PRODUCTS CONTENT

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POLIMAXX®

Innovative plastics for the world to you

"STRENGTHEN FROM INSIDE
FOSTER STRATEGIC PARTNER
CULTIVATE COMMUNITY
FOR SUSTAINABLE GROWTH"

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INTEGRATED REFINERY AND PETROCHEMICAL COMPLEX

IRPC Public Company Limited is the first Southeast Asia integrated petrochemical business. With its oil refining total capacity of 215,000 barrels per day, IRPC is one of Thailand's largest oil refinery company. Its production process is related from upstream to downstream petrochemical business, while its business covers other infrastructure necessary to support its diverse and autonomous business operations from deep sea port to oil depot and power plants.

- Petrochemical Business The coverage of products consist of polymers comprising HDPE, PP, ABS/SAN, PS, EPS, composite & compound resins as well as high performance product, such as UHMWPE, synthetic polyethylene wax, polyethylene wax, C4-raffinate, acetylene carbon black, acetylene gas.

- Petroleum Business The petroleum products of the company are classified into 3 product groups: petroleum fuel products, lube base oil and related products as well as aromatic products.

- Port Business IRPC's port is located in the adjacent area to its refinery, in the province of Rayong, comprising of both Liquid & Chemical Terminal as well as Bulk & Container Terminal.

- Asset Management Business IRPC new business unit provides asset management services, based on IRPC's own properties in Rayong and other provinces with a total area of about 3,000 acres, to support the operations of the IRPC and PTT Groups as well as outside industries.

IRPC is at the forefront of polymers and chemical development under POLIMAXX® brand in order to serve the most diverse customer requirements, in parallel to social and environmental responsibility for sustainable growth.

PP HOMO | Polypropylene Homopolymer

GRADE	MFI D1238 230°C/2.16 kg (g/10 min)	TSY D638 (MPa)	FM D790 (MPa)	IZOD IMPACT D 256 at 23°C (J/m)	HDT D648 at Load 0.45 N/mm² (°C)	APPLICATION
1032L	5	32	1450	42	105	Hi-speed yarn
1100NK	11	36	1500	31	110	Injection
1100NN	11	33	1300	38	95	Injection
1100PK	15	36	1500	31	110	Multifilament, Injection
1100RC	20	36	1500	30	110	Multifilament, Injection
1100S	30	36	1350	26	100	Injection
1102H	2	37	1600	49	110	Sheet, Blow
1102K	4	37	1600	45	110	Yarn, Monofilament
1103H	2	34	1400	50	90	Sheet
1105RC	25	34	1350	30	105	Spunbond
1105SC	35	33	1350	30	105	Spunbond
1120NK	11	33	1200	38	82	Cookie bag
1125NA	11	36	1550	31	110	CPP film
1126NK	11	35	1450	37	100	Blown film
1140H	2.3	38	1605	49	106	High clarity sheet, High heat
1140U	60	33	1600	27	120	Injection (Thin wall)
1150H	2	37	1800	64	120	High clarity sheet
1202J	3	37	1600	52	110	Yarn, Monofilament
B1101	0.9	38	1600	70	100	Sheet for file & Vacumm, Blow molding
K1104	3.5	36	1600	45	100	Injection
K1111	11	37	1550	32	100	Injection

PP BLOCK | Polypropylene Block Copolymer

GRADE	MFI D1238 230°C/2.16 kg (g/10 min)	TSY D638 (N/mm²)	FM D790 (MPa)	IZOD IMPACT D 256 at -20°C (J/m)	HDT D648 at Load 0.45 N/mm² (°C)	APPLICATION
2100N	11	30	1350	39	100	Injection
2300K	4	28	1300	54	98	Injection
2300LC	6	28	1300	48	98	Injection
2300NC	10	28	1300	49	98	Injection
2300NCA	10	30	1450	51	120	Injection (Battery case)
2300SC	30	27	1300	33	98	Injection
2348NC	11	30	1450	41	113	Injection (Anti-static, UV)
2363LC	6	28	1300	48	98	Injection (UV)
2440TC	55	24	1300	46	125	Injection (Thin wall)
2500H	2	25	1100	78	92	Sheet
2500M	8	25	1130	65	92	Injection (Pail)
2500PC	15	23	1100	54	90	Injection
2500TC	45	21	1100	44	90	Injection (Thin wall)
BC03B	30	26	1200	55	105	Injection
BC03BS	30	26	1200	55	105	Injection with anti-static
BC03BSW	30	26	1200	55	105	Injection with anti-static
BC05B	50	25	1200	40	110	Injection

PP RANDOM | Polypropylene Random Copolymer

GRADE	MFI D1238 230°C/2.16 kg (g/10 min)	TSY D638 (N/mm²)	FM D790 (MPa)	IZOD IMPACT D 256 at 23°C (J/m)	HDT D648 at Load 0.45 N/mm² (°C)	APPLICATION
3340H	2	29.5	1000	337	83	Sheet, Blow
3325M	9	26	850	61	75	CPP film
3375RM	24	24	750	49	76	Extrusion Coating, Laminated yarn
3375SM	35	24	750	44	76	Extrusion Coating , Laminated yarn
K4510	10	34	1200	50	90	Injection and ISBM
K4510ET	10	34	1200	50	90	Medical grade for injection and ISBM (Ethylene oxide)
K4527	27	30	1200	45	90	Injection
K4527ET	27	30	1200	45	90	Medical grade for injection (Ethylene oxide)

PP TPO | Polypropylene Thermoplastic Polyolefin

GRADE	MFI D1238 2.16 kg, 230°C (g/10 min)	TSY D638 (N/mm²)	FM D790 (MPa)	IZOD IMPACT D 256 at 23°C (J/m)	IZOD IMPACT D 256 at -20°C (J/m)	HDT D648 at Load 0.45 N/mm² (°C)	APPLICATION
NBC03HRA	30	22	950	150	65	90	Injection, Compounding

PP COMPOUND | Polypropylene Compound

GRADE	MFI D1238 230°C/2.16 kg (g/10 min)	TSY D638 (kg/cm²)	FM D790 (x10⁴ kg/cm²)	IZOD NI D256 at 23°C (kg-cm/cm²)	HDT D648 at load 0.45 N/mm² (°C)	DENSITY D792 (g/cm³)	APPLICATION
1111NXBA4	12	345	2.0	3.1	120	1.06	Electrical appliances
1111NXGA4	4	632	3.8	5.0	160	1.04	Auto parts, Structural Product
1111NXGA6	4	680	8.5	5.5	161	1.11	Electrical appliances
1111NXTA4	11	370	3.7	3.0	142	1.06	Auto parts
1111NXTA8	10	365	7.5	2.2	147	1.26	Auto parts
1111R	20	400	2.1	3.5	130	0.90	Electrical appliances
1163RXTA8	15	330	5.1	2.0	140	1.28	Auto parts
2311LCXGA4	3	500	4.7	6.6	158	1.04	Auto parts, Electrical appliances
2311LCXTA6	6	290	3.9	4.7	143	1.13	Auto parts, Electrical appliances
2311SCXTA4	30	283	2.7	3.3	138	1.05	Auto parts, Electrical appliances
2346SXTA2	30	280	1.9	4.2	121	0.98	Auto parts
2363SCXTA4	30	270	2.4	3.7	130	1.06	Auto parts
2511HXGA5	1.1	645	4.9	20.5	159	1.07	Auto parts, Electrical appliances
2511PCXTA6	13	255	3.6	5.0	140	1.14	Electrical appliances
1196NN	13.5	310	2.2	4.5	130	1.03	Electrical appliances, UL94 -V2

PP INLINE COMPOUND | Polypropylene Inline Compound

GRADE	MFI ISO 1133 230°C/2.16 kg (g/10 min)	TSY ISO 527-1 (MPa)	FM ISO 178 (MPa)	IZOD NI ISO 179 at 23°C (kJ-m^2)	IZOD NI ISO 179 at -20°C (kJ-m^2)	HDT ISO 75 at load 0.45 N/mm^2	DENSITY ISO 1183 (g/cm^3)	APPLICATION
TP-20	22.5	27	2750	2.2	124	120	1.04	High stiffness, High Impact, Auto part, Electrical appliances
TIP-02	33.0	19	1950	4.0	115	160	1.04	Auto parts, Instument panel, Interior part
TPP-20	25.0	27	2690	2.2	122	161	1.11	Plastic pallet

CONDUCTIVE AND DISSIPATIVE COMPOUND

	GRADE	MFI ASTM D1238 230°C/2.16 kg (g/10 min)	TSY ASTM D638 (Mpa)	FM ASTM D790 (Mpa)	Izod NI ASTM D256 at 23°C (J/M)	HDT ASTM D648 0.45 N/mm^2 °C	Serface Resistivity IRPC Ohm/sq	Density ASTM D792 (g/cm^3)	APPLICATION
Polypropylene	C3104BKC	1.48*	26	1,700	830	100	10^3-10^5	1.06	Extrusion, Electrical appliances
Polypropylene	C3404BKC	6	30	1,600	370	100	10^3-10^5	0.99	Injection , Electrical appliances

	GRADE	MFI ASTM D1238 200°C/5 kg (g/10 min)	TSY ASTM D638 (Kg/cm^2)	FM ASTM D790 X10^4 (Kg/cm^2)	Izod NI ASTM D256 at 23°C (Kg.cm/cm^2)	Vicat ST ASTM D1525 (1/8", 1 Kg) °C	Serface Resistivity IRPC Ohm/sq	APPLICATION
Polystyrene	SD230	4	250	1.6	6	96	10^7-10^8	Dissipative, Electrical appliances
Polystyrene	SC210	3**	320	2.7	5	101	10^3-10^5	Conductive, Electrical appliances

** 5kg/230°C*
*** 10kg/200°C*

HDPE PIPE | High Density Polyethylene

PROPERTIES	TEST METHOD	UNIT	P901BK	901BK-LS LOW SAG PIPE	901BK-SP MARINE PIPE	901BK-CR CHLORINE PIPE	P901BL BLUE PIPE
Color	-	-	Black	Black	Black	Black	Blue
Minimum Required Strength (MRS)	ISO 9080	MPa	10	10	10	10	10
Melt Flow Rate (190°C, 5kg)	ISO 1133	g/10 min	0.25	0.2	0.25	0.25	0.25
Density	ISO 1183-1	g/cm^3	0.959	0.959	0.959	0.959	0.950
Tensile Strength at Break	ISO 527	MPa	≥31	≥31	≥31	≥31	≥30
Carbon Black Content	ISO 6964	%	2.25	2.25	2.25	2.25	-
Pigment Dispersion	ISO 18553	Grade	≤2.5	≤2.5	≤2.5	≤2.5	≤3
ESCR (F50)	ASTM D1693(B)	hrs	≥10,000	≥10,000	≥10,000	≥10,000	≥10,000
Special Propertiy	IRPC	-	-	Low sagging	Immune to bivalves*	Chlorine resistance	-

** Martesia striata*

HDPE INJECTION | High Density Polyethylene

Properties	Test Method	Unit	R1760	V1160
Color			Natural	Natural
Malt Flow Rate @2.16kg/190°C	ASTM D1238	g/10 min	6	15
Density	ASTM D792	g/cm^3	0.957	0.957
Tensile Strength at Yield	ASTM D638	Mpa	29.5	29.0
Tensile Strength at Break	ASTM D638	Mpa	15	13.5
Charpy Notched Impact Strength (at 23°C)	DIN 53453	mJ/mm^2	4	2.5
Vicat Softening Temperature	ASTM D1525	°C	125	125

HDPE WIRE & CABLE | High Density Polyethylene

PROPERTIES	TEST METHOD	UNIT	P702BK
Color	-	-	Black
Density	ISO 1183	g/cm^3	0.968
Melt Flow Rate (190°C, 5kg)	ISO 1133	g/10 min	1.50
Tensile Strength @ Yield	ISO 527	MPa	30.0
Ultimate Elonggation	ISO 527	%	700
Hardness, Shore D	ASTM D2240	-	63
Carbon Black Content	ISO 6964	%	2.6
ESCR (F50)	ASTM D1693(B)	hrs	>5,000
Dielectric Constant (1 MHz)	ASTM D150	ε_r	2.53
Dissipation Factor	ASTM D150	D	0.0024
Volume Resistivity (1 MHz)	ASTM D257	Ω-cm	5.03×10^{16}

HDPE FLOTING SOLAR | High Density Polyethylene

PROPERTIES	TEST METHOD	UNIT	P702BK		
Color	-	-	Black	Gray	Natural
Density	ISO 1183	g/cm^3	0.959	0.958	0.949
Melt Flow Rate (190°C, 5kg)	ISO 1133	g/10 min	0.23	0.35	0.25
Melt Flow Rate (190°C, 21.6kg)	ISO 1133	g/10 min	7.5	10	7.5
Tensile Strength @ Yield	ISO 527	MPa	22	22	24
Tensile Strength @ Break	ISO 527	MPa	≥31	≥31	≥31
Ultimate Elonggation	ISO 527	%	≥750	≥750	≥750
ESCR (F50)	ASTM D1693(B)	hr	>10,000	>1,000	>1,000
Pigment Dispersion	ISO1855-3	-	Excellent	Excellent	-
UV Resisance	IRPC	-	Excellent	Excellent	-

UHMWPE | Ultra High Molecular Weight Polyethylene

PHYSICAL PROPERTIES	TEST METHOD	UNIT	U311	U321	U511	U521	U511H*	U310T	H611B	U211B	U510B	U510FB	U510FW
Average Molecular Weight (Cal.)	Margolies's Equation	× 106 g/mol	3.7	3.7	5.5	5.5	5.5	4.7	0.6	1.7	5.5	5.5	5.5
Average Particle Size, X50	Laser Scattering	µm	125	200	125	200	150	150	125	125	120	125	130
Density	ISO 1183-1	g/cm^3	0.93	0.93	0.93	0.93	0.92	0.92	0.94	0.93	0.93	0.93	0.93
Bulk Density	ISO 60	g/cm^3	0.42	0.42	0.42	0.42	0.42	0.42	0.42	0.4	0.4	0.4	0.4
Viscosity Number	ISO 1628-3	ml/g	1970	1970	2710	2710	2710	2250	540	1120	2710	2710	2710
Intrinsic Viscosity	ISO 1628-3	ml/g	1765	1765	2300	2300	2300	2070	520	1000	2300	2300	2300
Tensile Strength @ Yield	ISO 527	MPa	22	22	22	22	22	17	25	22	22	22	22
Tensile Strength @ Break	ISO 527	MPa	38	38	38	38	38	30	35	38	38	38	38
Ultimate Elongation	ISO 527	%	350	350	300	300	330	300	>500	400	300	300	300
Izod Impact Strength	ASTM D256	J/m	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB	NB
Hardness	ISO 868	Shore D	63	63	63	63	65	60	63	63	63	63	63
Melting Temperature	ASTM D3418	°C	135	135	135	135	135	135	135	135	135	135	135
Special Property							Charpy 14 V-notch ≥ 170 kJ/m^2	Haze < 80%	MFI 190°C/21.6 kg= 0.9 g/10min				
Application			Compression Molding, Ram Extrusion, Pipe	Compression Molding, Ram Extrusion	Compression Molding, Ram Extrusion	Compression Molding, Ram Extrusion	Compression Molding, Ram Extrusion	Transparent Sheet, Film	Lithium ion battery Separator	Lithium ion battery Separator	Lead acid battery Separator	Fiber	Filtration

WPC | Wood Plastic Composite

PROPERTIES	TEST METHOD	UNIT	W1315FD	W2734H1	W1443HF
Density	ASTM D792	g/cm^3	0.98	0.97	0.97
Melt Flow Rate (230°C, 2.16kg)	ASTM D1238	g/10 min	5	11	12
Tensile Strength at Yield	ASTM D638	MPa	33	33	33
Flexural Strength	ASTM D790	MPa	51	50	49
Izod Notched Impact (23°C)	ASTM D256	kJ/m^2	25	20	20
Heat Distortion Temperature (Load 0.45 N/mm)	ASTM D648	°C	145	140	134

PE WAX | Polyethylene Wax

PROPERTIES	TEST METHOD	UNIT	PE100NXC	PE400CR/JB
Viscosity at 140°C	ASTM D3236	cPs	1-30	101-700
Drop Melting Point	ASTM D127	°C	108-124	110-130
Penetration at 25°C	ASTM D1321	0.1 mm	3-20	1-15
Color	ASTM D1925	-	White	White
Product Form			Flake	Lump Bulk

ABS | Acrylonitrile Butadiene Styrene

GRADE	MFI D1238 10 kg, 220°C (g/10 min)	NI D256 1/4", 23°C (kg-cm/cm)	HDT D648 1/4", 18.6 kg/cm² (°C)	HDT D648 1/4", 4.6 kg/cm² (°C)	FLAME RATING UL-94 (Thickness:mm.)	APPLICATION
AN450R	6*	17	75	84	V-0(1.6)	Injection (Flame rating V0)
AN620	2.2*	18	75	-	V-0(1.5),5VA (2.5)	Injection (Flame rating V0, 5VA)
AP102	21	25	88	96	HB(1.5)	Injection (Plating Grade)
GA300	30	22	86	94	HB(1.5)	Injection (High flow)
GA400	45	17	86	94	HB(1.5)	Injection (High flow)
GA800	20	27	87	96	HB(1.5)	Injection (High impact, general purpose)
GA850	20	27	87	96	HB(1.5)	Injection (High impact, general purpose)
KU200	6	21	97	-	HB(1.5)	Injection (High Heat)
KU650**	1.8	14	113	122	HB(1.5)	Injection (High Heat)
KU901	6	13	104	114	HB(1.5)	Injection (High Heat)
MH-1	18	26	86	94	HB(1.5)	Injection (High impact, general purpose)
SP100	18	34	84	90	HB(1.5)	Injection (Super high impact)
SP200	17	36	84	90	HB(1.5)	Injection (Super high impact)
SR101	7	30	85	-	HB(1.5)	Extrusion sheet (general)
SR301**	6	26	85	-	HB(1.5)	Extrusion sheet (Refrigerator)
SR401**	6	28	86	-	HB(1.5)	Extrusion sheet (Refrigerator)
XP300	6	44	85	-	-	Injection (Extra high impact)

** AN450R MFI D1238 200 °C, 5 kg (g/10 min)*
*** Color Compound only*

ABS POWDER | Acrylonitrile Butadiene Styrene (Powder)

GRADE	ABS POWDER/SAN	TYPICAL PROPERTIES OF ABS: MELT FLOW INDEX 10 kg, 220°C (g/10 min)	IZOD NOTCHED IMPACT 1/4", 23°C (kg-cm/cm²)	TENSILE STRENGTH AT YIELD 23°C (kg/cm²)	APPLICATION
AP5000H	33/67*	19-25	≥23	≥420	ABS, PC/ABS Compound
AP6007	26/74**	8-12	≥21	≥450	ABS, Recycle ABS Compound

** SAN 230PC: AN CONTENT 27-29%, MFI 3.4-4.0 g/10min (5 kg, 200°C) with additive*
*** SAN 200PC: AN CONTENT 26-30%, MFI 1.4-1.8 g/10min (5 kg, 200°C) with additive*

GREEN ABS | Acrylonitrile Butadiene Styrene (with Natural Rubber)

GRADE	MFI D1238 10 kg, 220°C (g/10 min)	NI D256 1/4", 23°C (kg-cm/cm)	TSY D638 23°C kg/cm²	FSY D790 23°C ×10⁴ kg/cm²	FM D790 ×10⁴ kg/cm²	Rockwell Hardness D785 (1/4", 23°C) R-Scale	HDT D648 1/4", 18.6 kg/cm² (°C)	APPLICATION
NRS110*	6.0-8.0	≥32	≥420	≥580	≥1.90	≥106	≥80	Extrusion sheet
NRG350**	16-24	≥12	≥350	≥500	≥2.10	≥104	≥80	Injection

**(NR 2%)*
***(NR 10%)*

AS/SAN | Acrylonitrile Styrene

GRADE	MFI D1238 5 kg, 200°C (g/10 min)	NI D256 1/4", 23°C (kg-cm/cm)	FS D790 at 23°C (kg/cm)	HDT D648 1/4", 18.6 kg/cm² (°C)	COLOR	APPLICATION
120PC	2.8	3.2	1200	81	Natural	Injection (General purpose)
121PC	2.8	3.2	1200	81	Blue	Injection (General purpose)
129PC	2.8	3.2	1200	81	Slightly Blue	Injection (General purpose)
140PC	5	3.0	1100	85	Natural	Injection (High flow)
141PC	5	3.0	1100	85	Blue	Injection (High flow)
149PC	5	3.0	1100	85	Slightly Blue	Injection (High flow)
308PC	1.6	3.6	1390	88	Natural	Injection (High chemical resistance for lighter)
320PC	1.9	3.4	1365	86	Natural	Injection (High chemical resistance)

AS/SAN | Acrylonitrile Styrene (for Compounding)

GRADE	MFI D1238 5 kg, 200°C (g/10 min)	%ACN	YI	COLOR	APPLICATION
AS103	2.8	24	9	Natural	Compounding
210HF	13	27	10	Natural	Compounding
250PC	6	27	9	Natural	Compounding
280PC	9	27	9	Natural	Compounding

PS | Polystyrene

GRADE	MFI D1238 5 kg, 200°C (g/10 min)	NI D256 1/4", 23°C (kg-cm/cm)	FS D790 at 23°C (kg/cm)	VST D1525 1/8", 1kg (°C)	FLAME RATING UL-94 (Thickness: mm.)	APPLICATION
GP110	1.7	-	1,019	107	HB (3.0)	XPS (PS Foam sheet)
GP112	2.7	-	1,080	102	-	Extrusion, Injection (High strength)
GP130	3.5	-	900	102	-	Injection (High strength)
GP150	8.0	-	844	100	HB (3.0)	Injection (General purpose)
HI630	6.5	9	460	95	HB (1.5)	Injection (High gloss)
HI650	8	11	450	96	HB (1.5)	Injection (High Impact)
HI830	3	12	422	96	HB (3.0)	Extrusion sheet

EPS | Expandable Polystyrene

GRADE	SIZE (mm.)	TYPE	MOLDING DENSITY RANGE (g/l)	SILO TIME (hrs.)	MIN.THICKNESS (mm.)	APPLICATION
291L	1.00-1.60	STD	14-25	6-12	>10	Insulation board, block molding
321F	0.63-1.12	Fast	16-25	6-12	>10	Packaging
361F	0.40-0.90	Fast	18-30	6-12	>10	Packaging
255E	1.00-1.60	Fast / SE (B2)	16-25	8-16	>10	Insulation board
355E	0.63-1.12	Fast / SE (B2)	18-30	12-24	>10	Insulation board, block molding
277E	1.00-1.60	Fast / SE (B1)	16-25	8-16	>10	Insulation board, block molding
377E	0.63-1.12	Fast / SE (B1)	18-30	8-16	>5	Insulation board, block molding

Note: SE = Self-Extinguishing, STD = Standard
SE: DIN 4102 Standard

AB | Acetylene Black

GRADE	APPEARANCE	ASH CONTENT (%)	POUR DENSITY (g/cc)	ELECTRICAL RESISTIVITY (Ω-cm)	HCl ABORPTION NUMBER (cc/5kg)	COARSE PARTICLE (%)	MOISTURE CONTENT (%)	APPLICATION
AB50	Black Powder	max 0.20	0.060 - 0.080	max 0.25	min 20.0	max 0.02	max 0.30	General propose; dry cell
AB50P	Black Powder	max 0.20	0.085 - 0.095	max 0.25	min 15.0	max 0.02	max 0.30	Rubber&plastic compound

AMSAN | Alpha Methyl Styrene Acrylonitrile (Heat Resistant Powder)

GRADE	BULK DENSITY (g/cc)	VICAT SOFTENING POINT (°C)	VOLATILE (%)	APPLICATION
HP1162	>0.4	>115	<1.0	High heat ABS compound

ANTI-DRIPPING ADDITIVE

GRADE	APPEARANCE	CONTENT OF PTFE (%)	CONTENT OF POLYMER (%)	PARTICLE SIZE OF POWDER	PARTICLE SIZE OF PTFE (μm)	PERCENT VOLATILE (%)	FLOW ABILITY	BULK DENSITY (g/cc)
ADS5000	White Powder	48-52	52-48	Less than 2 mm. 98% minimum	≤0.5	≤0.5	Free Flow	≥0.35

PP ANTI-BACTERIAL COMPOUND

PROPERTIES	TEST METHOD	UNIT	C1180B	C1400B	C1480B	C3408B	C3708B
Tensile Strength at Yield (23°C)	ASTM D638	MPa	36	28	34	25	27
Elongation at Yield (23°C)	ASTM D638	%	27	24	26	25	16
Izod Notched Impact (23°C)	ASTM D256	J/m	23	45	29	68	50
Flexural Modulus (23°C)	ASTM D790	MPa	1500	1300	1350	950	1050
Rockwell Hardness	ASTM D785	R-Scale	100	100	100	78	83
Melt Flow Index (2.16 kg, 230°C)	ASTM D1238	g/10 min	2	10	10	1.7	31
Heat Distortion Temperature (0.45 N/mm^2)	ASTM D648	°C	117	120	110	95	103

TEST METHOD JIS Z 2801:2006	TESTED MICRO ORGANISM	%REDUCTION	ANTIMICROBIAL ACTIVITY
	Escherichia coli	≥ 99	≥ 2
	Staphylococcus aureus	≥ 99	≥ 2

ABS ANTI-BACTERIAL COMPOUND

PROPERTIES	TEST METHOD	UNIT	GA400B	GA300B	GA800B	HI650B
Tensile Strength at Yield (23°C)	ASTM D638	kg/cm^2	460	480	485	239
Izod Notched Impact (1/4", 23°C)	ASTM D256	kg-cm/cm	20	22	23	10
Flexural Strength at Yield (23°C)	ASTM D790	kg/cm^2	660	670	650	428
Flexural Modulus (23°C)	ASTM D790	$\times 10^4 kg/cm^2$	2.4	2.3	2.3	2.4
Rockwell Hardness (1/4", 23°C)	ASTM D785	R-Scale	112	112	111	-
Melt Flow Index (5 kg/200°C)	ASTM D1238	g/10 min	-	-	-	8.3
Melt Flow Index (10 kg/220°C)	ASTM D1238	g/10 min	40	30	18	-
Heat Distortion Temperature (1/4", 18.6 kg/cm^2)	ASTM D648	°C	83	81	82	86

TEST METHOD JIS Z 2801:2006	TESTED MICRO ORGANISM	%REDUCTION	ANTIMICROBIAL ACTIVITY
	Escherichia coli	≥ 99	≥ 2
	Staphylococcus aureus	≥ 99	≥ 2

ANTI-BACTERIAL POWDER FOR POLYMERS

PARAMETERS	TEST METHOD	UNIT	STYRENICS (ABS, PS) AMB103-1	POLYOLEFINS (PP, PE) AMB103-2
Zn	XRF	%	70	70
Particle size [D90]	Laser Diffraction Particle Size Analyzer	µm	4.1	4.2
Bulk density	Gravimetry	g/cm^2	0.36	0.38