

starex[®]

ABS, ABS Alloys & ASA, PP





The world-best Styrene & General Products
ABS, ABS Alloy, ASA, PP



EXCLUSIVE

starex® is the styrene product brand of LOTTE CHEMICAL which provides excellent integrated solutions backed by our exclusive experiences and expertise in materials technology.



EXPERTISE

starex® provides new experience for new lifestyle and shows various line-ups with high performance breaking away from the uniformity of the general resin at the same time.

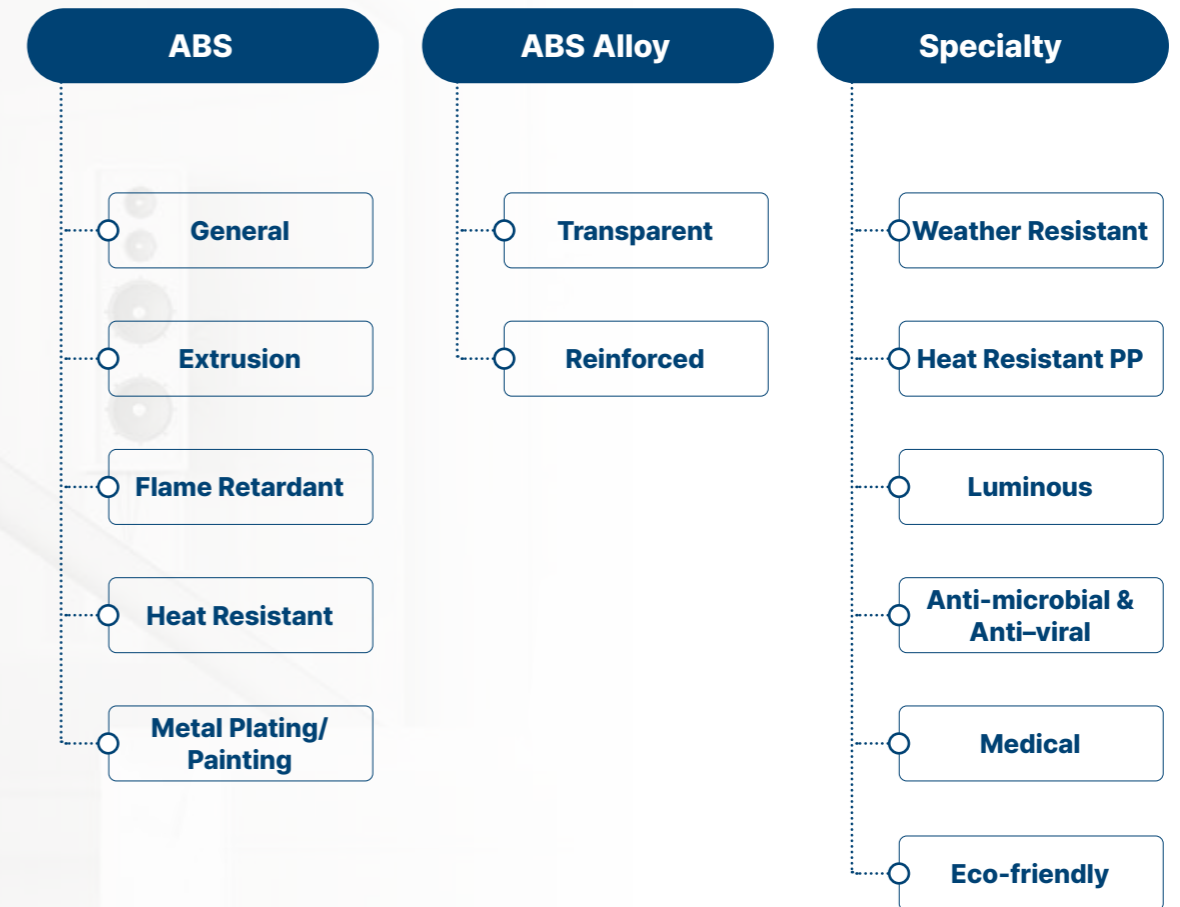


EXCELLENT

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Product Portfolio



General ABS

[excellent balance of material properties]



Key Features



Flowability



Heat stability

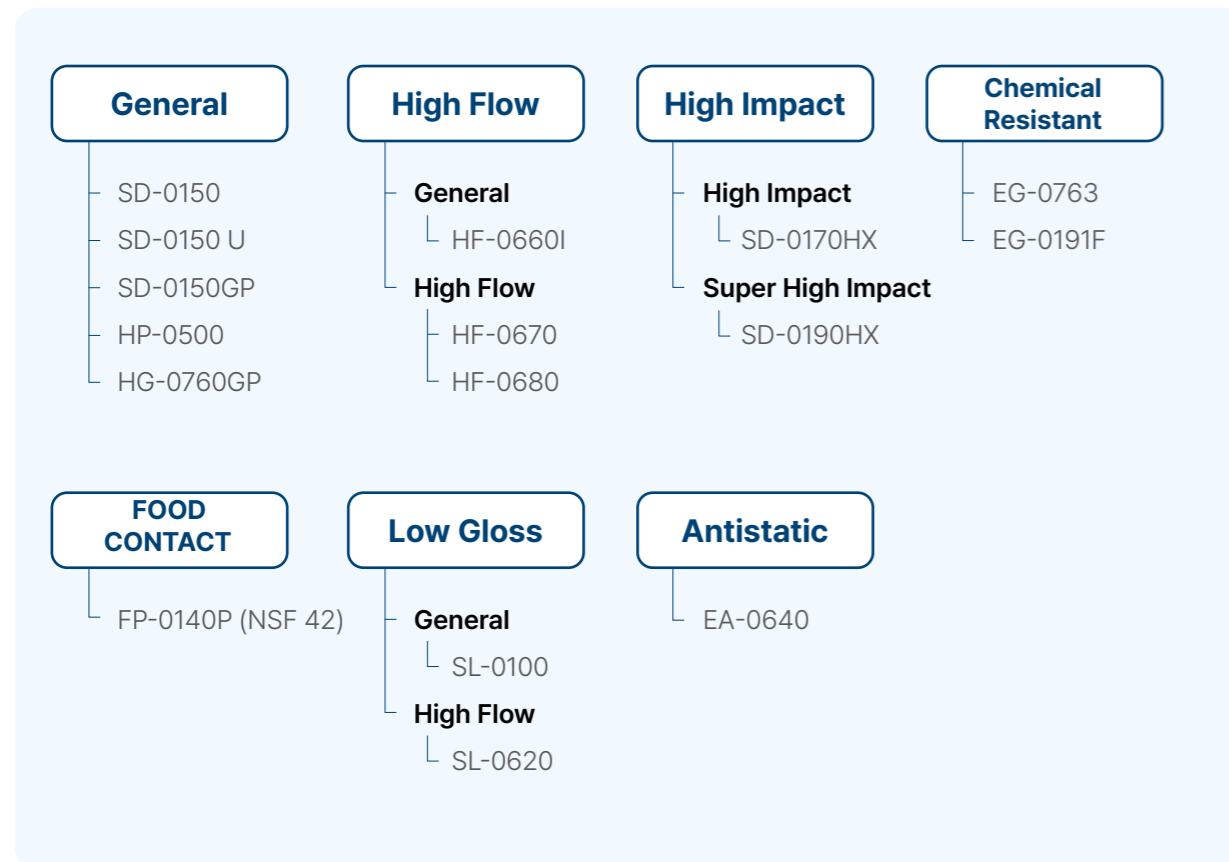


Surface quality



Balanced material properties

PRODUCT LINE-UP



Applications



HA



E&E



Automotive Exterior



Motorcycle (Bike)



Sundries Stationery, Toy

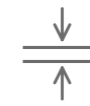
Extrusion ABS

The World best

[Thin-wall vacuum moldability]



Key Features



Thin-wall vacuum forming capability



Gloss surface

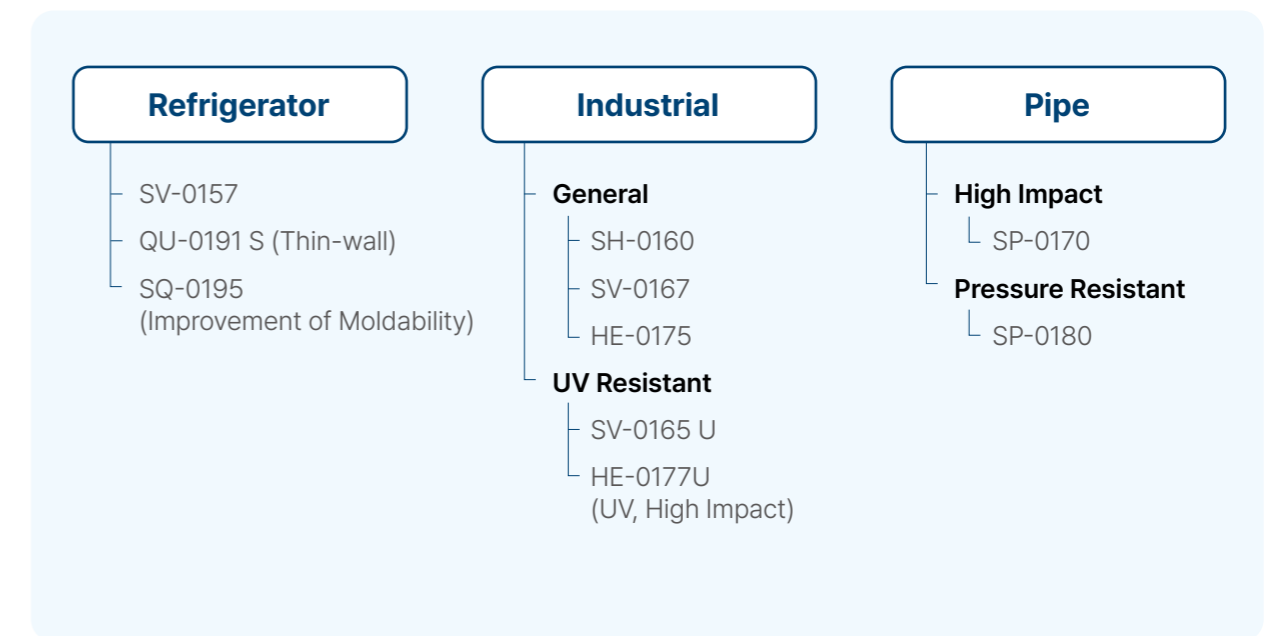


Impact strength



Chemical & Crack resistance

PRODUCT LINE-UP



Applications



Refrigerator inner



Construction material



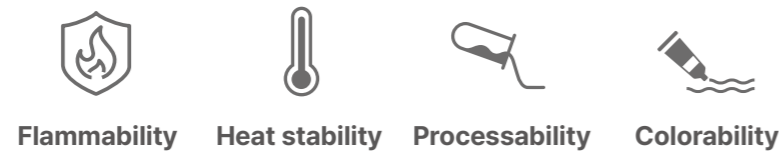
Pipe

Flame Retardant ABS

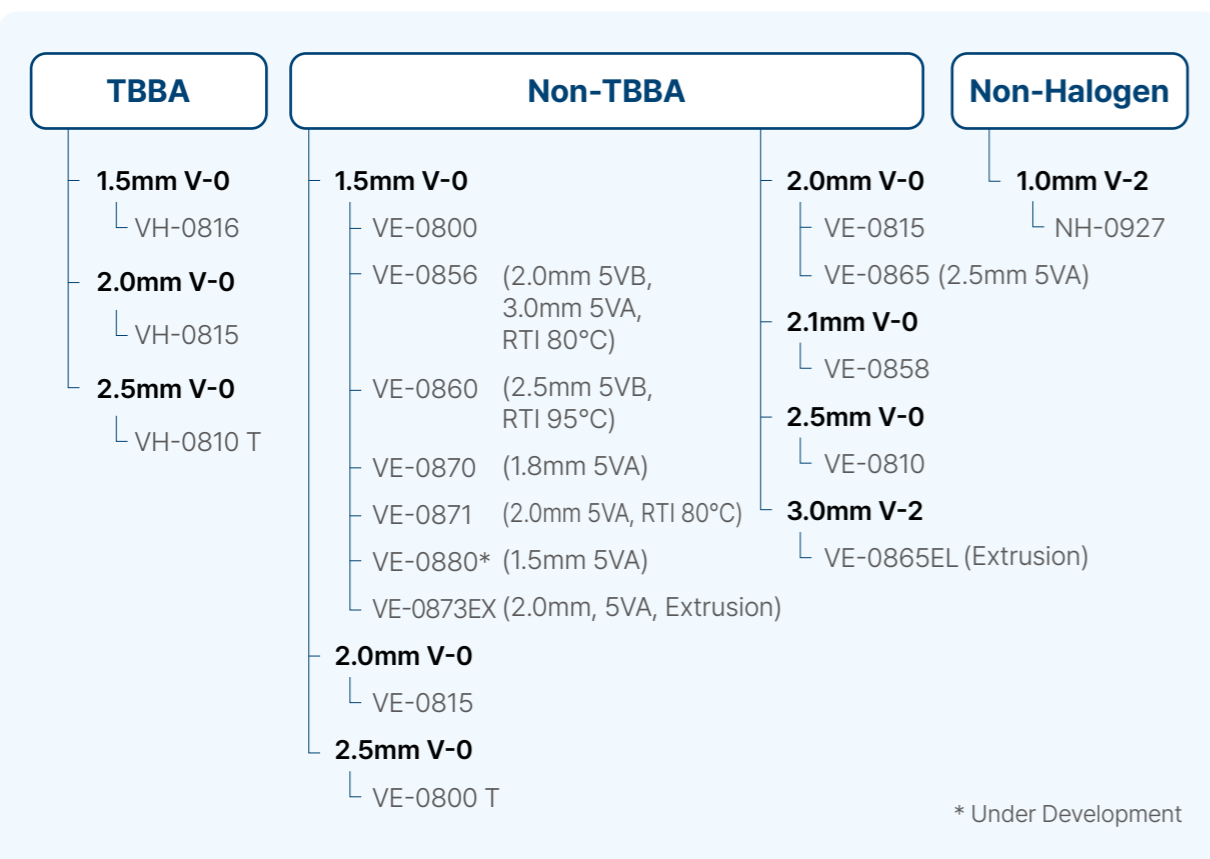


[Flame retardant solutions]
with material property balance

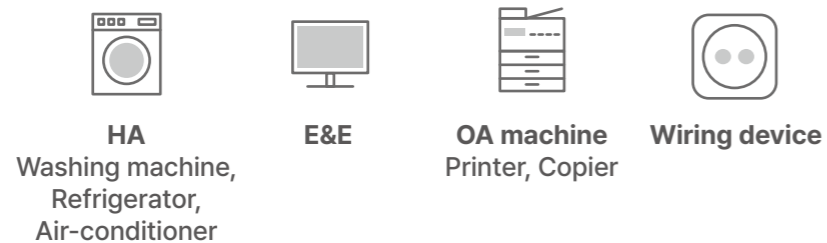
Key Features



PRODUCT LINE-UP



Applications



Heat Resistant ABS

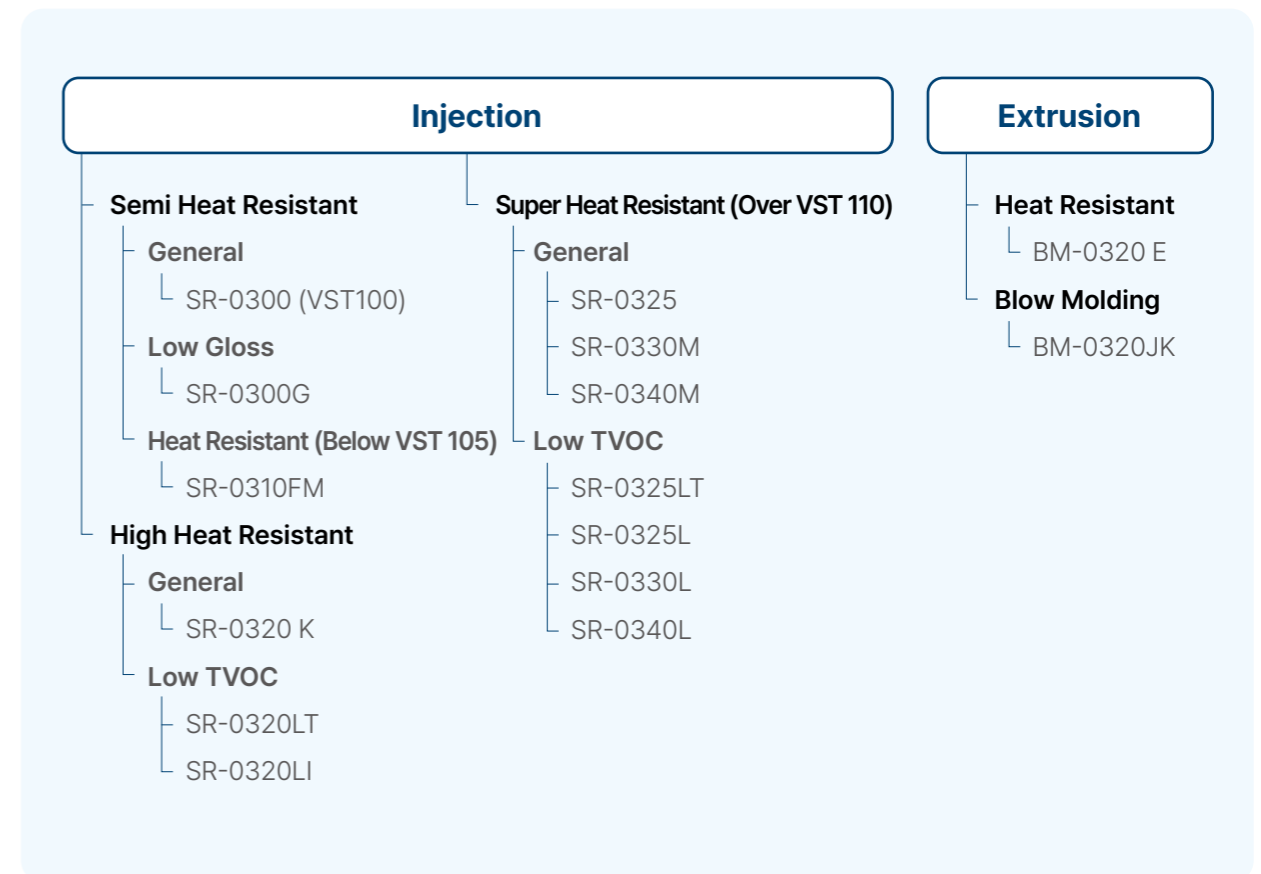


[Heat resistant solutions]
with excellent quality and stability

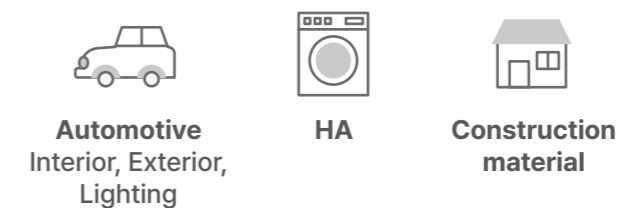
Key Features



PRODUCT LINE-UP



Applications

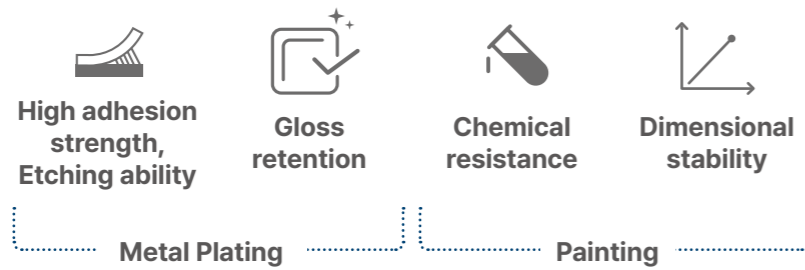


Metal Plating /Painting ABS

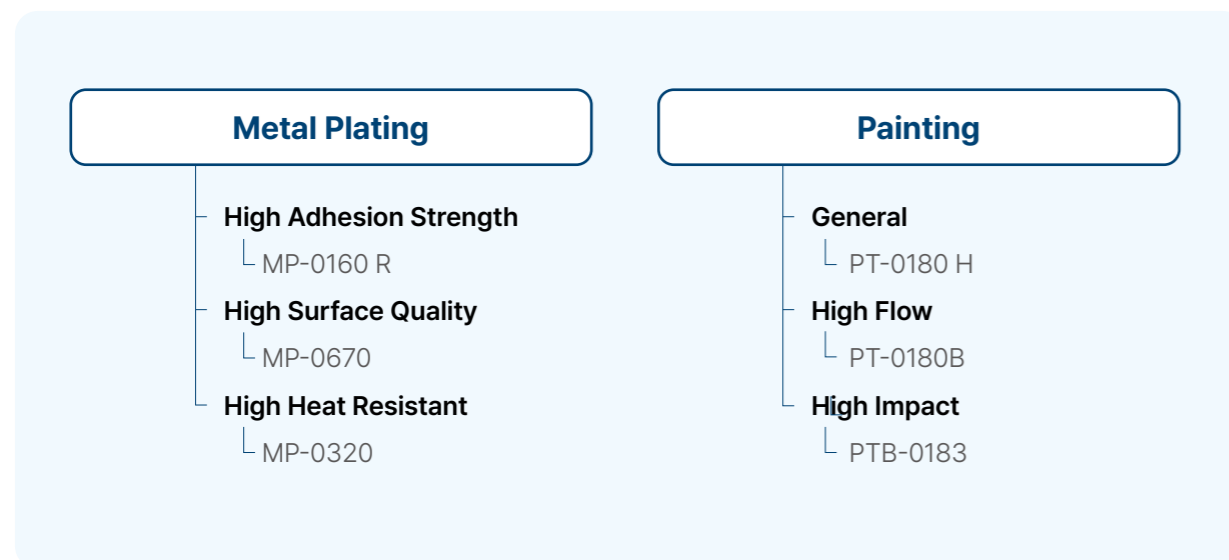


Excellent [adhesion of metal plating] and [quality reliability]

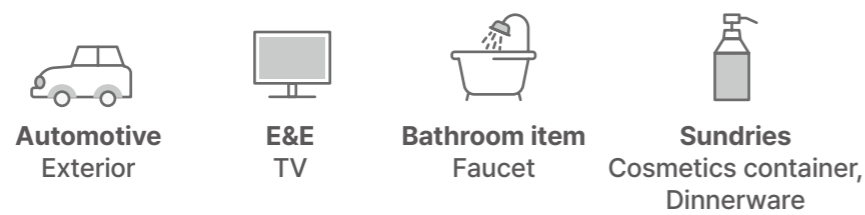
Key Features



PRODUCT LINE-UP



Applications

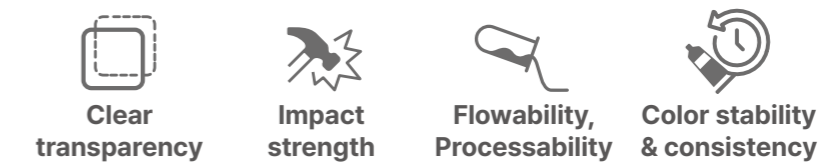


Transparent ABS



[Transparent solutions] replacing glass

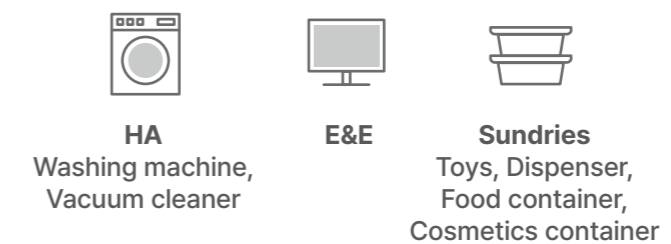
Key Features



PRODUCT LINE-UP



Applications



Reinforced Materials

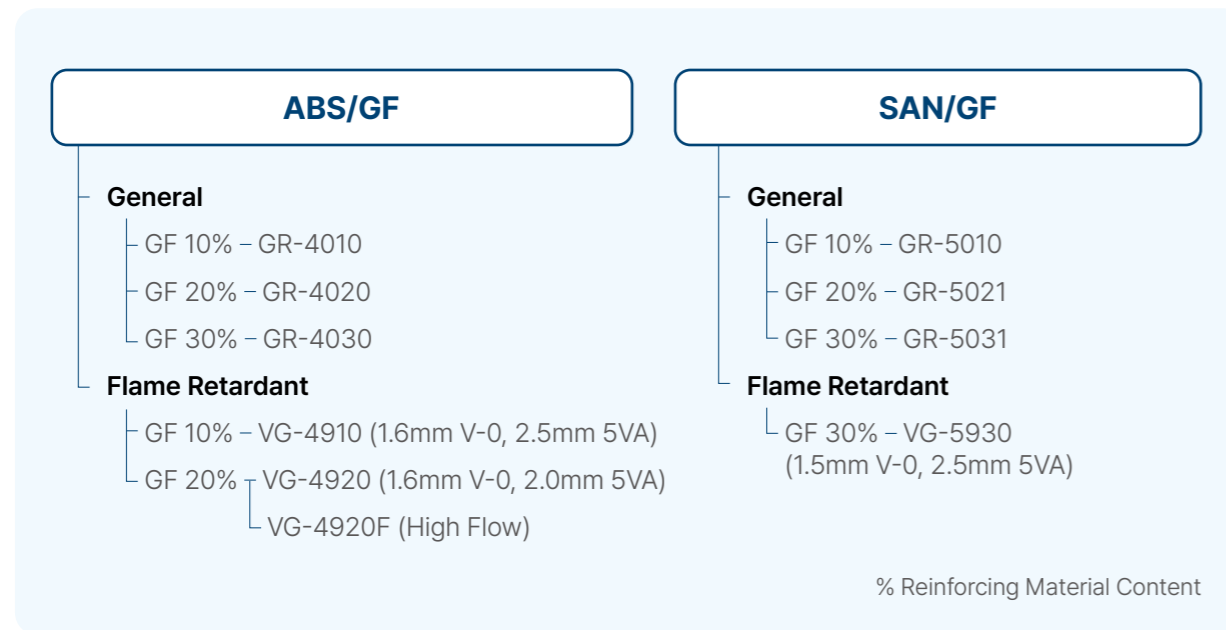


[Reinforced materials] with superior stiffness

Key Features

- High stiffness
- Dimensional stability
- Creep resistance

PRODUCT LINE-UP



Applications

- HA: Air-conditioner/ Refrigerator
- B&C: Window Spacer
- E&E
- HVAC

Weather Resistant Materials

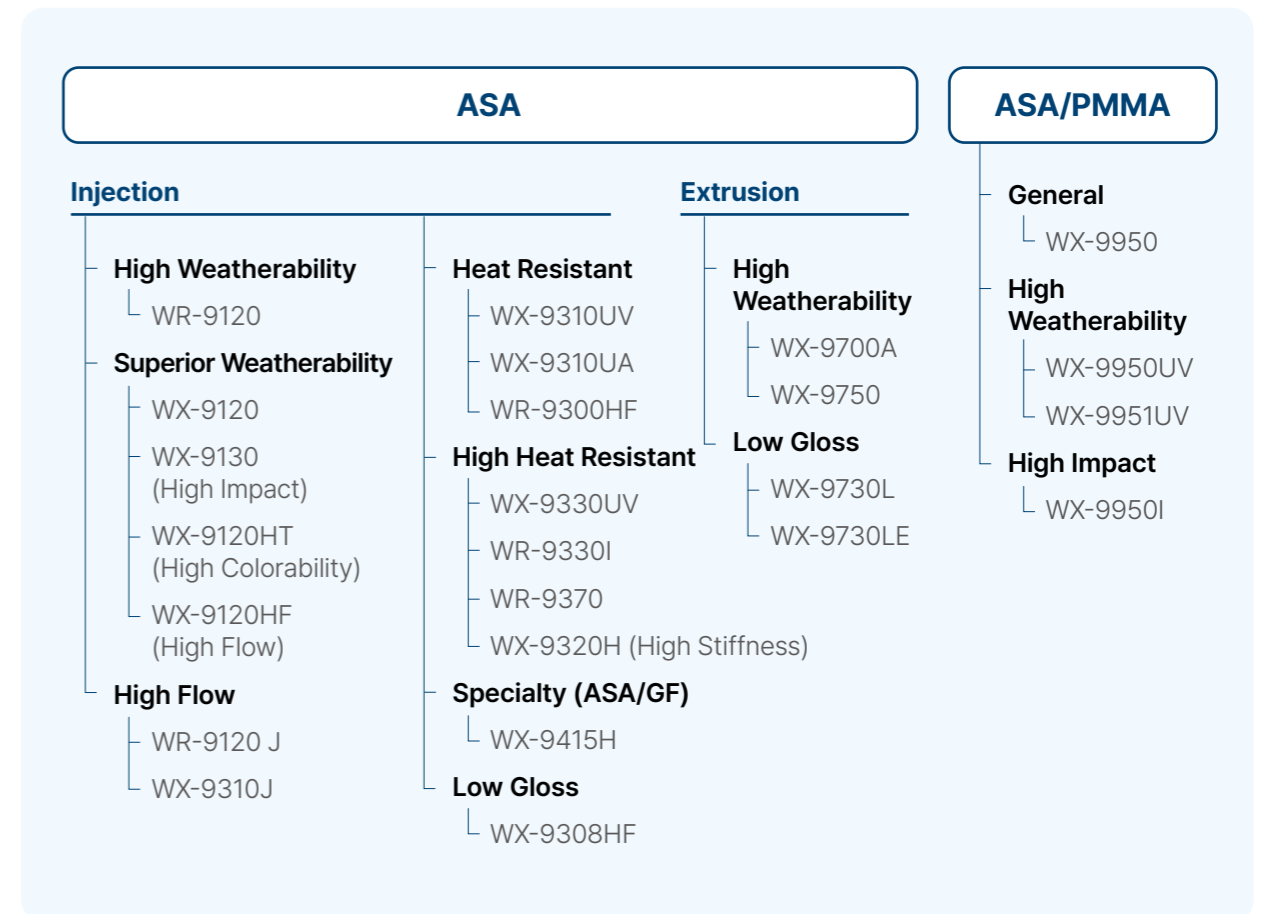


[Unchanged surface quality and material property] in case of various outdoor condition

Key Features

- Weatherability
- Impact strength
- Gloss retention
- Colorability & Color consistency

PRODUCT LINE-UP



Applications

- Automotive Exterior
- Construction Exterior
- Antenna
- HA
- Bathroom item

Heat Resistant PP

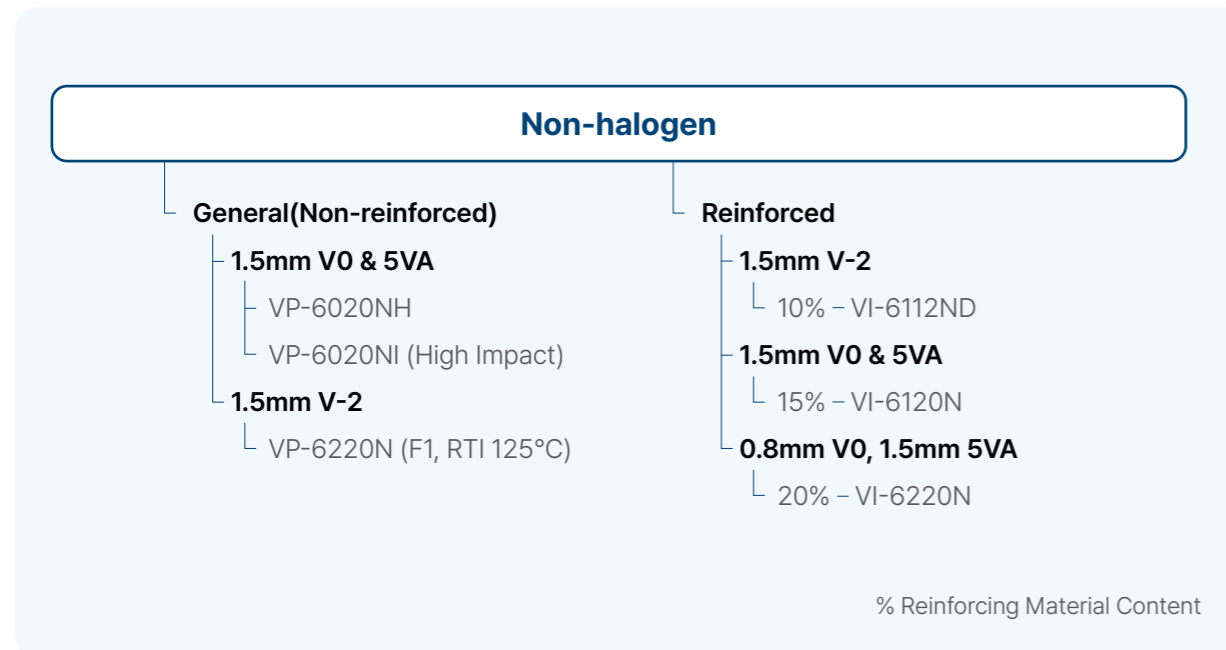
[Fire safety solution] with high flame retardancy



Key Features



PRODUCT LINE-UP



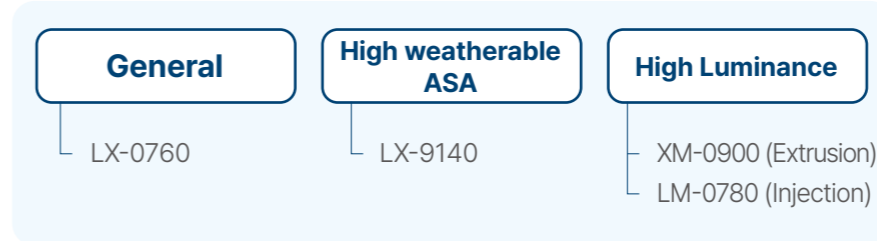
Applications



SPECIALTY

Luminous

PRODUCT LINE-UP



Key Features



Fine exterior
Metallic-look, Emotional feeling

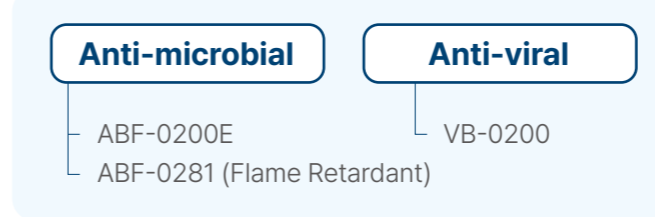


Eco-friendly process
No painting, No solvent use

Anti-microbial & viral Materials

Anti-microbial **evermoim**
Anti-viral **everban**

PRODUCT LINE-UP



Key Features



Anti-microbial & Weatherability
viral property



Satisfy international safety requirement
EPA/FDA

Medical Materials

PRODUCT LINE-UP



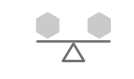
Key Features



Biocompatibility

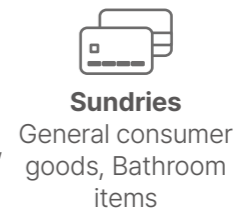
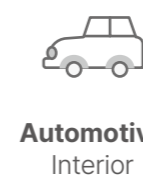


Chemical resistance



Color & Property stability
After sterilization (γ-ray, EtO)

Applications



Luminous

Anti-microbial & Anti-viral Materials

Medical Materials

Eco-friendly Materials

Various eco-friendly line-ups based on [Circular eco-system process]

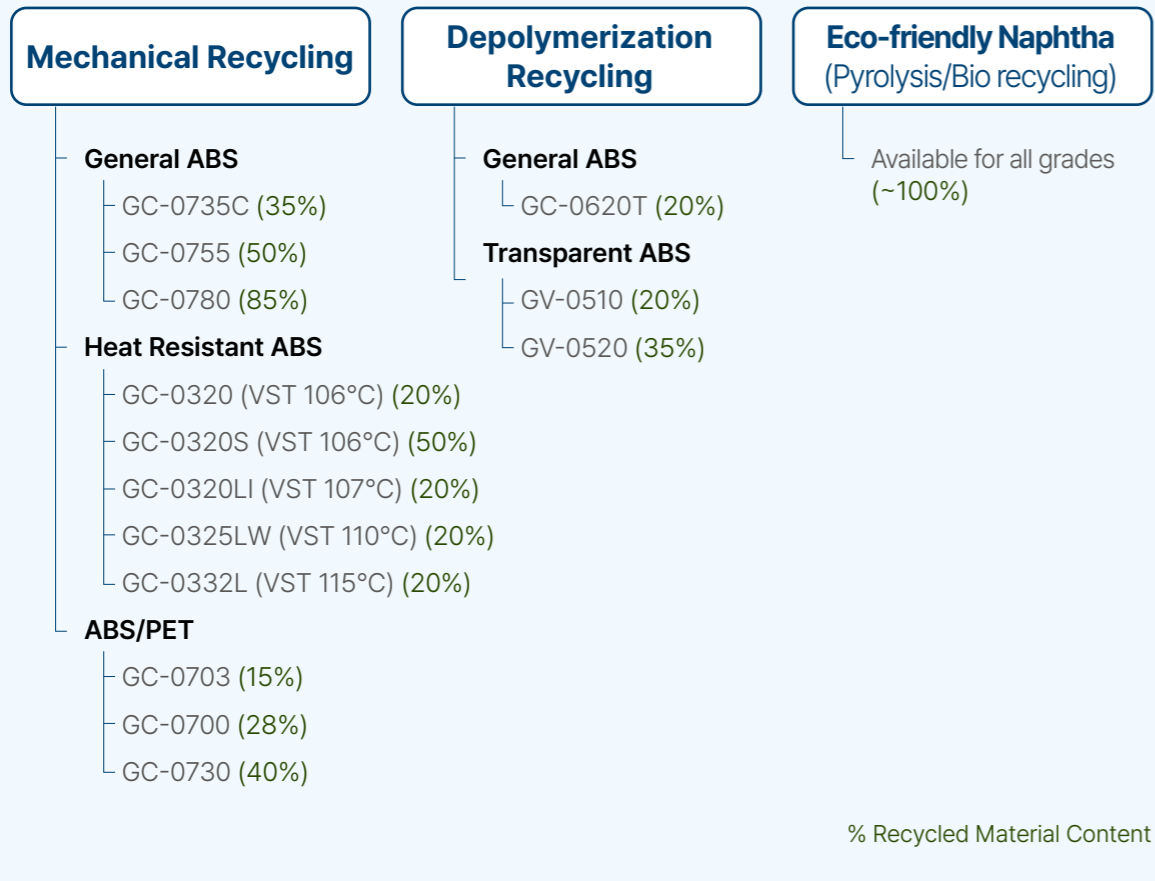


Key Features



Eco-friendly
Sustainable plastic
resource circulation

PRODUCT LINE-UP



Applications



Automotive



E&E



HA

Washing machine,
Refrigerator,
Air-conditioner



Sundries



Mobile



OA device
Printer, Copier

starex®

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Test Method and Unit

		Properties	Test Method	Unit			Properties	Test Method	Unit	
ASTM	Physical	Specific Gravity	ASTM D792	-	ISO	Physical	Melt Flow Index	ISO 1133	g/10min	
		Melt Flow Index	ASTM D1238	g/10min			Mechanical	Tensile Strength at Yield	ISO 527	MPa
		Mold Shrinkage	ASTM D955	%				Flexural Strength	ISO 178	MPa
	Mechanical	Tensile Strength at Yield	ASTM D638	kgf/cm ²		Mechanical		Flexural Modulus	ISO 178	MPa
		Flexural Strength	ASTM D790	kgf-cm/cm			Thermal	Izod Impact Strength (Notched)	ISO 180 1A	KJ/m ²
		Flexural Modulus	ASTM D790	kgf-cm/cm				Thermal	Charpy Impact Strength (V-notched)	ISO 179 1eA
		Izod Impact Strength (Notched)	ASTM D256	kgf-cm/cm			Thermal		Rockwell Hardness	ISO 2039-2
	Rockwell Hardness	ASTM D785	-	Optical		Heat Deflection Temperature		ISO 75-2	°C	
	Thermal	Heat Deflection Temperature	ASTM D648			°C	Optical	VICAT Softening Temperature	ISO 306	°C
		Appearance	Yellow Index	ASTM D1925		-		Flame	Flammability	UL94
Optical	Transmissivity		ASTM D1003	%						
	Flame	Haze	ASTM D1003	%						

※ For detailed product specifications, please refer to our company's product website.



	Properties	Condition	General					
			SD-0150	SD-0150 U	SD-0150GP	HP-0500	HG-0760GP	
ASTM	Physical	Specific Gravity	-	1.04	1.04	1.04	1.05	1.04
		Melt Flow Index	200°C, 5kg	2	1.7	1.8		4
			220°C, 10kg		20		16	
		Mold Shrinkage	Flow at 3.2mm(MD)	0.2-0.5	0.2-0.5			0.35~0.43
	X-Flow at 3.2mm(TD)		0.2-0.5	0.2-0.5			0.37~0.45	
	Mechanical	Tensile Strength at yield	5mm/min	420	410	360	480	400
			50mm/min					
		Flexural Strength	2.8mm/min	630	590	590	700	600
		Flexural Modulus	2.8mm/min	21,000	21,000	21,000	23,000	20,000
		Izod Impact Strength	(notched) 1/4inch at 23°C	22	24	28	13	23
	(notched) 1/8inch at 23°C		35	29		13	24	
	Rockwell Hardness	R-scale	109	108	105	114	108	
	Thermal	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	84	83		91	82
			4.6kgf/cm ² , 6.4mm		95		99	
Appearance	Yellow Index	3.2mm		18				
Flame	Flammability	HB				2		

ISO	Physical	Melt Flow Index	200°C, 5kg	2.0	1.7	1.8		4.0
			220°C, 10kg		20		16	
	Mechanical	Tensile Strength at yield	50mm/min	51	41	35	40	40
		Flexural Strength	2mm/min	76	59	65	60	60
		Flexural Modulus	2mm/min	2,500	2,100	2,200	2,200	2,000
		Izod Impact Strength	(notched) at 23°C, 4mm	21	24	21	13	23
		Charpy Impact Strength	(V-notched) at 23°C, 4mm	24	28	25	14	20
		Rockwell Hardness	R-Scale	109	108	105	114	108
	Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm		78	79	82	76
			0.45MPa, 4.0mm		91	90	96	88
		Heat Deflection Temperature (Annealing)	1.8MPa, 4.0mm			95		93
			0.45MPa, 4.0mm			99		98
		VICAT Softening Temperature	B/50	99	98	97	100	96
	B/120				99			

High Flow			High Impact		Chemical resistance		FOOD CONTACT	Low Gloss		Antistatic
HF-0660I	HF-0670	HF-0680	SD-0170HX	SD-0190HX	EG-0763	EG-0191F	FP-0140P	SL-0100	SL-0620	EA-0640
1.04	1.04	1.04	1.02	1.02	1.04	1.04	1.04	1.03	1.04	1.05
3.3	4.5	5.5					1.5		2	1.8
			8	5	12	15		9		
	0.3~0.6		0.3~0.7	0.3~0.7	0.4~0.6	0.3~0.6	0.3~0.6	0.4~0.7		
	0.3~0.6		0.3~0.7	0.3~0.7	0.4~0.6	0.3~0.6	0.3~0.6	0.4~0.7		
400	380	420	370	380	390	440	410		320	450
								330		
600	580	630	600	580	550	630	620	450	480	750
22,000	21,000	21,000	18,800	18,000	20,000	23,000	21,000	16,000	16,000	26,000
19	19	20	40	45	26	24	22	6		19
	21		50	54	32			7	18	
109	108	107	90	92	100	98	106	97	90	95
	85	85			84					81
										96
	1.5, 3.0	2						1.5, 3.2	1.5, 3.0	
3.3	4.5	5.5					1.5		2.0	1.8
			8	4.5	12	15		9		
39	42	40	35	36	36	35	40	35	34	40
63	68	60	60	58	55	50	60	57	54	
2,000	2,400	1,900	1,800	1,800	2,000	2,000	2,200	1,800	1,700	2,200
20	18	20				28	20	12	26	22
21	20	18	35	48	29	30	21	11	24	27
111	109	107	88	92	103	98	106	93	91	95
74	74				76				70	78
86					90					91
94	94	97	91	94	95	98	96	97	92	97
								100		100

Flame Retardant ABS Product Selection Guide

	Properties	Condition	TBBA			Non TBBA											Non-halogen	
			VH-0816	VH-0815	VH-0810T	VE-0800	VE-0856	VE-0860	VE-0870	VE-0871	VE-0873EX	VE-0815	VE-0865	VE-0858	VE-0810	VE-0865EL	NH-0827	
Physical	Specific Gravity	-	1.16	1.15	1.15	1.16	1.16	1.17	1.16	1.17	1.18	1.15	1.17	1.15	1.15	1.14	1.05	
	Melt Flow Index	200°C, 5kg	4.5	3.8	6.5	3.7	3.5	1.6	7.0	4.0		4.0		3.5	5.0		3.5	
		220°C, 10kg	45							40	10		40			5		
Mold Shrinkage	Flow at 3.2mm(MD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.40-0.49	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.4-0.7	0.3-0.6	
	X-Flow at 3.2mm(TD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.43-0.53	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.4-0.7		
Mechanical	Tensile Strength at Yield	5mm/min	400	400	370	410	400	440	410	430	410	420	420	400	410	420	550	
	Flexural Strength	2.8mm/min	650	600	600	550	540	650	630	600	650	560	650	550	550	620	670	
		2.8mm/min	23,000	22,000	22,000	19,500	20,000	23,000	22,000	22,000	23,000	19,000	22,000	19,000	18,000	19,000	26,000	
	Izod Impact Strength	(notched) 1/4inch at 23°C	13	25	20	19	17	14	13	17	11	20	15	20	17	33	16	
		(notched) 1/8inch at 23°C	20		27		18	15	15		16			21			18	
	Rockwell Hardness	R-scale	100	100	103	97	96	104	100		101	96	106	92	96	97	110	
Heat Deflection Temperature		18.56kgf/cm ² , 6.4mm	77	77	70	80	80	85	88	81		80		70	78		88	
Appearance	Heat Deflection Temperature	4.6kgf/cm ² , 6.4mm					101	98					100				94	
		V-2															10, 30	
Flame	Flammability	V-1		15												3		
		V-0	15	2	2.5	15	15	1.5, 2.5-2.7	15	15	15	2	2	2	2.5			
		5VB	2	2			2.0	2.5-2.7	2	2	2			2.5				
		5VA	2.5				3.0		2	2	2			2.5				

	Properties	Condition	TBBA			Non TBBA											Non-halogen	
			VH-0816	VH-0815	VH-0810T	VE-0800	VE-0856	VE-0860	VE-0870	VE-0871	VE-0873EX	VE-0815	VE-0865	VE-0858	VE-0810	VE-0865EL	NH-0827	
Physical	Melt Flow Index	200°C, 5kg	4.5	4.2	6.5	3.7	3.5	1.6	7	4		4		3.5	5		3.6	
		220°C, 10kg	45							40	10		40			5		
Mechanical	Tensile Strength at Yield	5mm/min					43	45						42				
		50mm/min	40	45	41	40			35	43		40	45	40	43	50		
	Flexural Strength	2mm/min	65	71	62	62	66	66	60	65		60	75	65	62	64	78	
		28mm/min																
	Flexural Modulus	2mm/min	2,300	2,400	2,100	2,000	2,238	2,350	2,200	2,200		2,000	2,600	2,200	1,900	2,000	2,600	
		Izod Impact Strength	(notched) at 23°C, 4mm	18.5	19	19	18	25	14	15	17		17	15.5	25	18	35	21
Charpy Impact Strength	(V-notched) at 23°C, 4mm	21	22	20	22	24	16	10	19		20	16	25	21	35	21		
	Rockwell Hardness	R-Scale	100	104	103	102	96	104	100		102	106	95	104	100	112		
Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	71	71	67.4		75	85	80	77			76	75			78	
		0.45MPa, 4.0mm		81	80		87	98					87				90	
	Heat Deflection Temperature (Annealing)	1.8MPa, 4.0mm		79														89
		0.45MPa, 4.0mm		84														85
VICAT Softening Temperature	B/50	86	86	85	87	90	97	92	91	97	87	91	90	87	97	96		
	B/120		88										91			99		

Heat Resistant ABS Product Selection Guide

	Properties	Condition	Extrusion		Injection																	
			BM-0320E	BM-0320K	SR-0300	SR-0300G	SR-0310FM	SR-0320K	SR-0320LT	SR-0320LJ	SR-0325	SR-0330M	SR-0340M	SR-0325LT	SR-0325L	SR-0330L	SR-0340L					
Physical	Specific Gravity	-	1.05	1.04	1.05	1.05	1.06	1.06	1.05	1.05	1.06	1.06	1.05	1.05	1.06	1.07	1.07	1.06	1.06	1.07	1.07	
	Melt Flow Index	220°C, 10kg	3.3	4.5	13	12	20	9	10	6	7	3	2.5	4	8	3.5	2.6					
		Mold Shrinkage	Flow at 3.2mm(MD)	0.4-0.7	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7
Tensile Strength at Yield	5mm/min		450							460	400				420							
	50mm/min		430	450	400	440	470			540		430	440	500	520	490						
Mechanical	Flexural Strength	2.8mm/min	620	600	620	500	640	740	700	610		640	640	620								
		10mm/min									800				750	720	720					
	Flexural Modulus	2.8mm/min	20,000	20,500	23,000	20,000	21,000	24,000	23,800	20,000		22,510	22,000	21,000								
10mm/min										25,000				24,000	24,000	24,000						
Izod Impact Strength	(notched) 1/4inch at 23°C	15	30	23	13	15	17	17	22	10	12	14	12	12	13	9						
	(notched) 1/8inch at 23°C	20		30	16	18	19	20	24		13	16	15	15	14	11						
Rockwell Hardness	R-scale	105	102	110	100	109	110	113	110	115	113	110	113	115	115	115						
	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	97																			
Thermal	Heat Deflection Temperature	4.6kgf/cm ² , 6.4mm	107																			
		Yellow Index	3.2mm													31.2						
Appearance	Flammability	HB												15								

	Properties	Condition	Extrusion		Injection													
			BM-0320E	BM-0320K	SR-0300	SR-0300G	SR-0310FM	SR-0320K	SR-0320LT	SR-0320LJ	SR-0325	SR-0330M	SR-0340M	SR-0325LT	SR-0325L	SR-0330L	SR-0340L	
Physical	Melt Flow Index	220°C, 10kg	3.3	4.5	13	12	20	9	10	6	7.5	3	2.5	4	8	3.5	2.6	
		250°C, 2.16kg										2						
Mechanical	Tensile Strength at Yield	50mm/min	44	44	48	36	50	50	50	45	52	48	47	50	48	51	48	
		Flexural Strength	2mm/min	70	68	76	50	78	74	80	74	80	78	78	85	75	78	85
	Flexural Modulus	2mm/min	2,300	2,250	2,500	1,800	2,300	2,400	2,500	2,400	2,500	2,350	2,500	2,500	2,400	2,400	2,500	
		Izod Impact Strength	(notched) at 23°C, 4mm	20	30	22	18	15	17	18	23	11	14	14	15	13	14	10
	Charpy Impact Strength	(V-notched) at 23°C, 4mm	20	30	23	17	16	17	18	24	11	15	13	15	13	13	11	
		Rockwell Hardness	R-Scale	105	102	110	100	109	110	113	110	115	113	110	113	115	115	115
Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	86															
		0.45MPa, 4.0mm	98															
	VICAT Softening Temperature	B/50	108		102	100	103	106	106	107	114	118	120	113	115	120	126	
B/120						106							119					

	Properties	Condition	Refrigerator			Industrial Use					Pipe		
			SV-0157	QU-0191 S	SQ-0195	SH-0160	SV-0167	HE-0175	SV-0165 U	HE-0177U	SP-0170	SP-0180	
ASTM	Physical	Specific Gravity	-	1.04	1.04	1.04	1.04	1.03	1.04	1.04	1.03	1.04	1.04
		Melt Flow Index	220°C, 10kg	5.5	4.3	4.0	8.0	5.2	8.0	8.2	8	6.4	6.0
		Mold Shrinkage	Flow at 3.2mm(MD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.5-0.6	0.3-0.6	0.4-0.6	
			X-Flow at 3.2mm(TD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.5-0.6	0.3-0.6		
	Mechanical	Tensile Strength at Yield	5mm/min	430	490	420	360	390	400	400	340	390	370
		Flexural Strength	2.8mm/min	600	720	650	550	600	620	770	500	540	550
		Flexural Modulus	2.8mm/min	23,000	24,500	21,000	18,000	20,000	22,800	26,000	15,500	17,500	19,000
		Izod Impact Strength	(notched) 1/4inch at 23°C	25	23	25	33	35	30	22	35	39	38
			(notched) 1/8inch at 23°C	30	27		45	45		25		48	
	Rockwell Hardness	R-scale	108	109	101	101	100	105	109	91	94	98	
	Thermal	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	89	91		90	85		88		88	
			4.6kgf/cm ² , 6.4mm	95				95		98			
Flame	Flammability	HB	1.5-6.0	0.75-3.0		1.5-3.0			1.5, 3.0				

ISO	Physical	Melt Flow Index	220°C, 10kg	5.5	4.3	4	8	5.2	8	8.2	8	6.4	6	
		Tensile Strength at Yield	50mm/min	45	50	40	35	40		45	30	40	45	
	Mechanical	Flexural Strength	2mm/min	65	70	60		65		80	47	60	65	
			5mm/min				55							
		Flexural Modulus	2mm/min	2400	2,500	2,000		2,000		2,700	1,500	1,900	2,100	
	Thermal	Izod Impact Strength	(notched) at 23°C, 4mm	30	26			33		20		34	36	
			Charpy Impact Strength (V-notched) at 23°C, 4mm	30	26	20	27	35		18	33	34	38	
		Rockwell Hardness	R-Scale		108	108		101	100		109	90	101	101
				Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	80	81			78		81		81
	Thermal	Heat Deflection Temperature (Annealing)	1.8MPa, 4.0mm							99		99	100	
			0.45MPa, 4.0mm	90				92		94		93	92	
		VICAT Softening Temperature	B/50	100	102	100	99	98		100	91	99	97	
B/120									103			99		

	Properties	Condition	Metal Plating			Painting			
			MP-0160 R	MP-0670	MP-0320	PT-0180 H	PT-0180B	PTB-0183	
ASTM	Physical	Specific Gravity	-	1.04	1.04	1.05	1.04	1.04	1.03
		Melt Flow Index	200°C, 5kg	1.5	2.3		2.3		
			220°C, 10kg			6		33	16
		Mold Shrinkage	Flow at 3.2mm(MD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.4-0.7	0.3-0.6
	X-Flow at 3.2mm(TD)		0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.4-0.7	0.3-0.6	
	Mechanical	Tensile Strength at Yield	5mm/min	480	450	400	380		370
			50mm/min					430	
	Mechanical	Flexural Strength	2.8mm/min	690	660	630	600		570
			5mm/min					630	
	Mechanical	Flexural Modulus	2.8mm/min	23,000	21,500	21,500	20,000		21,000
			5mm/min					21,000	
	Mechanical	Izod Impact Strength	(notched) 1/4inch at 23°C	28	24	25	33	33	34
(notched) 1/8inch at 23°C					27		35		
(notched) 1/4inch at -30°C			9						
(notched) 1/8inch at -30°C			10						
Flame	Rockwell Hardness	R-scale	109	108	109	105	102	103	
Flame	Flammability	HB				1.5,3.0			

ISO	Physical	Melt Flow Index	200°C, 5kg	1.5	2.3		2.3		
			220°C, 10kg	17		6		33	16
	Mechanical	Tensile Strength at Yield	50mm/min	49	51	47	42	40	38
			Flexural Strength	2mm/min	68	72	74	66	60
		Flexural Modulus	2mm/min	2,300	2,350	2,190	2,100	2,200	2,200
		Izod Impact Strength	(notched) at 23°C, 4mm	26	27	21	32	33	33
		Charpy Impact Strength	(V-notched) at 23°C, 4mm	27	25	22	32	33	33
		Rockwell Hardness	R-Scale	109	108	110	105	102	103
	Thermal	VICAT Softening Temperature	B/50	100	98	106	97	97	97



	Properties	Condition	General				Specialty					
			TX-0520K	TX-0520IM	TX-0520IE	TX-0550K	TX-0510F	TX-0570	TX-0550AT	TX-0585		
ASTM	Physical	Specific Gravity	-	1.09	1.09	1.09	1.08	1.1	1.08	1.09	1.09	
		Melt Flow Index	220°C, 10kg	22	22	14	24	14	4	25	7	
		Mold Shrinkage	Flow at 3.2mm(MD)	0.4-0.8	0.4~0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.3-0.6
	X-Flow at 3.2mm(TD)		0.4-0.8	0.4~0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.4-0.8	0.3-0.6	
	Mechanical	Tensile Strength at Yield	5mm/min	400	400	420	400	450	400	400	520	
		Flexural Strength	2.8mm/min	550	550	630	600	600	550	620	730	
		Flexural Modulus	2.8mm/min	19,000	19,000	19,000	19,500	20,000	17,000	20,000	23,000	
		Izod Impact Strength	(notched) 1/4inch at 23°C	14	14	14	15	14	16	14	14	12
			(notched) 1/8inch at 23°C	15	15	15	16	14	18	15	15	13
	Rockwell Hardness	R-scale	110	110	110	107	110	102	100	115		
	Thermal	Heat Deflection Temperature	18,56kgf/cm ² , 6.4mm	81	81		80	83	80			
		VICAT Softening Temperature	B/50	93	93		90	92	91	87	95	
	Optical	Transmissivity	3.2mm	90	90							
Haze		3.2mm	2	2								
Flame	Flammability	HB	1.5, 3.0	1.5~3.0								

ISO	Physical	Melt Flow Index	220°C, 10kg	22	22	14	24	14	4	25	7
	Mechanical	Tensile Strength at Yield	5mm/min				40			30	
			50mm/min	50	50	40	45	47		50	
		Flexural Strength	2mm/min	72	72	60	60	70	55	62	72
		Flexural Modulus	2mm/min	2,200	2,200	1,900	1,900	2,200	1,700	2,200	2,400
		Izod Impact Strength	(notched) at 23°C, 4mm	12	12	14	14	12	12		11
	Charpy Impact Strength	(V-notched) at 23°C, 4mm	12	12	12	12	12	13	13	11	
	Rockwell Hardness	R-Scale	110	110	110	110	110	102	100	114	
	Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	75	75		80	80	80		
			0.45MPa, 4.0mm	85	85						
		VICAT Softening Temperature	B/50		93	92	92	89	91	85	94
	Optical	Transmissivity	3.2mm	90	90						
		Haze	3.2mm	2	2						



	Properties	Condition	ABS/GF						SAN/GF			
			GR-4010	GR-4020	GR-4030	VG-4910	VG-4920	VG-4920F	GR-5010	GR-5021	VG-5930	
ASTM	Physical	Specific Gravity	-	1.15	1.18	1.27	1.12	1.33	1.33	1.14	1.22	1.45
		Melt Flow Index	220°C, 10kg	8	7	5.5	23	25	42	14	8	3
		Mold Shrinkage	Flow at 3.2mm(MD)	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	
	X-Flow at 3.2mm(TD)		0.1-0.3	0.1-0.3	0.1-0.3				0.1-0.3	0.1-0.3		
	Mechanical	Tensile Strength at Yield	5mm/min	750	800	1050	750	960	870	900	1,300	1,450
		Flexural Strength	2.8mm/min	1,000	1,100	1,300	800	1,050	1,050	1,100	1,400	1,550
		Flexural Modulus	2.8mm/min	41,000	49,000	79,000	37,000	60,000	58,000	50,000	75,000	95,000
		Izod Impact Strength	(notched) 1/4inch at 23°C	8.5	5.5	6.5	12	5	6.1	4		
			(notched) 1/8inch at 23°C	9	6	7.5	7	5	6	5	5	6
	Rockwell Hardness	R-scale	112	112	112	109	110	110				
	Optical	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	100	101	103	97	96	93	104	108	105
			4.6kgf/cm ² , 6.4mm	106	107	108	102	101	100			
	Flame	Flammability	HB	1.5, 3.0, 6.0	1.5, 3.0, 6.0	1.5, 3.0, 6.0				1.5, 3.0	1.5, 3.0	
V-0						1.6, 2.5, 3.0	1.6	1.6, 2.0, 3.0			1.5	
5VA						2.5	2	2.0, 3.0			2.5	

ISO	Physical	Melt Flow Index	220°C, 10kg	8	7	5.5	23	25	41	14	8	3
	Mechanical	Tensile Strength at Yield	5mm/min	78	85	105						
			50mm/min				85	100	102	90	120	100
		Flexural Strength	2mm/min	110	120	150	100	130	146	130	180	160
		Flexural Modulus	2mm/min	4,100	5,700	8,300	4,100	7,100	7,100	5,500	7,900	11,000
		Izod Impact Strength	(notched) at 23°C, 4mm	10	8	9	7	7	9.1	4	6	7
	Charpy Impact Strength	(V-notched) at 23°C, 4mm	10	8	9	7	7	9.2	4		8	
	Rockwell Hardness	R-Scale	112	112	112	109	115	116				
	Optical	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	100	101	103	92	95	95	104	105	105
			0.45MPa, 4.0mm	106	107	108	101	101	100			
		Heat Deflection Temperature (Annealing)	1.8MPa, 4.0mm				97					
	VICAT Softening Temperature	0.45MPa, 4.0mm				101						
		B/50	106	107	108	99	101	102	106	108	108	
B/120	108	110	112			104						

	Properties	Condition	Injection								
			WR-9120	WX-9120	WX-9130	WX-9120HT	WX-9120HF	WR-9120 J	WX-9310J	WX-9310UV	
ASTM	Physical	Specific Gravity	-	1.06	1.06	1.06	1.07	1.07	1.07	1.07	1.08
		Melt Flow Index	220°C, 10kg	17	16	3	18	39	26	21	6
			250°C, 2.16kg								
		Mold Shrinkage	Flow at 3.2mm(MD)	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6
	X-Flow at 3.2mm(TD)		0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.4-0.7
	Mechanical	Tensile Strength at Yield	5mm/min	480	460	440	370	400	450	440	440
			50mm/min								
		Flexural Strength	2mm/min	680	650						680
			2.8mm/min			600	560	600	650	680	
		Flexural Modulus	2mm/min	22,000	21,000						22,000
2.8mm/min					19,000	16,400	19,000	21,000	22,000		
Izod Impact Strength		(notched) 1/4inch at 23°C		10				9	8	9	
		(notched) 1/8inch at 23°C	20	18	50	18	12	21	11	18	
	(notched) 1/4inch at -30°C										
	(notched) 1/8inch at -30°C										
Rockwell Hardness	R-scale	106	104	98	97	108	105	106	105		
Thermal	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	83	82		81	75				
		4.6kgf/cm ² , 6.4mm		92			85				
Flame	Flammability	HB	1.5	1.5							

ISO	Physical	Melt Flow Index	220°C, 10kg	17	16	3	18	39	26	21	6	
	Mechanical	Tensile Strength at Yield	5mm/min									
			50mm/min	47	43	45	35	40	43	48	49	
		Flexural Strength	2mm/min	67	67	65	65	65	72	75	70	
		Flexural Modulus	2mm/min	2,100	2,100	2,000	2,100	2,000	2,260	2,300	2,400	
		Izod Impact Strength	(notched) at 23°C, 4mm	11	18		15	12	9		16	
		Charpy Impact Strength	(V-notched) at 23°C, 4mm	16	12	14	12	10	14	12	14	
	Rockwell Hardness	R-Scale	106	104	98	98	108	105	107	106		
	Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	72	77		72	75				
			0.45MPa, 4.0mm	90	88			85				
VICAT Softening Temperature		B/50	98	97	95	89	95	98	98	101		
	B/120								103			

Injection						Extrusion				ASA/PMMA			
WX-9310UA	WR-9300HF	WX-9330UV	WR-9330I	WR-9370	WX-9320H	WX-9700A	WX-9750	WX-9730L	WX-9730LE	WX-9950	WX-9950UV	WX-9951UV	WX-9950I
1.08	1.07	1.09	1.07	1.07	1.07	1.07	1.07	1.06	1.06	1.12	1.16	1.15	1.09
7	12	4	5	3	11	5	4	3	3.5	6	5	6	7.5
	6.5												
0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.3-0.7	0.3-0.6	0.3-0.6	0.6-0.8	0.6-0.8	0.4-0.7	0.4-0.7	0.4-0.8	0.4-0.7
0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7		0.3-0.7	0.3-0.6	0.3-0.6	0.6-0.8	0.6-0.8	0.4-0.7	0.4-0.7	0.4-0.8	0.4-0.7
440	450	450	480	500	440	400	410	320	330				
										500	640	550	470
660	680	640	710	710	650	600	570	420	420	700	780	700	650
20,500	22,000	21,000	23,000	23,000	21,000	19,000	18,000	14,000	14,100	20,000	23,000	21,000	21,000
	10	8						11		7	4	5.5	
18	15	22	14	15	18	50	53	30	25	7	4	5.5	10
	4.5										1.8		
	3.5										2		
100	106	103	107	106	103	95	95	75	80	108	118	112	108
					90			73	73				
								80	80				

7	12	4	5	3	11	5	4	3	3.5	6	5	6	7.5
		45											
49	44		52	49	45	40		27	28	46	65	58	50
70	67	73	80	70	70	60	62	47	46	68	90	80	70
2,200	2,100	2,300	2,400	2,160	2,000	2,100	1,950	1,550	1,500	2,100	2,600	2,300	2,200
	12			9			41				4	5.5	
14	13	13	10	13	15	33	32	18	20	7	4	5.5	10
100	106	103	108	106	102	95	95	70	78	107	118	112	105
								72	73				
								79	79				
101	100	103	104	109	101	97	94	83	84	96	102		97

	Properties	Condition	Mechanical Recycling								
			GC-0735C	GC-0755	GC-0780	GC-0703	GC-0700	GC-0730	GV-0510		
ASTM	Physical	Specific Gravity	-	1.04	1.04	1.04	1.07	1.1	1.12	1.09	
		Melt Flow Index	200°C, 5kg	4							
			220°C, 10kg		40	30				19	
		Mold Shrinkage	Flow at 3.2mm(MD)	0.3-0.6		0.3-0.6	0.3-0.8	0.6-0.8	0.6-0.8	0.6-0.8	0.4-0.8
	X-Flow at 3.2mm(TD)		0.3-0.6		0.3-0.6	0.3-0.8	0.6-0.8	0.6-0.8	0.6-0.8	0.4-0.8	
	Mechanical	Tensile Strength at Yield	5mm/min		410						450
			50mm/min	370		420	400	460	400		
		Flexural Strength	2.8mm/min	600	600	600	520	630	550	550	
		Flexural Modulus	2.8mm/min	22,000	23,000	22,000	17,000	19,000	17,000	19,000	
		Izod Impact Strength	(notched) 1/4inch at 23°C	20	23	14	17	16	12	13	
	(notched) 1/8inch at 23°C		25	27	18	30	30	57	14		
	Rockwell Hardness	R-scale	106			94	95	90	113		
	Thermal	Heat Deflection Temperature	18.56kgf/cm ² , 6.4mm	84		84	70	80	74	81	
4.6kgf/cm ² , 6.4mm						80	89	89			
Flame	Flammability	HB	1.0-2.99			1.5,3.0	1.5,3.0	1.5, 3.0			
		V-0									

ISO	Physical	Melt Flow Index	200°C, 5kg	4						
			220°C, 10kg		40	30				19
	Mechanical	Tensile Strength at Yield	5mm/min							
			50mm/min	38	38	40	40	37	40	40
		Flexural Strength	2mm/min	58	62	60	50	56	55	70
		Flexural Modulus	2mm/min	2,200	2,200	2,200	1,900	1,800	1,700	2,000
		Izod Impact Strength	(notched) at 23°C, 4mm	20			15	12	35	11
		Charpy Impact Strength	(V-notched) at 23°C, 4mm	24	25	16	15	13	13	12
	Rockwell Hardness	R-Scale	106			94	95	90	113	
	Thermal	Heat Deflection Temperature (Unannealed)	1.8MPa, 4.0mm	74	74	74	70	71	71	
			0.45MPa, 4.0mm				80	83	83	
		Heat Deflection Temperature (Annealing)	0.45MPa, 4.0mm	96						
		VICAT Softening Temperature	B/50		96	95	91	91	91	89

Depolymerization		Non-painting LUMINOUS				Anti-viral			Medical		
GV-0520	GC-0620T	LX-0760	LX-9140	XM-0900	LM-0780	evermoim	ABF-0281	everban	MR-0130	ML-0750	TX-0520ML
1.09	1.07	1.04	1.06	1.09	1.07	1.05	1.18	1.15		1.04	1.09
		3.2			5	4	5			4	
20	20		3	4.5					40		22
0.4-0.8	0.3-0.6	0.3-0.6	0.44-0.53	0.4-0.8	0.3 ~ 0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3 ~ 0.6	0.4-0.8
0.4-0.8	0.3-0.6	0.3-0.6	0.46-0.57	0.4-0.8	0.3 ~ 0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3 ~ 0.6	0.4-0.8
450	380		430	500	450	380			410	410	440
		420					400	350			
550	600	610	580	700	730	610	550	500	630	650	600
19,000	21,000	21,000	19,000	22,000	27,000	22,000	21,000	17,000	22,000	23,000	20,000
13	23	14	6	7	6	20	8		18	22	13
14	24	14	10	8	7			20	21	23	14
113	104	107	96	110	108	106		90	109	111	112
81	78	85	84	83	85			80			80
		94	96	92							
	1.5/3.0				1.5/3.0						
							2				

		3.2			5	4	5			4	
20	20		3	4.5					40		22
									35		
40	43	45	45	50	47	30	38			45	42
70	70	72	66	75	78	60	52		50	74	50
2,000	2,100	2,400	2,000	2,100	2,800	2,100	2,000		2,100	2,400	1,900
11		17	6	6	6	18	8			16	11
12	19	19	9	6		20	7		10	19	12
113	105	107	96	113	112	106	105		109	110	112
		77	77	75	75						
			91	83							
89	90	96	95	98	96	94	86		93	94	90

Flame Retardant PP Product Selection Guide

	Properties	Condition	Non-halogen						
			VP-6020NH	VP-6020NI	VP-6220N	VI-6112ND	VI-6120N	VI-6220N	
ASTM	Physical	Specific Gravity	-	1.01	1.02	0.93	0.96	1.13	1.22
		Melt Flow Index	230°C, 2.16kg	11	6	10	23	10	5
		Mold Shrinkage	Flow at 3.2mm(MD)	1.0-1.3	1.2-1.5	1.4-1.8	1.3-1.6	1.0-1.2	0.4-0.7
			X-Flow at 3.2mm(TD)	1.1-1.4	1.3-1.6	1.3-1.6	1.4-1.7	1.1-1.3	0.5-0.8
	Mechanical	Tensile Strength at Yield	50mm/min	200	140	260	330	200	650
		Flexural Strength	2mm/min					320	
			2.8mm/min	300	210	280	390		850
		Flexural Modulus	2mm/min					20,000	
			2.8mm/min	15,000	9,900	9,700	16,000		49,000
	Izod Impact Strength	(notched) 1/4inch at 23°C	4	14	9.5	3.5	3.5	6	
(notched) 1/8inch at 23°C		4	14	9	3.5	3.5	6		
Thermal	Heat Deflection Temperature	4.6kgf/cm ² , 6.4mm	120	137	120	130	118	160	
Flame	Flammability	V-2			1.5-3.0	1.5			
		V-0	1.5-3.0	1.5-3.0			1.5-3.0	0.8-3.0	
		5VB	1.5-3.0				1.5-3.0	1.5, 3.0	
		5VA	1.5-3.0				1.5-3.0	1.5, 3.0	

ISO	Physical	Melt Flow Index	230°C, 2.16kg	11	6	10	23	10	5
		Mechanical	Tensile Strength at Yield	50mm/min	20	15	25	30	20
	Flexural Strength		2mm/min	30	23	35	40	35	85
	Flexural Modulus		2mm/min	1,500	1,000	920	1,500	2,000	4,900
	Izod Impact Strength		(notched) at 23°C, 4mm		10		4.2		5.5
	Charpy Impact Strength		(V-notched) at 23°C, 4mm	4		9.5	3.5	2	5.5
	Thermal	Heat Deflection Temperature (Unannealed)	0.45MPa, 4.0mm	120	135	110		120	160
		VICAT Softening Temperature	B/50					150	
			A/50	150		150	153		

About LOTTE



Change Today, Create Tomorrow

CHEMICAL

FOOD

HOTEL

SHOPPING

CONSTRUCTION

RENTAL

A global group creating a better Life for all, **LOTTE** endeavors to Realize this ambitious dream.

MISSION

We enrich people's lives by Providing superior products And services that Our customers love Ans trust.

VISION

Lifetime Value Creator

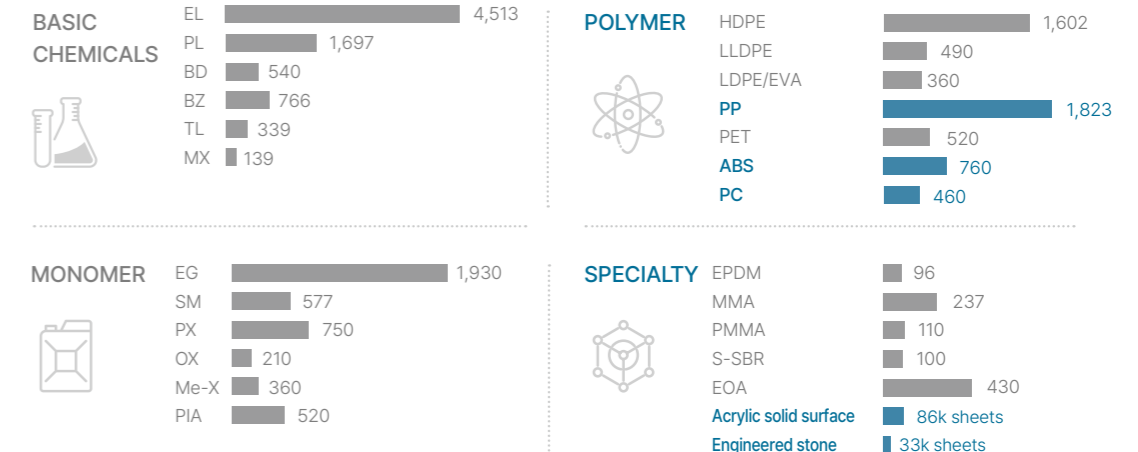
About LOTTE CHEMICAL

LOTTE Chemical's technologies help to enrich our daily lives.

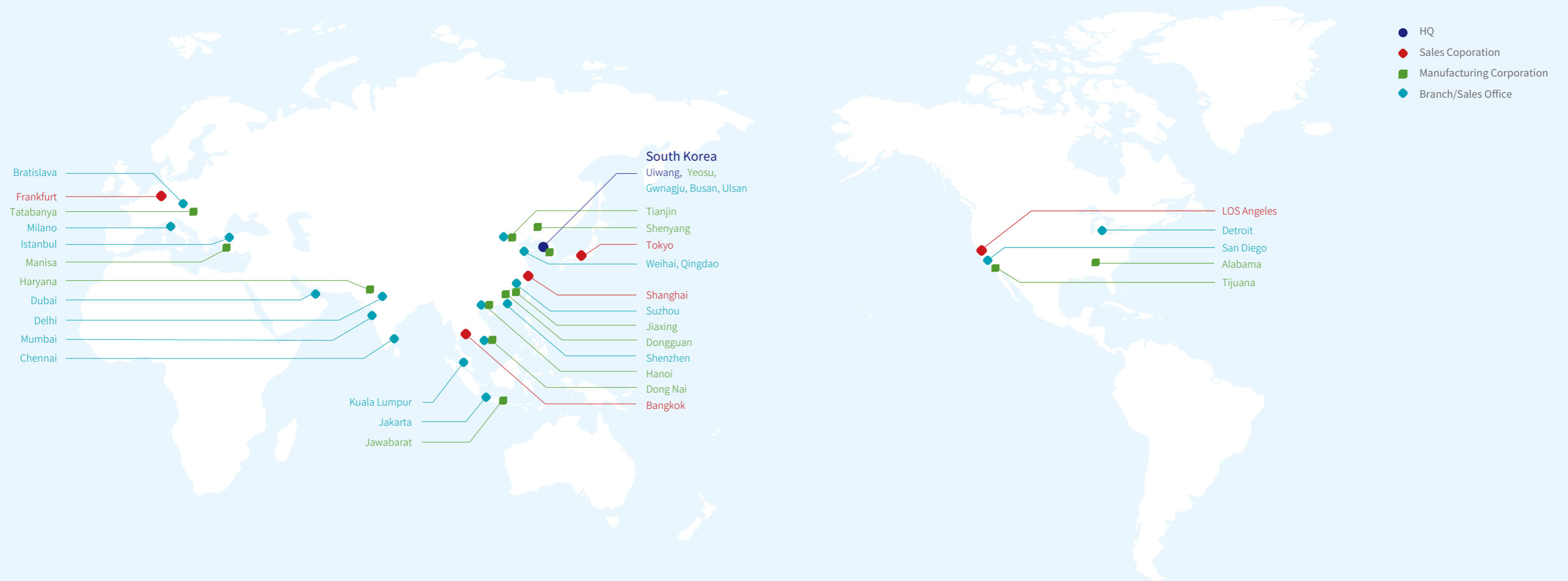
<p>Field of Business</p> 	<p>Basic Chemicals</p> <p>Basic/Intermediate Petrochemicals Polymer Monomer</p>	<p>Ethylene, Propylene, BD, SM, OX, C5 PE, PP, PET EO/EG/GE, EOA, PIA/PTA/MMA</p>
	<p>Advanced Materials</p> <p>High Performance Plastic Materials</p>	<p>STOREX[®] Styrene & general product ABS, ABS Alloy, ASA, PP INFINO Engineering plastics PC, PC Alloy & High Performance EP Performance[®] PP Compound, TPE, Modified adhesive resin, LFT materials</p>
	<p>Construction Materials</p>	<p>Acrylic solid surface, Engineered stone, Porcelain surface</p>

Capacity

(Unit : KTA)



Global Network [Advanced Materials]



South Korea

- Uiwang (Advanced Materials)**
- Yeosu Plant**
Tel. +82-61-689-1221
- Gwangju Sales office**
Tel. +82-62-945-1353
- Busan Sales Office**
Tel. +82-51-465-6829
- Ulsan Sales Office**
Tel. +82-52-267-9804

Sales Corporation

- Los Angeles, U.S.A**
Tel. +1-714-443-0901
- Frankfurt, Germany**
Tel. +49-6196-772-7260
- Shanghai, China**
Tel. +86-21-6270-3000
- Tokyo, Japan**
Tel. +81-3-6369-6440
- Bangkok, Thailand**
Tel. +66-98-273-3447

Production Plant

- ASIA**
- Tianjin, China**
Tel. +86-138-2079-0796
 - Dongguan, China**
Tel. +86-769-8300-9852
 - Shenyang, China**
Tel. +86-138-4209-1356
 - Jiaxing, China**
Tel. +86-135-1132-2242
 - Dong Nai, Vietnam**
Tel. +84-33-270-9970
 - Hanoi, Vietnam**
Tel. +84-33-270-9970
 - Haryana, India**
Tel. +91-98184-59802
 - Bekasi, Indonesia**
Tel. +62-21-5099-8896

- Tatabanya, Hungary**
Tel. +36-34-814-120
- Manisa, Turkey**
Tel. +90-236-213-0343

- AMERICA**
- Tijuana, Mexico**
Tel. +52-664-627-4947
 - Alabama, U.S.A**
Tel. +1-334-821-7728

Branch./Sales Office

- ASIA**
- Suzhou, China**
Tel. +86-138-6211-8097
 - Qingdao, China**
Tel. +86-137-0634-9919
 - Shenzhen, China**
Tel. +86-755-8203-2323
 - Tianjin, China**
Tel. +86-138-2079-0796
 - Weihai, China**
Tel. +86-631-5666-812
 - Ho Chi Minh, Vietnam**
Tel. +84-251-351-4390
 - Hanoi, Vietnam**
Tel. +84-243-227-2072
 - Kuala Lumpur, Malaysia**
Tel. +60-3-2080-5452

- Jakarta, Indonesia**
Tel. +62-21-2788-3391
- Chennai, India**
Tel. +91-44-4299-4255
- Delhi, India**
Tel. +91-124-690-1553
- Mumbai, India**
Tel. +91-22-6110-0177

- MIDDLE EAST**
- Dubai, U.A.E.**
Tel. +971-4-245-1400

- EUROPE**
- Bratislava, Slovakia**
Tel. +421-220-375-114
 - Milano, Italy**
Tel. +39-02-0069-7181
 - Istanbul, Turkey**
Tel. +90-212-4378101-(110)

- AMERICA**
- Detroit, U.S.A**
Tel. +714-443-0901
 - San Diego, U.S.A**
Tel. +714-443-0901