500	AF3560	AF3535
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	400 (39)	440 (43)	440 (43)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	680 (67)	750 (74)	740 (73)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	22000 (2160)	25000 (2450)	25000 (2450)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-101	R-107	R-105
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	30 (294)	12 (118)	21 (206)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	99	99	100
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	84	88	84
			Annealed (80°C x 8hr)	94	98	94
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	5	6	4.2
			220°C x 10kg (98N)	50	60	42
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.04	1.04	1.04
Flammability		UL-94	File No. E162823	1.5mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour
Characteristics				High flow, High impact	High flow, High impact	High flow, High impact
Applications				Housing of stereos, Large toys, Chairs, Motocycles, OA machines	Housing of stereos, Large toys, Chairs, Motocycles, OA machines	Housing of stereos, Large toys, Chairs, Motocycles, OA machines
Features				High flow, High impact	High flow, High impact	High flow, High impact

FORMOSA ABS HEAT RESISTANCE

TAIRILAC® ABS Resin				HEAT RESISTANT GRADES		
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	AX4000	AX4100	AX4300
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	440 (43)	400 (39)	450 (44)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	780 (76)	700 (69)	750 (74)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	26000 (2550)	24000 (2350)	24000 (2350)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-108	R-107	R-105
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	17 (167)	14 (137)	27 (265)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	113	125	111
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	91	99	91
			Annealed (80°C x 8hr)	101	109	101
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	N/A	N/A	N/A
			220°C x 10kg (98N)	10	4.5	4.5
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.05	1.05	1.05
Flammability		UL-94	File No. E162823	1.5mm HB All Colour	1.5mm HB All Colour	N/A
Characteristics				Medium high heat		
Applications				Housing of stereos, Large toys, Chairs, Motocycles, OA machines	Parts of cars, Electrical appliances, Hair dryer, Heat resistant parts	Parts of cars, Electrical appliances, Hair dryer, Heat resistant parts
Features				Medium high heat	Super high heat	Medium high heat, Extrusion blow moulding

FORMOSA ABS METAL PLATING

TAIRILAC® ABS Resin				METAL PLATING	
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	AG22AT	AG23AT
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	440 (43)	450 (44)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	730 (72)	750 (74)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	24000 (2350)	24000 (2350)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-104	R-108
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	25 (245)	28 (274)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	102	100
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	80	84
			Annealed (80°C x 8hr)	90	94
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	1.4	1.9
			220°C x 10kg (98N)	15	19
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.04	1.04
Flammability		UL-94	File No. E162823	1.5mm HB All Colour	1.5mm HB All Colour
Characteristics				High impact Electro plating	High impact Electro plating
Applications				Wheel cover, Knobs, Tags, Door handle, Plating products	Wheel cover, Knobs, Tags, Door handle, Plating products
Features				High impact Electro plating	High impact Electro plating

FORMOSA ABS EXTRUSION MOULDING

TAIRILAC® ABS Resin				EXTRUSION GRADES			
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	AG10NP	AG10AP	AE8000	AE8200
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	470 (46)	350 (34)	440 (43)	440 (43)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	740 (73)	580 (57)	700 (69)	680 67
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	25000 (2450)	20000 (1960)	23000 (2260)	23000 (2260)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-105	R-90	R-100	R-104
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	44 (431)	42 (412)	40 (392)	34 (333)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	101	100	102	100
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	88	84	86	86
			Annealed (80°C x 8hr)	98	94	96	96
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	220°C x 10kg (98N)	6.5	4.5	5	15
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.04	1.04	1.04	1.04
Flammability		UL-94	File No. E162823	1.5mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour	1.5mm HB All Colour
Characteristics				Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid
Applications				Extrusion products, Crash helmets, Pipes, Shoe heels	Extrusion products, Crash helmets, Pipes, Shoe heels	Extrusion products, Crash helmets, Pipes, Shoe heels	Extrusion products, Crash helmets, Pipes, Shoe heels
Features				Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid	Extrusion moulding, Super high impact, High rigid

FORMOSA ABS SELF EXTINGUISHING

TAIRILAC® ABS Resin				SELF EXTINGUISHING GRADE	
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	ANC120	ANC100
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	400 (39)	390 (38)
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	650 (64)	620 (61)
Flexural Modulus	kg/cm ² (MPa)	ASTN D-790 (ISO 178)	23°C	25500 (2500)	24000 (2350)
Rockwell Hardness	R-scale	ASTM D-785 (ISO 2039/2)	23°C	R-101	R-101
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4"	22 (216)	18 (176)
Vicat Softening Point	°C	ASTM D-1525 (ISO 306)	1kg load	87	84
Heat Deflection Temperature	°C	ASTM D-648 (ISO 75/A)	Unannealed 18.6 kg/cm ² (1/4" bar)	74	74
			Annealed (80°C x 8hr)	86	86
Melt Flow Index	g/10 min	ASTM D-1238 (ISO 1133)	200°C x 5kg (49N)	5	5.5
			220°C x 10kg (98N)	0	0
Specific Gravity		ASTM D-792 (ISO 1183)	23°C/23°C	1.19	1.21
Flammability		UL-94	File No. E162823	2.3mm 5VB 2.3mm V-0 All Colour	2.3mm 5VA 1.5mm V-0
Characteristics				Flame retardant	Flame retardant
Applications				Flame retardant materials, housing of LCD monitor, LCD-TV computers & OA machine	Flame retardant materials, housing of LCD monitor, LCD-TV computers & OA machine
Features				Flame retardant	Flame retardant

FORMOSA GPPS

TAIRIREX® PS Resin				GP550N	GP5000
PROPERTY	UNIT	TEST METHOD	TEST CONDITION		
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	520 (51)	400 (39)
Tensile Modulus	kg/cm ² x 10 ⁴ (MPa)	ASTM D-638 (ISO 527)	23°C	3.1 (3036)	3.1 (3036)
Tensile Elongation	%	ASTM D-638 (ISO 527)	23°C	2.0	2.0
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	1000 (98)	750 (73)
Flexural Modulus	kg/cm ² x 10 ⁴ (MPa)	ASTN D-790 (ISO 178)	23°C	3.4 (3330)	3.3 (3240)
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4" bar	1.8 (18)	1.6 (16)
Vicat Softening Point	°C	ASTM D-1525 D-648 (ISO306B 75/A)	Annealed 80°C x 2 1/8" bar	104	93
Heat Deflection Tempurature	°C	ASTM D-1525 D-648 (ISO306B 75/A)	Annealed 80°C x 2hr 1/8" bar	95	82
Melt Flow Index		ASTM D-1525 D-648 (ISO306B 75/A)	200°C x 5kg (49N)	2.3	10.0
Reidual Monomer	ppm max.			700	700
Flammability		UL-94	File No. E162823	1.5mm HB NC	1.5mm HB NC
Characteristics				High M. W. for Extrusion	High flow
Applications				PSP sheets, XPS sheets, OPS, Medicine containers	TPR blending, Cassettes, Thinner wall injection parts
Features				White colour, High molecular weight	High flow Injection moulding

GENERAL PURPOSE PS

GP5250	GP525N	GP5350	GP525A	GP5500
430 (40)	430 (40)	460 (45)	460 (45)	520 (51)
3.1 (3036)	3.1 (3036)	3.1 (3036)	3.1 (3036)	3.1 (3036)
2.0	2.0	2.0	2.0	2.0
800 (78)	800 (78)	880 (86)	880 (86)	1000 (98)
3.4 (3330)	3.4 (3330)	3.3 (3240)	3.3 (3240)	3.4 (3330)
1.7 (17)	1.7 (17)	1.8 (18)	1.8 (18)	1.8 (18)
94	94	96	96	104
87	87	90	90	95
7.0	7.0	4.5	4.5	2.5
700	700	700	700	700
1.5mm HB NC	1.5mm HB NC	1.5mm HB NC	1.5mm HB NC	1.5mm HB NC
Injection Moulding	Injection Moulding	High Heat	High Heat	High M. W. for Extrusion
Food containers, Stationary, Toys, Clothing hangers, Lamp decoration, Cassettes & Cosmetic cases	Food containers, Stationary, Toys, Clothing hangers, Lamp decoration, Cassettes & Cosmetic cases	Kitchenware, Toys	Lamp covers, Decorated sheets, CD cases	PSP sheets, OPS, Medicine containers
Blue water, Injection moulding	White colour, Injection moulding	Blue water, High heat resistance	Blue water, High heat resistance	Blue water, High molecular weight

FORMOSA HIPS

TAIRIREX® PS Resin				HIPS (High Impact PS)			
PROPERTY	UNIT	TEST METHOD	TEST CONDITION	HP8250	HP825F	MP6500	HP9450
Tensile Strength	kg/cm ² (Mpa)	ASTM D-638 (ISO 527)	23°C	230 (23)	230 (23)	270 (26)	250 (25)
Tensile Modulus	kg/cm ² x 10 ⁴ (MPa)	ASTM D-638 (ISO 527)	23°C	2.2 (2160)	2.2 (2160)	2.2 (2160)	2.2 (2160)
Tensile Elongation	%	ASTM D-638 (ISO 527)	23°C	40	40	40	40
Flexural Strength	kg/cm ² (Mpa)	ASTN D-790 (ISO 178)	23°C	440 (43)	440 (43)	520 (51)	440 (43)
Flexural Modulus	kg/cm ² x 10 ⁴ (MPa)	ASTN D-790 (ISO 178)	23°C	2.3 (2260)	2.3 (2260)	2.5 (2450)	2.2 (2160)
Izod Impact Strength	kg-cm/cm (J/m)	ASTM D-256 (ISO R180)	23°C 1/4" bar	11.0 (108)	11.0 (108)	6.5 (64)	14.0 (137)
Vicat Softening Point	°C	ASTM D-1525 D-648 (ISO306B 75/A)	Annealed 80°C x 2 1/8" bar	97	97	97	97
Heat Deflection Temperature	°C	ASTM D-1525 D-648 (ISO306B 75/A)	Annealed 80°C x 2hr 1/8" bar	90	90	89	91
Melt Flow Index		ASTM D-1525 D-648 (ISO306B 75/A)	200°C x 5kg (49N)	5.5	9.5	7.0	3.0
Reidual Monomer	ppm max.			700	700	700	700
Flammability		UL-94	File No. E162823	1.5mm HB NC	1.5mm HB NC	1.5mm HB NC	1.5mm HB NC
Characteristics				High impact, Normal flow	High flow, High impact, Normal flow	Medium impact	Super high impact
Applications				Housing for electrical appliances, Baby car parts, Housing of LCD Monitor, Exercise appliances	Housing for electrical appliances, Baby car parts, Housing of LCD Monitor, Exercise appliances	Stationery, Toys, Parts for home electrical appliances, Clothing hangers, Clock housing, FRP blending	HP sheets, Disposable dishware, Electronic Packaging, Cable reels
Features				High impact, Normal flow	High flow, High impact, Normal flow	Medium impact	Super high impact

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