

starex®

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starex®

ABS, ABS ALLOY, ASA





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Product Portfolio

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

starex®

ABS	ABS Alloy	Specialty
General	Transparent MABS	Weatherable Materials
Extrusion	Scratch Resistant MABS	Medical
Flame Retardant	ABS/GF	Anti-microbial & viral
Heat Resistant		Eco-friendly
Metal Plating/Painting		Luminous



General Purpose ABS

APPLICATIONS



HA



E&E



Automotive
Exterior



Motorcycle
(Bike)



Sundries
Stationery, Toys



Flowability



Heat
stability



Surface
quality



Balanced
properties

KEY FEATURES

PRODUCT LINE UP

General

- SD-0150
- SD-0150GP
- HP-0500
- HG-0760GP

High Flow

General

- HF-0660I

High Flow

- HF-0670
- HF-0680

Super High Flow

- HF-0690 M

High Impact

High Impact

- SD-0170HX

Super High Impact

- SD-0190HX

Chemical Resistant

- EG-0763
- EG-7000
- EG-0191

Food Contact

- FP-0140P (NSF 42)

Rapid Molding

- RM-0760

Low Gloss

General

- SL-0100

High Flow

- SL-0620

Antistatic

- EA-0640



Extrusion ABS

APPLICATIONS



Refrigerator
inner



Building &
Construction



Pipe

KEY FEATURES



Thin-wall vacuum
forming capability



Gloss
surface



Impact
strength



Chemical &
Crack resistance

PRODUCT LINE UP

Refrigerator - General

- SV-0157 (CP, General)
- QU-0191 S (CP, Thin-wall)
- FP-0191 (CP, EN10-GB)

Refrigerator - Chemical Resistant

- SU-0191LH (Mixed blowing agent)
- EU-0191S (LBA)

Construction Material

General

- SH-0160
- SV-0167

UV

- SV-0165 U

Pipe

High Impact

- SP-0170

Pressure Resistant

- SP-0180



Flame Retardant ABS

APPLICATIONS



HA
Washing machine,
Refrigerator,
Air-conditioner



E&E



OA machines
Printer, Copier



Wiring devices



Flammability



Heat stability



Processability



Colorability

KEY FEATURES

PRODUCT LINE UP

Halogen

1.5mm V-0

- VE-0800
- VE-0812
- VE-0856 (2.0mm 5VB, 3.0mm 5VA, RTI 80°C)
 - VE-0856 U (Weatherability)
 - VE-0856 G (Low Gloss)
- VE-0860 (2.5mm 5VB, RTI 95°C)
 - VE-0860 P (High Heat Resistant)
 - VE-0860 T (High Impact)
 - VE-0860EX (Extrusion)
- VE-0870 (2.0mm 5VA) *

2.0mm V-0

- VE-0815

2.1mm V-0

- VE-0858 (2.5mm 5VA)

2.5mm V-0

- VE-0810

3.0mm V-2

- VE-0865EL (Extrusion)

Non-halogen

0.75mm V-2

- NH-0825 S
- NH-0826

1.0mm V-2

- NH-0927

* Under Development



Heat Resistant ABS

APPLICATIONS



Automotive
Interior, Exterior,
Lighting

KEY FEATURES



Heat
resistance



Flowability,
Processability



Chemical
resistance



Low TVOC

PRODUCT LINE UP

Injection

Semi Heat Resistant

General

- SR-0315 V (VST 102)
- SR-0300 (VST 102, High Impact)

Low Gloss

- LH-0300 (VST 100)

Heat Resistant (Below VST 105)

- SR-0310FM

High Heat Resistant (VST 106~110)

General

- SR-0320 K

Low TVOC

- SR-0320LT
- SR-0320LI

Super Heat Resistant (Over VST 110)

General

- SR-0325
- SR-0330M
- SR-0340M

Low TVOC

- SR-0325LT
- SR-0325L
- SR-0330L
- SR-0340L

Extrusion

General

- BM-0320 E

Blow Molding

- BM-0320JK



Metal Plating/Painting ABS

APPLICATIONS				KEY FEATURES			
							
Automotive Exterior	E&E TV	Bath, Sanitary	Sundries Cosmetics container, Dinnerware	High adhesion strength, Etching ability	Gloss retention	Chemical resistance	Dimensional Stability
				Metal Plating		Painting	

PRODUCT LINE UP

Metal Plating		Painting	
High Adhesion Strength		PT-0180	
Surface Quality		PT-0180 H	
High Heat Resistant		PT-0180B	
MP-0160 R			
MP-0670			
MP-0310 *			
MP-0320			

* Under Development

Transparent MABS

APPLICATIONS			KEY FEATURES			
						
HA Washing machine, Vacuum cleaner	Sundries Toys, Dispenser, Food container, Cosmetics container	E&E	Clear transparency	Impact strength	Flowability, Processability	Color stability & consistency

PRODUCT LINE UP

General		Specialty	
General		NSF Certification	
TX-0520K		TX-0510F	
TX-0520IM(Ice color)		Chemical Resistant	
High Flow		TX-0520HR	
TX-0550K		Toughness	
		TX-0570	
		Antistatic	
		TX-0550AT	
		Stiffness	
		TX-0585	



Weather Resistant Material

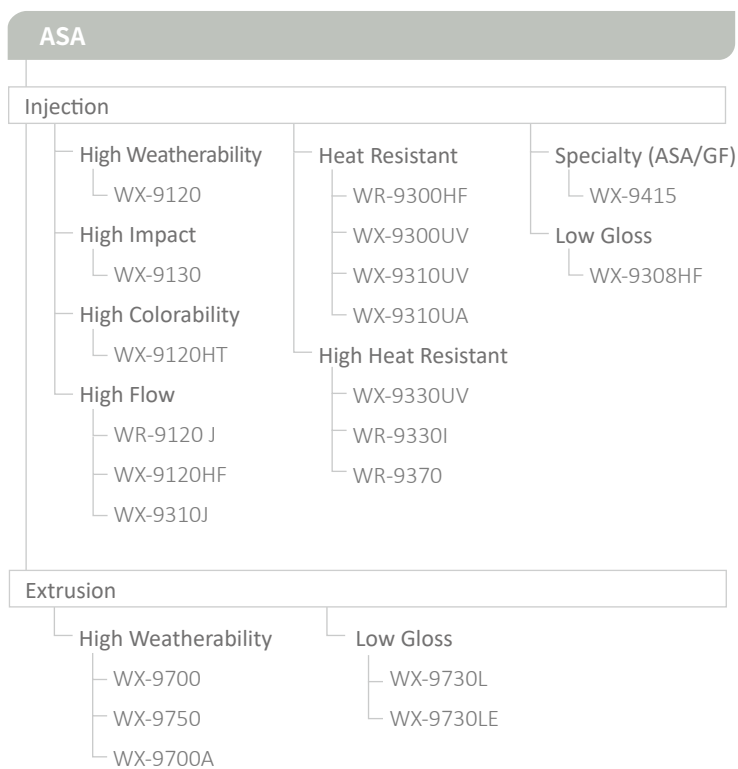
APPLICATIONS



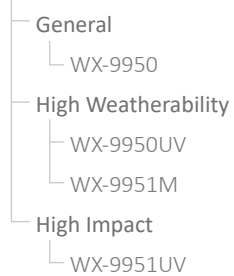
KEY FEATURES



PRODUCT LINE UP



ASA/PMMA



High Weather Resistant ABS

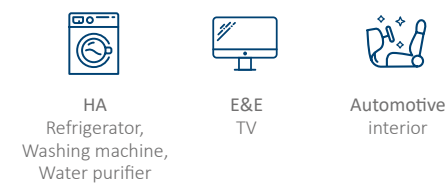


SPECIALTY

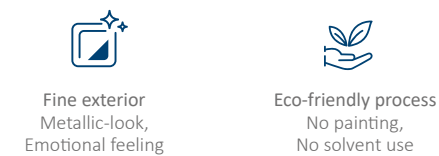
Luminous

Various appearance and texture effect

APPLICATIONS

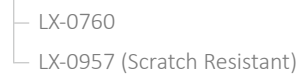


KEY FEATURES



PRODUCT LINE UP

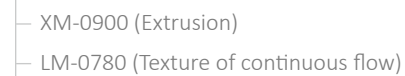
General



Emotional Feeling



High Luminance

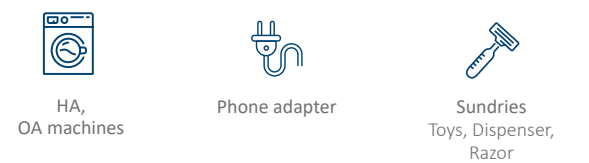


* Under Development

Eco-friendly Material

Material solutions based on the mechanical and chemical recycling of waste products

APPLICATIONS

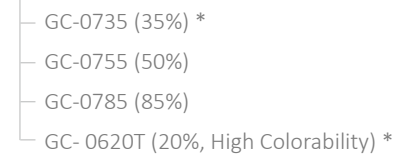


KEY FEATURES

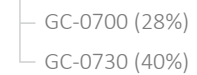


PRODUCT LINE UP

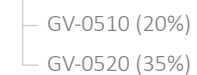
ABS



ABS/PET



Transparent MABS





Anti-microbial & viral Material

Customized material with reliability

APPLICATIONS



HA
Vacuum cleaner,
Humidifier, Water purifier



Sundries
Bath, Sanitary, Card

KEY FEATURES



Anti-microbial &
viral property



Weatherability



Harmlessness to
human body

PRODUCT LINE UP

Anti-microbial evermoir[™]

ABS, ASA

- ABF-0200E (General)
- ABF-0280 (Flame Retardant)
- ABF-0297 (ASA) *

SAN/GF

- ABF-5220E (20%) *
- ABF-5230E (30%) *

PP

- ABF-6200

* Under Development

Medical Solution

Ensured materials for medical devices

APPLICATIONS



Medical devices
Drop spike,
Infusion filter

KEY FEATURES



Biocompatibility



Chemical
resistance



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

PRODUCT LINE UP

General

- MR-0130 (High Flow)
- ML-0750 (CFDA)

Transparent

- MR-0500 (High Modulus)*
- TX-0520ML (CFDA)



Product Selection Guide

Extrusion ABS

				Refrigerator Inner					Industrial Use			Pipe	
Properties	Test Method	Condition	Unit	SV-0157	QU-0191 S	FP-0191	SU-0191 LH	EU-0191 S	SH-0160	SV-0167	SV-0165 U	SP-0170	SP-0180

Physical Properties

Specific Gravity	ASTM D792	-	-	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Melt Flow Index	ASTM D1238	220°C, 10kg	g/10min	5.5	4.3	4.5	3.5	2.5	8	5.2	8.2	6.4	6
	ISO 1133			5.5	4.3	4.5	3.5	2.5	8	5.2	8.2	6.4	6
Mold Shrinkage	ASTM D955	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	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	0.3-0.6	0.3-0.6

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²	430	485	420	500	510	360	390	400	390	370
	ISO 527	5mm/min	MPa				47						
		50mm/min		45	50	43		52	35	40	45	40	45
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	600	740	650	720	720	550	600	770	540	550
	ISO 178	2mm/min	MPa	65	75	65	72	75		65	80	60	65
		5mm/min							55				
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm ²	23,000	24,300	22,000	24,500	24,000	18,000	20,000	26,000	17,500	19,000
	ISO 178	2mm/min	MPa	2,400	2,500	2,300	2,500	2,400		2,000	2,700	1,900	2,100
		5mm/min							1,800				
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	25	22	32	30	29	33	35	22	39	38
		1/8inch at 23°C		30	27		32	40	45	45	25	48	
	ISO 180 1A	at 23°C, 4mm	kJ/m ²	30	26	31	30	40		33	25	34	36
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m ²	30	26	32	31	43	27	35	25	34	38
Rockwell Hardness	ASTM D785	R-scale	-	108	109	103	108	107	101	100	92	94	98
	ISO 2039-2			108	108	102	108	107	101	100	95	101	101

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	89	91		89	92	90	85	88	88	
		4.6kgf/cm ² , 6.4mm		95		95	95	99		95	98		
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm		80	81	83	84	85		78	81	81	77
		0.45MPa, 4.0mm		90	94	95	96	97		92	94	93	92
	ISO 75-2 (Annealing)	1.8MPa, 4.0mm									99	99	100
		0.45MPa, 4.0mm									103	103	104
VICAT Softening Temperature	ISO 306	B/50	°C	100	102	101	102	102	99	100	90	99	97
		B/120									103		99

Flame Characteristics

Flammability	UL94	HB	mm	0.75-6.0	0.75-3.0	0.75		0.75/3.0	1.5/3.0	1.5/3.0	1.5/3.0	1.5/3.0	1.5.3.0
		5VA									2.5		



General Purpose ABS

				General			
Properties	Test Method	Condition	Unit	SD-0150	SD-0150GP	HP-0500	HG-0760GP

Physical Properties

Specific Gravity	ASTM D792	-	-	1.04	1.04	1.05	1.04
Melt Flow Index	ASTM D1238	200°C, 5kg	g/10min	2	1.8	4	
		220°C, 10kg		16			
		250°C, 10kg		16			
	ISO 1133	200°C, 5kg		2	1.8	4	
		220°C, 10kg		16			
		250°C, 10kg		16			
Mold Shrinkage	ASTM D955	Flow at 3.2mm(MD)	%	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

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²	420	360	480	400
		50mm/min					
	ISO 527	5mm/min	MPa				
		50mm/min		51	35	40	40
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	630	590	700	600
	ISO 178	2mm/min	MPa	76	65	60	60
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	21,000	21,000	23,000	20,000
	ISO 178	2mm/min	MPa	2,500	2,200	2,200	2,000
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	22	28	13	23
		1/8inch at 23°C		35		13	24
	ISO 180 1A	at 23°C, 4mm	kJ/m²	21	21	13	23
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m²	24	25	14	20
Rockwell Hardness	ASTM D785	R-scale	-	109	105	114	108
	ISO 2039-2			109	105	114	108

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	84		91	82
		4.6kgf/cm², 6.4mm				99	
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm			79	82	76
		0.45MPa, 4.0mm				96	88
	ISO 75-2 (Annealing)	1.8MPa, 4.0mm					93
		0.45MPa, 4.0mm					98
VICAT Softening Temperature	ISO 306	B/50	°C	99	97	100	96
		B/120					

Flame Characteristics

Flammability	UL94	HB	mm	1.0/1.5/3.0/6.0	1.0/1.5/3.0/6.0	1.0/1.5/3.0	1.2/1.5/3.0/6.0
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High Flow				High Impact		Chemical Resistant			Food Contact	Rapid Molding	Low Gloss		Antistatic
HF-0660I	HF-0670	HF-0680	HF-0690 M	SD-0170HX	SD-0190HX	EG-0763	EG-7000	EG-0191	FP-0140P	RM-0760	SL-0100	SL-0620	EA-0640

1.04	1.04	1.04	1.04	1.02	1.02	1.04	1.08	1.04	1.04	1.05	1.03	1.04	1.05
3.6	4.5	5.5	8.5						1.5	4.5	2		1.8
				8	8	12		9			7.5		
							35						
3.6	4.5	5.5	8.5						1.5	4.5	2		1.8
				8	8	12		9			7.5		
							35						
0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.7	0.3-0.7	0.3-0.6	0.3-0.6	0.4-0.6	0.3-0.6	0.4-0.6	0.4-0.7	0.3-0.6	
0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.7	0.3-0.7	0.3-0.6	0.3-0.6	0.4-0.6	0.3-0.6	0.4-0.6	0.4-0.7	0.3-0.6	

400	380	420	400	370	350	390		460	410	460		320	450
							390					330	
										30			
40	42	40	40	35	30	36	38	35	40		35	34	40
600	580	630	580	600	570	550	570	650	620	675	450	480	750
60	68	60	58	60	55	55	55	50	60	50	57	54	
20,000	21,000	21,000	21,000	18,800	18,000	20,000	20,000	23,000	21,000	24,500	16,000	16,000	26,000
2,000	2,400	1,900	2,100	1,800	1,700	2,000	1,960	2,000	2,200	2,000	1,800	1,700	2,200
22	19	20	19	40	44	26	20	24	20	15	6		19
26	21			50	53	32	21			20	7	18	
22	18	20					21	30	20		12	26	22
21	20	18	19	35	40	29	20	36	21	15	11	24	27
108	108	107	104	90	88	100	95	98	110	112	97	90	95
108	109	107	104	88	85	100	95	98	110	111	93	91	95

85	85	85	82			84	78	88		90	85	75	81
93			90								96		96
74	74		73			76		88			77	70	78
86			84			90					92		91
											100		
											103		
96	92	97	94	91	88	95	90	98	99	99	97	92	97
											100		100

1.0/1.5/3.0/6.0	1.5/3.0	1.5/3.0	1.5/3.0			1.5, 3.0, 6.0	1.5,3.0	1.0-6.0		1.5,3.0	1.5,3.2	1.5,3.0	
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Flame Retardant ABS

				Halogen				
Properties	Test Method	Condition	Unit	VE-0800	VE-0812	VE-0856	VE-0856 U	VE-0856 G

Physical Properties

Specific Gravity	ASTM D792	-	-	1.16	1.16	1.15	1.16	1.17
Melt Flow Index	ASTM D1238	200°C, 5kg	g/10min	3.7	3.3	3.5	3.6	3.5
		220°C, 10kg						
	ISO 1133	200°C, 5kg		3.7	3.3	3.5	3.6	
		220°C, 10kg						
Mold Shrinkage	ASTM D955	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
		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

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min 50mm/min	kgf/cm²	410	400	400	400	370
	ISO 527	5mm/min 50mm/min	MPa			42	42	
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	550	550	550	570	570
	ISO 178	2mm/min	MPa	62	68	65	64	
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	19,500	19,000	19,000	20,000	22,000
	ISO 178	2mm/min	MPa	2,000	2,200	2,200	2,100	
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	19	15	20	16	
		1/8inch at 23°C			17	21	20	14
	ISO 180 1A	at 23°C, 4mm	kJ/m²	18	20	25	21	
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m²	22	18	25	23	
Rockwell Hardness	ASTM D785	R-scale	-	97	99	92	95	105
	ISO 2039-2			102	103	95	95	

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	80	80	70	80	78
		4.6kgf/cm², 6.4mm			89	100		89
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm			73	75	72	
		0.45MPa, 4.0mm			85	87	84	
	ISO 75-2 (Annealing)	1.8MPa, 4.0mm 0.45MPa, 4.0mm						
VICAT Softening Temperature	ISO 306	B/50	°C	87	89	90	90	
		B/120				91		

Flame Characteristics

Flammability	UL94	V-2	mm					
		V-1						
		V-0		1.5	1.5	1.5	1.5	1.5
		5VA				3.0	3.0	3.0
		5VB				2.0	2.0	2.0

Other Properties

Yellow Index	ASTM D1925	3.2mm	-
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Halogen								Non-halogen		
VE-0860	VE-0860 P	VE-0860 T	VE-0860EX	VE-0815	VE-0858	VE-0810	VE-0865EL	NH-0825 S	NH-0826	NH-0927

1.17	1.18	1.17	1.18	1.15	1.15	1.15	1.14	1.05	1.05	1.05
1.6				4	3.5	5		6.5	6	3.5
	14	12	16				5			
1.6				4	3.5	5		6.5		3.5
	14	12	16				5		65	
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	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	0.3-0.6	0.4-0.7	0.3-0.6	0.3-0.6	0.3-0.6

440	380	380	440	420	400	410	420	420	430	550
45	43	43			42					
			47	40		40	43	41	48	50
650	560	550	600	560	550	550	620	640	650	670
66	70	70	72	60	65	62	64	70	76	78
23,000	20,000	19,000	21,000	19,000	19,000	18,000	19,000	23,000	23,000	26,000
2,350	2,300	2,300	2,300	2,000	2,200	1,900	2,000	2,400	2,400	2,600
14	14	27	20	20	20	17	33	20	14	16
15	15	34			21			21	15	18
14	23	23	25	17	25	18	35	18	15	21
16	24	24	23	20	25	21	35	24	18	21
104	102	97	98	96	92	96	97	105	111	110
104	97	97	98	102	95	104	100	113	113	112

85	89	80	82	80	70	78			82	88
98		92			100					94
85	80	80	78		75		82	74	75	78
98	92	92	90		87		89	87		90
			84							89
			91							85
97	99	94	94	87	90	87	97	93	94	96
		98	97		91					99

								0.75	0.75	1.0
							3			
1.5	1.5	1.5	1.5	2.0	2.1	2.5				
					2.5					
2.5	2.5	2.5	2.5		2.5					

15	
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Heat Resistant ABS

				Injection				
Properties	Test Method	Condition	Unit	SR-0315 V	SR-0300	LH-0300	SR-0310FM	SR-0320 K

Physical Properties

Specific Gravity	ASTM D792	-	-	1.04	1.05	1.04	1.06	1.06
Melt Flow Index	ASTM D1238	220°C, 10kg	g/10min	26	13	10	20	9
		250°C, 2.16kg						
	ISO 1133	220°C, 10kg		26	13	10	20	9
		250°C, 2.16kg						
Mold Shrinkage	ASTM D955	Flow at 3.2mm(MD)	%	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7
		X-Flow at 3.2mm(TD)		0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²	400		354		
		50mm/min			450		400	470
	ISO 527	50mm/min	MPa	42	48	36	50	50
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	640	620	465	640	740
		10mm/min						
	ISO 178	2mm/min	MPa	73	76	58	78	74
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	22,000	23,000	17,593	21,000	24,000
		10mm/min						
	ISO 178	2mm/min	MPa	2,500	2,500	2,060	2,600	2,400
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	21	23	10	15	17
		1/8inch at 23°C		25	30	15	18	19
		1/4inch at -30°C						
		1/8inch at -30°C						
	ISO 180 1A	at 23°C, 4mm	kJ/m²	24	22	17	17	17
Charpy Impact Strength (V-notched)	ISO 179 1eA	at -30°C, 4mm					10	
		at 23°C, 4mm	KJ/m²	24	23	16	17	17
		at -30°C, 4mm						
Rockwell Hardness	ASTM D785	R-scale	-	109	110	100	109	110
	ISO 2039-2			108	110	100	109	110

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	90	88	88	90	95
		4.6kgf/cm², 6.4mm		99		99		
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm		80	82	80	80	84
		0.45MPa, 4.0mm		93	95	94	92	
	ISO 75-2 (Annealing)	1.8MPa, 4.0mm				100		
		0.45MPa, 4.0mm				103		
VICAT Softening Temperature	ISO 306	B/50	°C	100	102	100	103	106
		B/120		102				

Other Properties

Yellow Index	ASTM D1925	3.2mm	-					
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Injection									Extrusion	
SR-0320LT	SR-0320LI	SR-0325	SR-0330M	SR-0340M	SR-0325LT	SR-0325L	SR-0330L	SR-0340L	BM-0320 E	BM-0320JK

1.05	1.05	1.06	1.07	1.07	1.06	1.06	1.07	1.07	1.05	1.04
10	6	7.5	3	2.5	4	8	3.5	2.6	3.3	4.5
			2							
10	6	7.5	3	2.5	4	8	3.5	2.6	3.3	4.5
			2							
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	0.35-0.45	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	0.45-0.55	0.3-0.6

460	400		420	430					450	
		500			440	500	520	490		430
50	45	50	48	47	50	48	51	48	44	44
700	610		640	640	620				620	600
		750				750	720	720		
80	74	73	78	78	85	75	78	85	70	68
23,800	20,000		22,510	22,000	21,000				20,000	20,500
		25,000				24,000	24,000	24,000		
2,500	2,400	2,500	2,350	2,500	2,500	2,400	2,400	2,500	2,300	2,250
17	22	12	12	14	12	12	13	9	15	30
20	24	15	13	16	15	15	14	11	20	
			7							
			6							
18	23	12	14	14	15	13	14	10	20	30
			9		7		8			17
18	24	12	15	13	15	13	13	11	20	30
			10							
113	110	115	113	110	113	115	115	115	105	102
113	110	115	113	110	113	115	114	115	105	102

94	95	103	104		100	103	107	112	97	91
			116		110				107	
85	86	92	96		92	93	98	103	86	84
			112		105				98	
			103							
			112							
106	107	115	118	120	113	115	120	126	108	
			119							

			31.2							
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Metal Plating/Painting ABS

				Metal Plating			Painting		
Properties	Test Method	Condition	Unit	MP-0160 R	MP-0670	MP-0320	PT-0180	PT-0180 H	PT-0180B

Physical Properties

Specific Gravity	ASTM D792	-	-	1.04	1.04	1.05	1.04	1.04	1.04
Melt Flow Index	ASTM D1238	200°C, 5kg	g/10min	1.5	2.3		3.6	2.3	
		220°C, 10kg			6			33	
	ISO 1133	200°C, 5kg			2.3		3.6	2.3	
		220°C, 10kg			6			33	
Mold Shrinkage	ASTM D955	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
		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

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²	480	450	400	400	380	
		50mm/min							430
	ISO 527	50mm/min	MPa		51	47	42	42	40
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	690	660	630	610	600	
		5mm/min							630
	ISO 178	2mm/min	MPa		72	74	75	66	60
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	23,000	21,500	21,500	20,000	20,000	
		5mm/min							21,000
	ISO 178	2mm/min	MPa		2,350	2,190	2,400	2,100	2,200
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	28	24	25	20	33	33
		1/8inch at 23°C				27			35
	ISO 180 1A	at 23°C, 4mm			27	21	20	32	33
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m²		25	22	24	32	33
Rockwell Hardness	ASTM D785	R-scale	-	109	108	109	106	105	102
	ISO 2039-2				108	110	106	105	102

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	88		92		84	
		4.6kgf/cm², 6.4mm				105			
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm				86			
		0.45MPa, 4.0mm				100			
VICAT Softening Temperature	ISO 306	B/50	°C		98	106	97	97	97

Flame Characteristics

Flammability	UL94	HB	mm	1.5,3				1.5,3.0	
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Transparent MABS

				General			Specialty				
Properties	Test Method	Condition	Unit	TX-0520K	TX-0520IM	TX-0550K	TX-0510F	TX-0520HR	TX-0570	TX-0550AT	TX-0585

Physical Properties

Specific Gravity	ASTM D792	-	-	1.09	1.09	1.08	1.1	1.08	1.08	1.09	1.09
Melt Flow Index	ASTM D1238	220°C, 10kg	g/10min	22	22	27	14	10	4	25	7
	ISO 1133	220°C, 10kg		22	22	27	14	10	4	25	7
Mold Shrinkage	ASTM D955	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
		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

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²	440	440	400	430	370	380	400	520
	ISO 527	50mm/min	MPa	50	50	40	47	45	47	30	50
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	550	550	600	600	550	550	620	730
	ISO 178	2mm/min	MPa	50	50	55	55	45	50	60	72
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	19,000	19,000	19,500	20,000	19,000	17,000	22,000	23,000
	ISO 178	2mm/min	MPa	2,200	2,200	1,870	2,200	2,000	1,700	2,200	2,400
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	14	14	17	16	16	16	14	12
		1/8inch at 23°C		15	15	18	16	18	18	15	13
Charpy Impact Strength (V-notched)	ISO 180 1A	at 23°C, 4mm	kJ/m²	12	12	17	12	15	12	13	11
Rockwell Hardness	ASTM D785	R-scale	-	110	110	105	106	101	102	100	115
	ISO 2039-2			110	110	106	106	101	102	100	114

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	81	81	81	80	75	80	77	82
		4.6kgf/cm², 6.4mm					88				
VICAT Softening Temperature	ISO 306	B/50	°C	92	92	90	89	86	91	85	94

Flame Characteristics

Flammability	UL94	HB	mm	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0	1.5-3.0
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Other Properties

Transmissivity	ASTM D1003	3.2mm	%	90	90	90	88	90	90	88	90
Haze	ASTM D1003	3.2mm	%	2	2	2	3	2	2	4	2



Weather Resistant Material

				ASA								
Properties	Test Method	Condition	Unit	WX-9120	WX-9130	WX-9120HT	WX-9120HF	WR-9120 J	WX-9310J	WR-9300HF	WX-9300UV	WX-9310UV

Physical Properties

Specific Gravity	ASTM D792	-	-	1.06	1.06	1.07	1.07	1.07	1.07	1.07	1.08	1.08
Melt Flow Index	ASTM D1238	220°C, 10kg	g/10min	16	3	18	39	26	21	12	10	6
		250°C, 2.16kg		6.5								
	ISO 1133	220°C, 10kg		16	3	18	39	26	21	12	10	6
		250°C, 2.16kg		6.5								
Mold Shrinkage	ASTM D955	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	0.4-0.7	0.3-0.6	0.4-0.7
		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	0.4-0.7	0.3-0.6	0.4-0.7

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²	460	430	370	400	450	440	450		440
		50mm/min									440	
	ISO 527	5mm/min	MPa	43						44		
		50mm/min			45	35	40	43	48		47	49
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	650	550	560	600	650	680	680	630	680
	ISO 178	2mm/min	MPa	67	65	65	65	72	75	67	70	70
		2.8mm/min										
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	21,000	19,000	16,400	19,000	21,000	22,000	22,000	20,000	22,000
	ISO 178	2mm/min	MPa	2,100	2,000	2,100	2,000	2,260	2,300	2,100	2,250	2,400
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf·cm/cm	10			7	9	8	10	8	9
		1/8inch at 23°C		18	50	18	12	21	11	15	16	18
	ISO 180 1A	at 23°C, 4mm	kJ/m²	18	12	15	12	9		12	10	16
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m²	12	14	12	10	14	12	13	12	14
Rockwell Hardness	ASTM D785			104	98	97	108	105	106	106	104	105
	ISO 2039-2	R-scale	-	104	98	98	108	105	107	106	104	106

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	82		81	75	87	90	87		90
		4.6kgf/cm², 6.4mm		92			85			92		97
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm		77	77	72	75	77	78	80	77	80
		0.45MPa, 4.0mm		88			85	91				96
	ISO 75-2 (Annealing)	1.8MPa, 4.0mm						94				102
		0.45MPa, 4.0mm						99				106
VICAT Softening Temperature	ISO 306	B/50	°C	97	94	89	95	98		100	96	101
		B/120										103

Flame Characteristics

Flammability	UL94	HB	mm							1.5		
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Other Properties

Yellow Index	ASTM D1925	3.2mm	-	25								
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ASA											ASA/PMMA				High Weatherable ABS
WX-9310UA	WX-9330UV	WR-9330I	WR-9370	WX-9415	WX-9308HF	WX-9700	WX-9750	WX-9700A	WX-9730L	WX-9730LE	WX-9950	WX-9950UV	WX-9951UV	WX-9951M	WR-0790

1.08	1.09	1.07	1.07	1.24	1.07	1.07	1.07		1.06	1.06	1.12	1.16	1.15	1.12	1.06
7	4	5	3	5	12	9	4	5	3	3.5	6	5	6	3.5	30
7	4	5	3	5	12	9	4	5	3	3.5	6	5	6	3.5	30
0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.2-0.4	0.4-0.7	0.4-0.7	0.6-0.8	0.3-0.6	0.6-0.8	0.6-0.8	0.4-0.7	0.4-0.7	0.4-0.8	0.5-0.8	0.3-0.6
0.4-0.7	0.4-0.7	0.4-0.7		0.2-0.4	0.4-0.7	0.4-0.7	0.6-0.8	0.3-0.6	0.6-0.8	0.6-0.8	0.4-0.7	0.4-0.7	0.4-0.8	0.5-0.8	0.3-0.6

440	450	480	500	850		430	410	400	320	330					450
					450						500	640	550	440	
	45			80		44	43								
49		52	49		45			40	27	28	46	65	58	44	45
660	640	710	710	1,062	680	620	570	600	420	420	700	780	700	550	650
70	73	80	70	130	75	65	62	60	47	46	68	90	80	58	
															70
20,500	21,000	23,000	23,000	61,000	22,000	20,000	18,000	19,000	14,000	14,100	20,000	23,000	21,000	17,000	22,000
2,200	2,300	2,400	2,160	6,100	2,300	2,030	1,950	2,100	1,550	1,500	2,100	2,600	2,300	1,700	2,200
	8			3.5	10	10	10		11		7	4	5.5	8	20
18	22	14	15	3.5	13	50	53	50	30	25	7	4	5.5	11	24
		9	9	4.2	11	10	41					4	5.5	10	18
14	13	10	13	4.5		15	32	33	18	20	7	4	5.5	10	20
100	103	107	106	115	109	99	95	95	75	80	108	118	112	104	110
100	103	108	106	115	109	96	95	95	70	78	107	118	112	102	110

90	92		94	109	96	77	72		73	73		85	83		75
	101			110			87		80	80					
80		82	87	109	83	75	77		72	73		77	75		74
		97	103	110		88	88		79	79			87		
		103	104												
		107	109												
100	103	104	109	115	103	95	94	97	83	84	96	102		91	93

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SPECIALTY

				LUMINOUS				
Properties	Test Method	Condition	Unit	LX-0760	LX-0957	LX-0951EF	XM-0900	LM-0780

Physical Properties

Specific Gravity	ASTM D792	-	-	1.04	1.09	1.04	1.09	1.07
Melt Flow Index	ASTM D1238	200°C, 5kg	g/10min	3.2	5.5			5
		220°C, 10kg		12			4.5	
	ISO 1133	200°C, 5kg		3.2	5.5			5
		220°C, 10kg		12			4.5	
Mold Shrinkage	ASTM D955	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
		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

Mechanical Properties

Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm²		460	400	500	450
		50mm/min		420				
	ISO 527	5mm/min	MPa	49				
		50mm/min		45		37	50	47
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	610	700	620	700	730
	ISO 178	2mm/min	MPa	72	76	71	75	78
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	21,000	26,000	21,500	22,000	27,000
	ISO 178	2mm/min	MPa	2,400	2,400	2,400	2,100	2,800
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	14	15	14	7	6
		1/8inch at 23°C		14	17	15	8	7
	ISO 180 1A	at 23°C, 4mm	kJ/m²	17	14	14	6	6
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	KJ/m²	19	14	16	6	
Rockwell Hardness	ASTM D785	R-scale	-	107	111	108	110	108
	ISO 2039-2			107	114	109	113	112

Thermal Properties

Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	85	85	86	83	85
		4.6kgf/cm², 6.4mm		94	94	90	92	
	ISO 75-2 (Unannealed)	1.8MPa, 4.0mm		77	77	78	75	75
		0.45MPa, 4.0mm			88	89	83	
VICAT Softening Temperature	ISO 306	B/50	°C	96	94	97	98	96

Flame Characteristics

Flammability	UL94	V-2	mm					1.5,3.0
		V-0						
		5VA						

Eco-friendly						evermoin (Antimicrobial)			Medical		
GC-0755	GC-0785	GC-0700	GC-0730	GV-0510	GV-0520	ABF-0200E	ABF-0280	ABF-6200	MR-0130	ML-0750	TX-0520ML

1.04	1.04	1.1	1.12	1.09	1.09	1.05	1.18	0.93	1.05	1.04	1.09
1.5						4	5		4		
40					20	18				40	22
1.5						4	5		4		
40					20	18				40	22
		0.6-0.8	0.6-0.8	0.4-0.8	0.4-0.8	0.3-0.6	0.3-0.6	1.0-1.6	0.3-0.6	0.3-0.6	0.4-0.8
		0.6-0.8	0.6-0.8	0.4-0.8	0.4-0.8	0.3-0.6	0.3-0.6	1.0-1.6	0.3-0.6	0.3-0.6	0.4-0.8

410	360			400	400	380			410	410	470
		460	460				350	280			
									35		
43	40	37	40	38	35	30	35			45	38
650	570	630	630	550	550	610	550	320	630	650	
72	64	56	56	50	45	60	65		50	74	45
24,000	20,000	19,000	19,000	19,000	18,000	22,000	21,000	11,000	22,000	23,000	
2,400	2,100	1,800	1,800	1,900	1,800	2,100	2,100		2,100	2,400	1,800
16	16	16	16	14	14	20	10		18	22	14
18	18	48	57	15	15			10	21	23	15
		12	35			18	9			16	
20	19	13	13	12	12	20	9		10	19	
		95	95	109	109	106	94	75	109	111	108
		95	95	106	109	106	94		108	110	112

		80	80	80	78						78
		89	89				125				
74	76	71	71								
		83	83								
		91	88	88		94	87		93	94	90

		1.5, 3.0									
							2				
							2.5				



About LOTTE

A global group creating a better life for all, LOTTE endeavors to realize this ambitious dream.



New Today,
Better Tomorrow

MISSION

We enrich people's lives by providing superior products and services that our customers love and trust.

VISION

Lifetime
Value
Creator

Major Business Unit Portfolio



About LOTTE CHEMICAL

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

Field of Business



Basic
Chemicals

Basic/Intermediate Petrochemicals
Polymer
Monomer

Ethylene, Propylene, BD, SM, OX, C5
PE, PP, PET
EO/EG/GE, EOA, PIA/PTA/MMA

Advanced
Materials

High Performance
Plastic Materials

STOREx Styrene & general product ABS, ABS Alloy, ASA, PP
INFINO Engineering plastics PC, PC Alloy & High Performance EP
Performance materials PP Compound, TPE, Modified adhesive resin,
LFT, EPP

Construction Materials
Water Treatment
Membrane

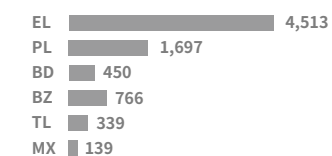
Acrylic solid surface, Engineered stone, Porcelain surface

Capacity

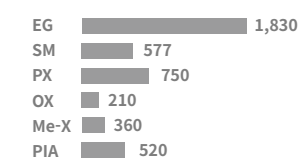
(Unit: KTA)



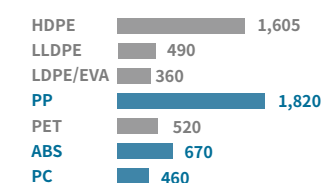
BASIC CHEMICALS



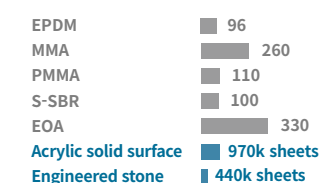
MONOMER



POLYMER



SPECIALTY



Sales & Production Sites



HQ/R&D

HQ Seoul
R&D Uiwang, Daejeon

PRODUCTION PLANT

Asia Malaysia, Uzbekistan, Pakistan,
South Korea, China, Vietnam,
India, Indonesia
Europe Hungary, Turkey (E-stone)
America U.S, Mexico

SALES CORPORATION

Asia China, Thailand, Japan
Europe Germany, Poland
America/Africa U.S, Nigeria

22 Countries

26 Production bases

Employees Worldwide



Including major subsidiaries
(Domestic & Overseas)

10,765

Business Performance(2021)

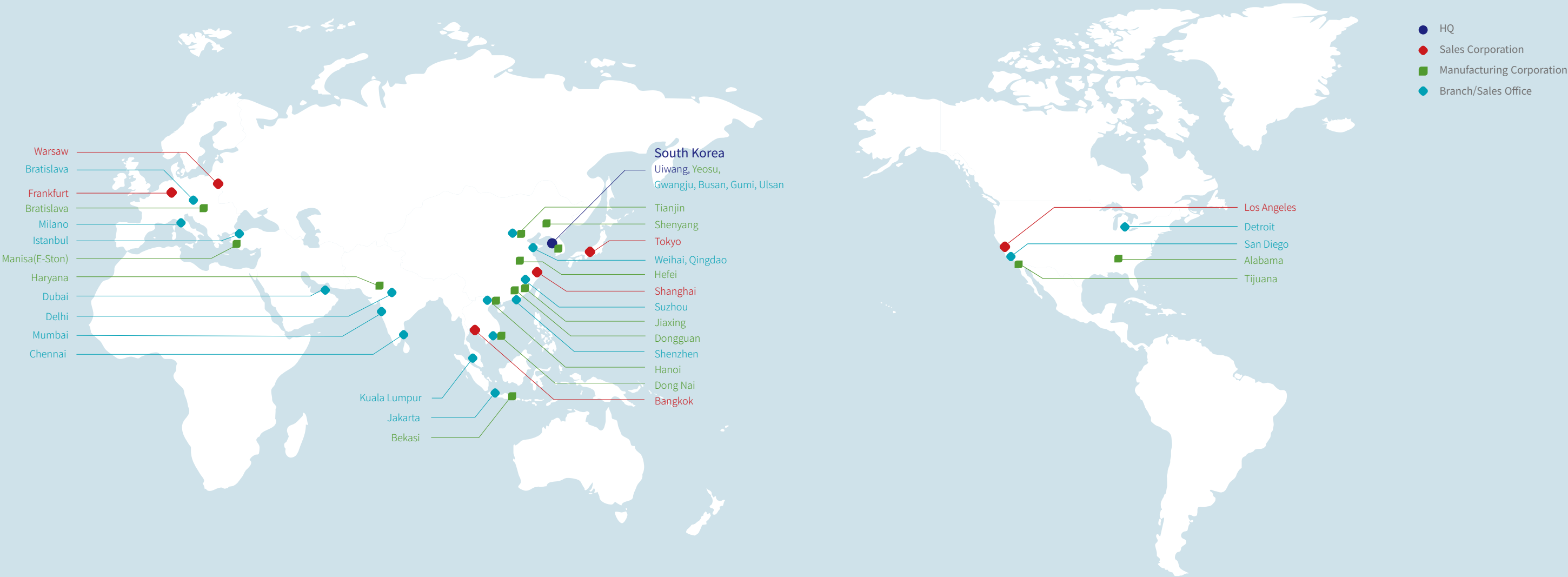
(Unit: KRW)



Sales 18,120 billion

Capital 17,137 billion

Global **Network** [Advanced Materials]



SOUTH KOREA	Sales Corporation	Production Plant	Branch/Sales Office
Uiwang (Advanced Materials) Tel. +82-31-596-3114	Los Angeles, U.S.A. Tel. +1-714-443-0907	ASIA	ASIA
Yeosu Plant Tel. +82-61-689-1459	Frankfurt, Germany Tel. +49-6196-772-7260	Tianjin, China Tel. +86-22-5868-0291(620)	Suzhou, China Tel. +86-512-6262-0323
Gwangju Service Office Tel. +82-62-945-1353	Shanghai, China Tel. +86-21-6270-3000	Dongguan, China Tel. +86-769-8300-9852	Qingdao, China Tel. +86-532-8577-9681
Busan Service Office Tel. +82-51-465-6829	Tokyo, Japan Tel. 81-3-6369-6429	Shenyang, China Tel. +86-198-2402-0134	Shenzhen, China Tel. +86-755-8203-2323
Gumi Sales Office Tel. +82-54-468-2811	Bangkok, Thailand Tel. +66-2-624-6726	Hefei, China Tel. +86-186-0573-0711	Tianjin, China Tel. +86-22-2836-4258
Ulsan Sales Office Tel. +82-52-267-9804	Warsaw, Poland Tel. +48-506-760-890	Jiaxing, China Tel. +86-185-0573-7977	Weihai, China Tel. +86-631-5666-812
		Dong Nai, Vietnam Tel. +84-33-270-9970	Hanoi, Vietnam Tel. +84-243-227-2071
		Hanoi, Vietnam Tel. +84-33-270-9970	Dong Nai, Vietnam Tel. +84-251-351-4390
		Haryana, India Tel. +91-88001-02170	Kuala Lumpur, Malaysia Tel. +60-3-2283-3714
		Bekasi, Indonesia Tel. +62-21-5099-8896	
			Jakarta, Indonesia Tel. +62-21-2788-3391
			Chennai, India Tel. +91-44-4299-4255
			Delhi, India Tel. +91-124-4153-804
			Mumbai, India Tel. +91-22-6110-0177
			EUROPE
			Bratislava, Slovakia Tel. +421-220-375-114
			Milano, Italy Tel. +39-02-02 0069-7182
			Istanbul, Turkey Tel. +90-212-437-8101(115)
			AMERICA
			Detroit, U.S.A. Tel. +1-248-509-7458
			San Diego, U.S.A. Tel. +1-619-551-7000