

Create Infinite Possibilities

INFINO[®]

PC & PC Alloy, High Performance EP



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INFINO[®] is LOTTE Chemical's **high-performance** engineering plastics brand, symbolizing the company's commitment to pursuing **infinite** possibilities and creating **differentiated** solutions and values for customers.



Product Portfolio

INFINO[®] PC & PC Alloy

PC	PC/ABS	PC/ABS/GF	PC/GF	Special Alloy
<ul style="list-style-type: none"> Polymerization General Flame Retardant Eco-friendly Medical 	<ul style="list-style-type: none"> General Metal Plating Flame Retardant Eco-friendly Luminous 	<ul style="list-style-type: none"> Flame Retardant Eco-friendly 	<ul style="list-style-type: none"> General High Impact Flame Retardant Dimensional Stability Eco-friendly 	<ul style="list-style-type: none"> PC/ASA <ul style="list-style-type: none"> General High Heat PC/PET <ul style="list-style-type: none"> High Impact High Modulus PC/PBT

INFINO[®] High Performance EP

PPA	PBT	mPPE	PPS	PCT
<ul style="list-style-type: none"> PPA/GF <ul style="list-style-type: none"> High Modulus High Heat Flame Retardant (Non-halogen) 	<ul style="list-style-type: none"> PBT PBT/GF <ul style="list-style-type: none"> General Flame Retardant Metal Adhesion PBT/ABS/GF PBT/ASA/GF PBT/PET/GF PBT/PET/MF 	<ul style="list-style-type: none"> mPPE mPPE/GF PA/PPE PA/PPE/GF PA/PPE/CNT 	<ul style="list-style-type: none"> PPS/GF PPS/GF/MF 	<ul style="list-style-type: none"> PCT/GF

Product

APPLICATIONS

- Lighting
- Building & Construction
- E&E
- Sundries Stationery, Toys
- Automotive



APPLICATIONS

- E&E
TV, Laptop, OA machines, Adapter
- Energy
Battery, Smart meter, Switch
- Railway vehicle

KEY FEATURES

- Flame retardant & Heat resistance
Cl, Br free
- Flowability
- High modulus
- Impact strength
- Surface quality

Transparent PC

Excellent optical and impact strength performance

KEY FEATURES

- Optical properties
High transmittance
- UV resistance
- Flowability
- Impact strength
- Various colors available

PRODUCT LINE-UP

General	Extrusion	Automotive
<ul style="list-style-type: none"> SC-1100(U)R SC-1102UR SC-1220(U)R SC-1222UR SC-1280UR (Lighting) QC-1100UR (1.6T V2, f1) QC-1220UR (1.6T V2, f1) 	<ul style="list-style-type: none"> SC-1060P SC-1060U SC-1063U 	<ul style="list-style-type: none"> General <ul style="list-style-type: none"> LT-1100 LT-1220 High Flow <ul style="list-style-type: none"> LT-1350 LT-1550 Diffusion <ul style="list-style-type: none"> TP-1020U TP-1025U High Impact <ul style="list-style-type: none"> IV-1025U IV-1075C

Flame Retardant PC & PC Alloys

Flame retardant solution with a material property balance

FLAME RETARDANT PC PRODUCT LINE-UP

General	Reinforced
<ul style="list-style-type: none"> Semi-transparent <ul style="list-style-type: none"> High Flow <ul style="list-style-type: none"> TN-1045M (2.0T V2) High Heat <ul style="list-style-type: none"> TH-1100 (2.0T V0) TH-1108 (3.0T V0, f1)* Opaque <ul style="list-style-type: none"> General <ul style="list-style-type: none"> SA-1100 (0.75T V2) SA-1220 (0.75T V2) High Heat <ul style="list-style-type: none"> HN-1024 (1.0T V0) * HN-1064IF (1.5T V0) NH-1035 (1.5T V0, 2.0T 5VB) Flame Retardant for Thin-wall <ul style="list-style-type: none"> UF-1017S (0.8T V0) UF-1012 (0.75T V0, 3.0T 5VA) UF-1063 (0.6T V0) Eco-friendly <ul style="list-style-type: none"> GC-1022U (1.5T V0, PCM 20%) GV-1025 (1.0T V0, PCM 50%1)* High Impact at Low Temp. <ul style="list-style-type: none"> UH-1068 (1.5T V0, f1) 	<ul style="list-style-type: none"> GF 10% <ul style="list-style-type: none"> General <ul style="list-style-type: none"> HN-3102GH (1.5T V0) High Flow <ul style="list-style-type: none"> LS-3104G (0.75T V2) HN-3102G (1.5T V0) High Heat <ul style="list-style-type: none"> HN-3104 (1.5T V0, 3.0T 5VA, f1) GF 20% <ul style="list-style-type: none"> General <ul style="list-style-type: none"> HF-3201M (1.5T V1) High Flow <ul style="list-style-type: none"> NH-3204G (2.0T V0) NH-3208GL (0.75T V0) HF-3200H (1.5T V2) Surface Quality <ul style="list-style-type: none"> NH-3200 (0.75T V0) High Heat <ul style="list-style-type: none"> HN-3204 (1.5T V0, 2.5T 5VA, f1) GF 30% <ul style="list-style-type: none"> General <ul style="list-style-type: none"> HM-3301GL High Impact <ul style="list-style-type: none"> NH-3303 (1.0T V0) GF 40% <ul style="list-style-type: none"> General <ul style="list-style-type: none"> NH-3402F (2.0T V1)

Low Smoke

- EN45545-2 Compliant
- FS-1152 (R1 HL2)
- FS-1030 (R22 HL3)*

FLAME RETARDANT PC/ABS PRODUCT LINE-UP

General	Reinforced
<ul style="list-style-type: none"> General <ul style="list-style-type: none"> High Impact <ul style="list-style-type: none"> NH-1015B High Flow <ul style="list-style-type: none"> NH-1015V Light Resistant <ul style="list-style-type: none"> NH-1013U (1.5T V0) Flame Retardant for Thin-wall <ul style="list-style-type: none"> NH-1021 (1.0T V0) High Flame Retardant <ul style="list-style-type: none"> General <ul style="list-style-type: none"> NE-1060 (2.0T 5VB) High Heat <ul style="list-style-type: none"> NH-1049 (2.5T 5VB, GWIT)* NH-1034 (2.5T 5VA) Chemical Resistant <ul style="list-style-type: none"> NH-1047 (2.0T 5VB) NH-1048 (1.5T 5VB) High Flow <ul style="list-style-type: none"> General <ul style="list-style-type: none"> NE-1030 (1.5T V0) Anti-hydrolysis <ul style="list-style-type: none"> NH-1098 (1.5T V0) 	<ul style="list-style-type: none"> High Heat <ul style="list-style-type: none"> General <ul style="list-style-type: none"> NH-1037 (1.5T V0) High Flow <ul style="list-style-type: none"> NH-1033 (1.5T V0) Chemical Resistant <ul style="list-style-type: none"> NH-1039 (1.5T V0) NH-1041 (1.5T V0)* High Modulus <ul style="list-style-type: none"> High Impact <ul style="list-style-type: none"> NH-1150HH (1.2T V0, MF 15%) High Flow <ul style="list-style-type: none"> NE-1306 (2.0T 5VB, MF 30%)* NM-1219A (1.0T V1, MF 20%) Functionality <ul style="list-style-type: none"> Eco-friendly <ul style="list-style-type: none"> GC-1048 (1.5T V0/5VB, PCM 30%)* GC-1033 (1.5T V0, PCM 35%) GC-1101 (1.2T V0, PCM 15%) Metal Plating <ul style="list-style-type: none"> QP-1010 (2.5T V1) Luminous <ul style="list-style-type: none"> LX-1031 (1.5T V0, Sparkle)

* Under Development

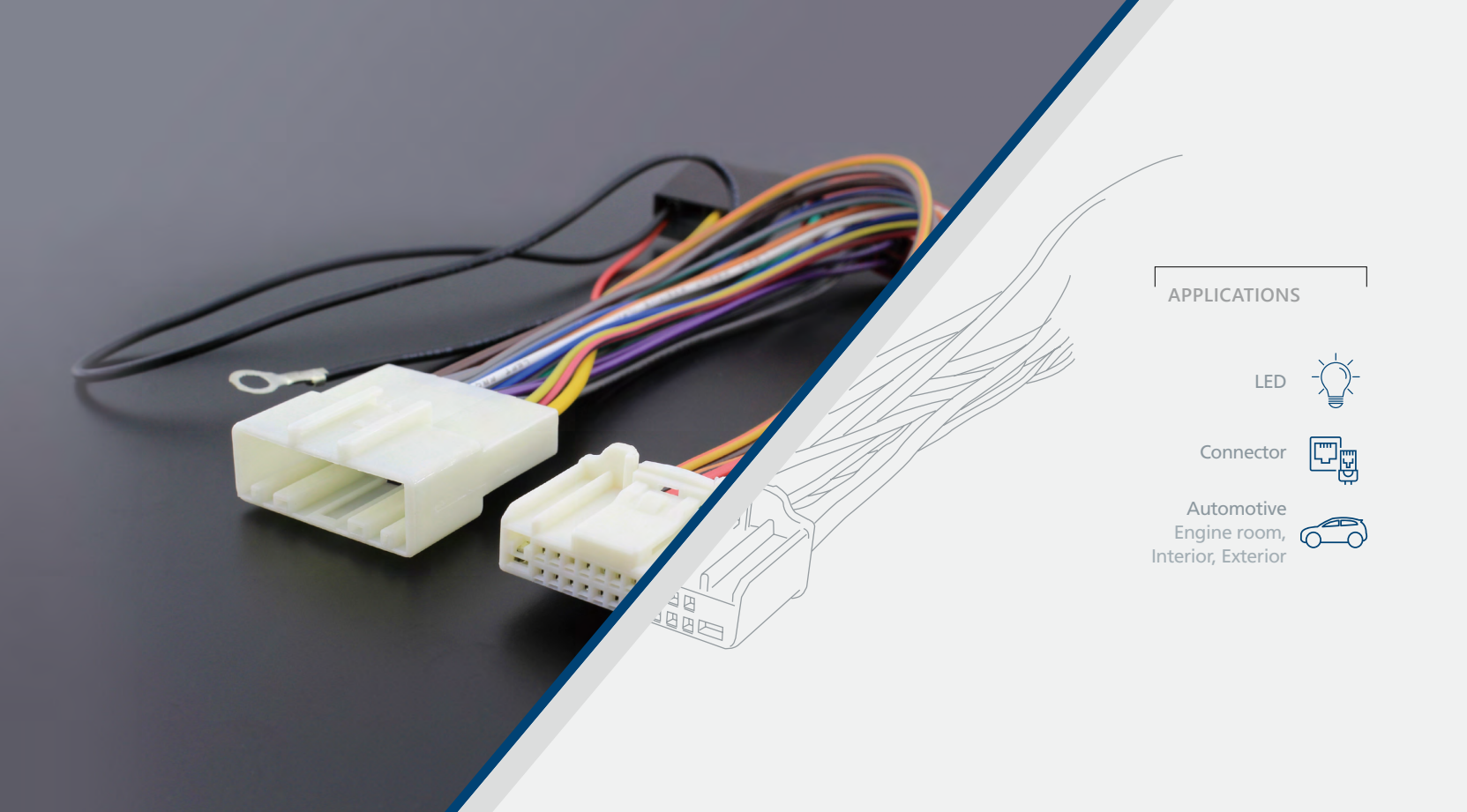
APPLICATIONS

- Mobile devices
- E&E TV, Camera module



APPLICATIONS

- LED
- Connector
- Automotive Engine room, Interior, Exterior



High Impact PC & PC/GF

Thin-wall design solution with excellent impact strength

KEY FEATURES

- Flowability
- High modulus
- Impact strength after painting process
- Surface quality
- Chemical resistance
Cosmetic

PRODUCT LINE-UP

General	Reinforced
<ul style="list-style-type: none"> General <ul style="list-style-type: none"> BC-1088 CF-1050 CF-1051 CF-1070 High Impact <ul style="list-style-type: none"> GM-1080 Transparent <ul style="list-style-type: none"> CF-1021T Eco-friendly <ul style="list-style-type: none"> GW-1029 (PCM 50%) 	<ul style="list-style-type: none"> General <ul style="list-style-type: none"> IN-3100G (GF 10%) IN-3200G (GF 20%) Dimensional Stability <ul style="list-style-type: none"> LS-3302 (GF 30%) LS-3302L (GF 30%, Lubricated) LS-3307LC (MF 30%, Isotropy)* High Impact <ul style="list-style-type: none"> CF-3104HF (GF 10%) CF-3200HF (GF 20%) CF-3300HF (GF 30%) Surface Quality <ul style="list-style-type: none"> GI-3103 (GF 10%) Eco-friendly <ul style="list-style-type: none"> GW-3130 (GF 10%, PCM 75%)

* Under Development

High Heat Resistant EP

Material reliability with thermal stability

PRODUCT LINE-UP

PCT (High Reflectivity/Reliability)	PPA (High Heat Resistance/Impact Strength)
<ul style="list-style-type: none"> Processability at Low Temp. <ul style="list-style-type: none"> General <ul style="list-style-type: none"> TK-2046MA High Luminance <ul style="list-style-type: none"> TK-2050LP Processability at High Temp. <ul style="list-style-type: none"> TK-2050HP 	<ul style="list-style-type: none"> Connector (PA6T) <ul style="list-style-type: none"> General <ul style="list-style-type: none"> HX-4300G Colorability <ul style="list-style-type: none"> HX-4302G HX-4452G Automotive <ul style="list-style-type: none"> General <ul style="list-style-type: none"> HA-4302G (GF 30%) Long-term Heat Resistance <ul style="list-style-type: none"> HA-4350HP (GF 35%) Metal Plating <ul style="list-style-type: none"> HA-4400MP

KEY FEATURES

- High modulus
- Long-term heat stability
- Quality stability **A+**

APPLICATIONS

- Mobile devices
Rear cover, Bracket
- E&E
TV, Bobbin, Connector
- HA
Coffee machine



APPLICATIONS

- Metal Adhesion**
Mobile devices
Rear cover
- LDS**
Internal antenna
Mobile devices, E&E



Super Structural EP

Metal-replacement high modulus technology

KEY FEATURES

- Metal-replacement
- High modulus
- Mechanical strength
- Flowability
- Thin-wall design

PRODUCT LINE-UP

PA, PPA (Super Modulus)

- HM-4300G (PPA/GF 30%, 10GPa)
- HM-4500G (PPA/GF 50%, 13GPa)
- HM-4650G (PPA/GF 65%, 20GPa)
- MKD-1016 (PA/GF 55%, 15GPa, Low Warpage)
- HM-4650LW (PPA/GF 65%, 20GPa, Low Warpage)

PPS (High Impact/Anti-scratch)

- XP-2130A (PPS/GF 30%, Anti-scratch)
- XP-2140C (PPS/GF 40%, Cross)
- XP-2165MC (PPS/GF/MF 65%, Cross)

Metal Adhesion, LDS Materials

Functional solution for cutting-edge mobile technology

PRODUCT LINE-UP

Metal Adhesion

- PBT/GF
 - JS-5406 (GF 40%, High Quality)
 - JS-5207LD (GF 20%, Low Permittivity)

LDS (Laser Direct Structuring)

- PC
 - LP-1020 (Black)
 - LP-1021 (White etc.)
 - LP-1025 (Chemical Resistant)*
- PC/GF
 - LP-3105 (GF 10%, Chemical Resistant)
 - LP-3305 (GF 30%, Chemical Resistant)*
 - LP-3303 (GF 30%, Black)
- PC/ABS
 - LP-1010 (Black)
 - LP-1011 (White etc.)

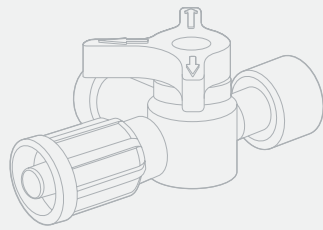
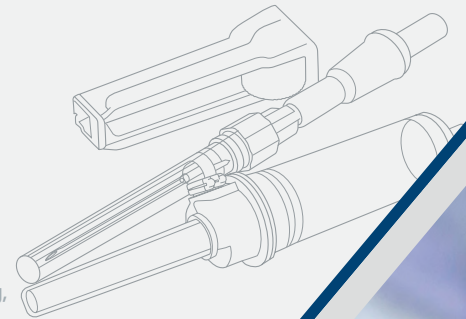
KEY FEATURES

- Metal Adhesion**
High adhesiveness
- Impact strength, Low shrinkage
- Chemical resistance
- LDS**
Plating adhesion strength
- Impact strength
- Color & UV stability

* Under Development

APPLICATIONS

Medical devices
Hemodialyzer housing,
IV Set, Oxygenator,
Drug/Fluid Delivery



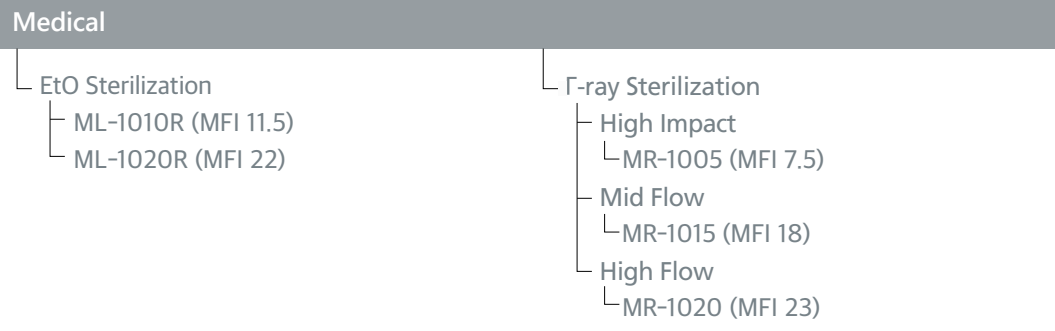
Medical Solution

Reliability in quality ensuring safety

KEY FEATURES

- Biocompatibility
- Global medical standards
SO-10993, USP Class VI,
Food Contact
- Γ -ray resistance
- Property stability

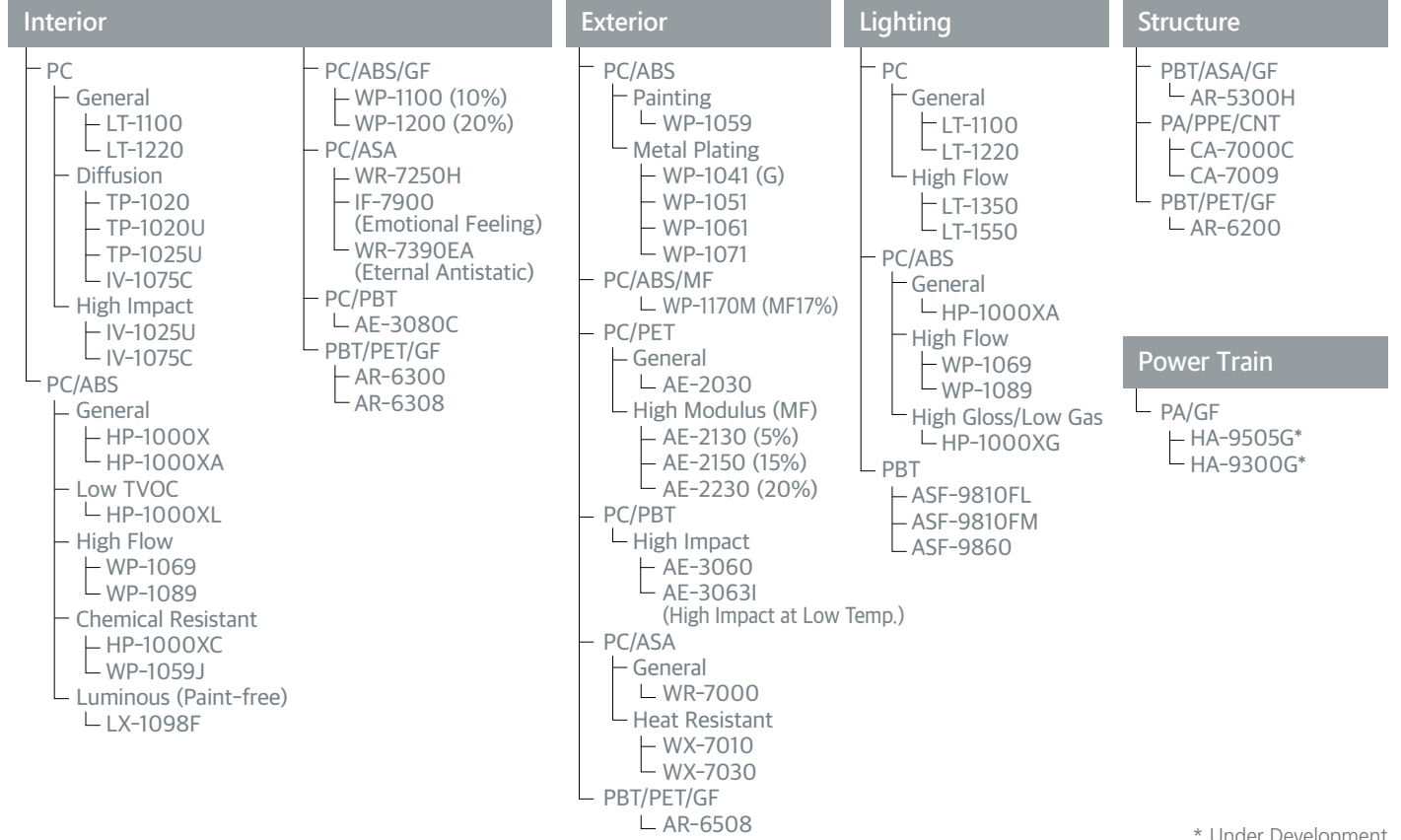
PRODUCT LINE-UP



Automotive Materials

Integrated material solution – Light-weight/Eco-friendly/Design

PRODUCT LINE-UP



* Under Development

Product Selection Guide

Transparent PC

				General								General			Extrusion			Automotive			
Properties	Test Method	Condition	Unit	SC-1100R	SC-1100UR	SC-1102UR	SC-1220R	SC-1220UR	SC-1222UR	SC-1280UR		QC-1100UR	QC-1220UR	SC-1060P	SC-1060U	SC-1063U	General		Diffusion	High Impact	
																	LT-1100	LT-1220	TP-1020U	IV-1075C	
PHYSICAL PROPERTIES																					
Specific Gravity	ASTM D792	-	-	1.2	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.19	1.19	
Melt Flow Index	ASTM D1238	300°C, 1.2kg	g/10min	11.5	11.5	11.5	22	22	20	28		11.5	22	6	6	6	11.5	22	20	7	
	ISO 1133	300°C, 1.2kg		11.5	11.5	11.5	22	22	20	28		11.5	22	6	6	6	11.5	22	20	7	
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7		0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.4-0.7	0.5-0.8	
Mold Shrinkage(TD)		X-Flow at 3.2mm(TD)		0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7		0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.5-0.7	0.4-0.7	0.5-0.8	
MECHANICAL PROPERTIES																					
Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²																600	620	
		50mm/min		640	640	640	640	640	640	640		640	640	660	660	660	640	640			
	ISO 527	5mm/min	MPa																57	59	
		50mm/min		64	64	64	64	64	64	64		64	64	66	66	66	64	64			
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	920	920	920	920	920	920	920		920	920	930	930	930	920	920			
		30mm/min																	920	920	
	ISO 178	2mm/min	MPa	92	92	92	92	92	92	92		92	92	93	93	93	92	92	90	93	
				23,000	23,000	23,000	23,000	23,000	23,000	23,000		23,000	23,000	23,000	23,000	23,000	23,000	23,000			
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm ²																23,000	23,000	
		30mm/min																			
	ISO 178	2mm/min	MPa	2,300	2,300	2,300	2,300	2,300	2,300	2,300		2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,130	2,100	
				15	15	15	10	10	10	10		15	10	15	15	15	15	10	11	70	
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm																		
		1/8inch at 23°C		87	87	87	75	75	75	70		87	75	90	90	90	87	75	78	95	
	ISO 180 1A	at 23°C, 4mm	kJ/m ²	80	80	80	65	65	65	60		80	65	85	85	85	80	65	52	62	
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	kJ/m ²	75	75	75	60	60	60	50		75	60	80	80	80	75	60	64	74	
Rockwell Hardness	ASTM D785	R-scale	-	120	120	120	120	120	120	120		120	120	120	120	120	120	120	121	121	
	ISO 2039-2	R-scale	-	120	120	120	120	120	120	120		120	120	120	120	120	120	120	122	121	
THERMAL PROPERTIES																					
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	127	127	127	125	125	125	123		127	125	128	128	128	127	125	128	124	
		4.6kgf/cm ² , 6.4mm		137	137	137	136	136	136	135		137	136	138	138	138	137	136	140	135	
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C	125	125	125	123	123	123	122		125	123	126	126	126	125	123	123	118	
		0.45MPa, 4.0mm		137	137	137	136	136	136	135		137	136	138	138	138	137	136	139	133	
VICAT Softening Temperature	ISO 306	B/50	°C	146	146	146	145	145	145	144		146	145	147	147	147	146	145	147	141	
FLAME CHARACTERISTICS																					
Flammability	UL94	HB V-2	mm	0.75-3.0	0.75-3.0	0.75-3.0	0.75-3.2	0.75-3.2	0.75-3.2	0.8-3.2		1.6-3.2	0.8-3.2	2.6-3.2 1.6-2.0	2.6-3.2 1.6-2.0	2.6-3.2 1.6-2.0	0.8-3.0	0.8-3.2	HB	HB	

Flame Retardant PC & PC Alloys

				Flame Retardant PC										Flame Retardant PC								
				General						General				Low Smoke		Reinforced						
Properties	Test Method	Condition	Unit	TN-1045M	TH-1100	SA-1100	SA-1220	HN-1064IF	NH-1035	UF-1017S	UF-1012	UF-1063	GC-1022U	UH-1068	FS-1152	HN-3102GH	LS-3104G	HN-3102G	HN-3104	HF-3201M	NH-3204G	
PHYSICAL PROPERTIES																						
Specific Gravity	ASTM D792	-	-	1.22	1.2	1.2	1.2	1.18	1.2	1.2	1.19	1.19	1.18	1.18	1.36	1.26	1.25	1.26	1.28	1.33	1.34	
		220°C, 5kg																				
Melt Flow Index	ASTM D1238	220°C, 10kg								19	24	19			19							
		250°C, 2.16kg																				
		250°C, 5kg	g/10min																			
		250°C, 10kg		92	17				30	35							22	30	33	12.5	11	36
		260°C, 2.16kg												18								
	ISO 1133	300°C, 1.2kg		41			9	20							13					9		
		300°C, 2.16kg																				
		220°C, 5kg									19	24	19									
		220°C, 10kg																				
		250°C, 2.16kg														19						
ISO 1133	250°C, 5kg	g/10min																				
	250°C, 10kg		92	17				30	35							22	30	33	12.5	11	36	
	260°C, 2.16kg												18									
	300°C, 1.2kg		41			9	20												9			
	300°C, 2.16kg																					
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.3-0.6	0.4-0.7	0.4-0.7	0.5-0.7	0.4-0.7	0.4-0.7	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.2-0.5	0.3-0.6	0.2-0.5	0.3-0.6	0.3-0.6	0.1-0.3	0.2-0.5	
Mold Shrinkage(TD)		X-Flow at 3.2mm(TD)		0.3-0.6	0.4-0.7	0.4-0.7	0.5-0.7	0.4-0.7	0.4-0.7	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.2-0.5	0.3-0.6	0.2-0.5	0.3-0.6	0.3-0.6	0.1-0.3	0.2-0.5	
MECHANICAL PROPERTIES																						
Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²	750	650	650	650	600	600	620	650	620	590	600	500	800	800	860	550	1,100	1,100	
		50mm/min																				
Flexural Strength	ISO 527	5mm/min	MPa	73	60	63	60	60	59	61	65	62	55	55	55	80	80	75	60	100	100	
		50mm/min																				
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm ²	1,100	960	980	990	800	900	910	900	930	800	800	750	1,200	1,400	1,500	1,000	1,700	1,490	
	ISO 178	2mm/min	MPa	108	95	90	90	80	90	90	90	93	80	85	80	120	130	120	90	150	146	
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	4.1		20	12		15					45	9	6	5	8	15			
		1/8inch at 23°C		2.5	5	70	70	60	70	65	65	70	60	75	6	9	8	5.6	10	16	9	
Charpy Impact Strength (V-notched)	ISO 180 1A	at 23°C, 4mm	kJ/m ²	2.5		70	45	50	54	64			50	55	9	9	5.6	10	13	7		
Rockwell Hardness	ASTM D785	R-scale	-	124	119	120	120	118	120	119			118	120	118	120	90	90	115			
	ISO 2039-2	R-scale	-	124	119	120	120	119	120	119			118	120	120	90	121	90	115			
THERMAL PROPERTIES																						
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	97	130	127	120		113			95	127	125	89	138	135	137	140	138	114	
		4.6kgf/cm ² , 6.4mm					130											142	139	140		
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C	89	123	125	120	119	107	93		90	123	120	88	138		132	137	141		
		0.45MPa, 4.0mm		99			130		120	104							135	140	136	145		
Heat Deflection Temperature (Annealing)	ISO 75-2	1.8MPa, 4.0mm	°C	100					116	105												
		0.45MPa, 4.0mm		104					122	108												
VICAT Softening Temperature	ISO R 306	B/50	°C	106	144	142	138	140	127	109	109	107	142	140	97				143	142		
		B/120		108					129	112									146			
FLAME CHARACTERISTICS																						
Flammability	UL94	HB																			0.75	
		V-2	mm	0.8, 3.0		0.75, 1.5, 2.0, 2.5, 3.0	0.75, 3.0	0.75		0.4			0.75, 1.0				0.75, 0.90, 3.0					
		V-1												1.2						1.2	1.5	1.5
		V-0		2.0/2.5/3.0			1.5, 3.0	1.5, 2.0-2.7	0.7-3.0			0.7, 3.0	0.6, 3.0	1.5, 3.0	1.5, 3.0		1.5-1.6		1.5, 1.6	1.5, 2.5, 3.0	3	2.0, 2.5, 3.0
		5VA										3								3		
		5VB																			2.5	2.0, 2.5, 3.0
OTHERS																						
Transmissivity	ASTM D1003	2.5mm	-		85																	
		3.2mm		89																		
Haze	ASTM D1003	2.5mm	-		2																	
		3.2mm		0.6																		

Flame Retardant PC & PC Alloys

				Flame Retardant PC							Flame Retardant PC/ABS										
				Reinforced							General										
Properties	Test Method	Condition	Unit	NH-3208GL	HF-3200H	NH-3200	HN-3204	HM-3301GL	NH-3303	NH-3402F	NH-1015B	NH-1015V	NH-1013U	NH-1021	NE-1060	NH-1034	NH-1047	NH-1048	NE-1030		
PHYSICAL PROPERTIES																					
Specific Gravity	ASTM D792	-	-	1.35	1.37	1.34	1.35	1.41	1.42	1.51											
		220°C, 5kg																			
Melt Flow Index	ASTM D1238	220°C, 10kg		23.2								23	30	33	28	47	40		36	53	
		250°C, 2.16kg																			
		250°C, 5kg	g/10min			19													25		
		250°C, 10kg							7												
		260°C, 2.16kg				11															
		300°C, 1.2kg					12	9													
		300°C, 2.16kg									23										
		220°C, 5kg																			
		220°C, 10kg				23.2							23	30	33	28	47	40		36	53
		250°C, 2.16kg																			
ISO 1133		250°C, 5kg	g/10min			19												25			
		250°C, 10kg						7													
		260°C, 2.16kg																			
		300°C, 1.2kg					12	9													
		300°C, 2.16kg									23										
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.2-0.4	0.3-0.6	0.1-0.4	0.2-0.5	0.1-0.4	0.1-0.3	0.1-0.4		0.5-0.7	0.4-0.7	0.4-0.6	0.4-0.7	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	
Mold Shrinkage(TD)		X-Flow at 3.2mm(TD)		0.2-0.4	0.3-0.6	0.1-0.4	0.2-0.5	0.1-0.4	0.1-0.3	0.1-0.4			0.4-0.7	0.4-0.6	0.4-0.7	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/cm ²	1,070	1,100	1,200	850														
		50mm/min							1,380	1,400	1,430										
ISO 527		5mm/min	MPa	105	110	120	88		140	184											
		50mm/min							115												
Tensile Strain at break	ASTM D790	2.8mm/min	kgf/cm ²	1,400	1,500	1,500	1,500	2,000	1,750	1,800											
		2mm/min	MPa	140	170	150	150	153	175	250											
ISO 178		2.8mm/min																			
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	59,300	55,000	60,000	55,000	78,000	85,000	110,000											
		2mm/min	MPa	5,400	5,800	6,000	5,400	7,900	8,500	12,000											
ISO 178		2.8mm/min																			
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	9	15	10	7		14					8	15			30	17	12	
		1/8inch at 23°C																			
ISO 180 1A		at 23°C, 4mm	kJ/m ²	10	11.5	10	7														
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	kJ/m ²	10	14	10	7	11	15	17											
Rockwell Hardness	ASTM D785	R-scale	-	120		120	119	115	120	122											
ISO 2039-2		R-scale	-	120	118	120	119	119	120	122											
THERMAL PROPERTIES																					
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	93	140	100	138	143	116	110											
		4.6kgf/cm ² , 6.4mm																			
ISO 75-2		1.8MPa, 4.0mm		91	140	97	137	142	115	114											
		0.45MPa, 4.0mm	°C	98	145	102	142	146													
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm																			
		0.45MPa, 4.0mm	°C	94																	
Heat Deflection Temperature (Annealing)	ISO 75-2	1.8MPa, 4.0mm																			
		0.45MPa, 4.0mm	°C	98																	
VICAT Softening Temperature	ISO R 306	B/50	°C	100	147			150		118											
		B/120																			
FLAME CHARACTERISTICS																					
Flammability	UL94	HB																			
		V-2			1.5																
		V-1						1.5		2											
		V-0	mm	0.75, 3.0	3	0.75, 3.0	1.5-3.0	3.0, 6.0	0.75(BK) 1.0-3.0(ALL) 3.0(BK)	2.5, 3.0		1.5	1.5	1.5, 2.0, 2.1, 2.5, 3.0	1mm, 3mm	1.5-3.0	1.2	1.5-3.0	1.2-3.0	1.5, 2.0, 3.0	
		5VA					2.5					3		3.0			2.5				
5VB										2	2	2.0, 2.1, 2.5		2.0-3.0	2	2.0-3.0	1.5				
OTHERS																					
Transmissivity	ASTM D1003	2.5mm	-																		
		3.2mm																			
Haze	ASTM D1003	2.5mm	-																		
		3.2mm																			

Flame Retardant PC & PC Alloys

				Flame Retardant PC/ABS							Flame Retardant PC/ABS											
				General							General				Reinforced							
Properties	Test Method	Condition	Unit	NH-1098	NH-1037	NH-1033	NH-1039	NH-1150HH	NM-1219A	GC-1048	GC-1033	GC-1101	QP-1010	LX-1031	HM-1100F	LS-1150G	LS-1159	LS-1159S				
PHYSICAL PROPERTIES																						
Specific Gravity	ASTM D792	-	-	1.17	1.19	1.18	1.19	1.28	1.33													
		220°C, 5kg								28												
	ASTM D1238	g/10min	220°C, 10kg		45	19	35	15	29		38	35	30	50	24	26						
			250°C, 2.16kg																14	9		
			250°C, 5kg																			
			250°C, 10kg															24				
			260°C, 2.16kg						10													
			300°C, 1.2kg																			
		ISO 1133	g/10min	300°C, 2.16kg																		
				220°C, 5kg								28										
				220°C, 10kg									38	35	30	50	24	26				
				250°C, 2.16kg																	14	9
				250°C, 5kg																		
				250°C, 10kg															24			
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.4-0.7	0.4-0.7	0.40-0.70	0.4-0.7	0.2-0.5	0.2-0.5													
		X-Flow at 3.2mm(TD)		0.4-0.7	0.4-0.7	0.40-0.70	0.4-0.7	0.2-0.5	0.2-0.5													
Mold Shrinkage(TD)	ASTM D955			0.4-0.7	0.4-0.7	0.40-0.70	0.4-0.7	0.2-0.5	0.2-0.5													
				0.4-0.7	0.4-0.7	0.40-0.70	0.4-0.7	0.2-0.5	0.2-0.5													
MECHANICAL PROPERTIES																						
Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²													800	900	800	900			
		50mm/min		630	670	600	600	640		550												
Tensile Strain at break	ISO 527	5mm/min	MPa													80	86	80	90			
		50mm/min		60	61	60	61	64		45												
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	850	1,000	900	900	940	900	900	890	900	850	820	1,000	1,400	1,200	1,200				
		2mm/min	MPa	90	92	90	85	100	80	80	90	85	90	85	82	100	135	110		120		
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm																			
		1/8inch at 23°C		45	60	60	65	6	3.5		17	15		30		8		6	8			
Charpy Impact Strength (V-notched)	ISO 180 1A	at 23°C, 4mm	kJ/m ²	25	32	55	60	6	5		17	50	10	50	34	8	8.2	6	8			
				26	36	30	60	6.5	7		20	30	10	20	37	7	9.9	6	8			
Rockwell Hardness	ASTM D785	R-scale	-	110	120	119	118	110														
		ISO 2039-2	R-scale	-	110	120	119	118	110													
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C		100	92	99	80	86							93	127	91	90			
		4.6kgf/cm ² , 6.4mm			108			85			79	94	85	78	79	95			93			
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C		93	86	98	80	83		76	86	82	78	76	92	120	91	90			
		0.45MPa, 4.0mm			105			85	86					79	86	94	122		93			
Heat Deflection Temperature (Annealing)	ISO 75-2	1.8MPa, 4.0mm	°C		100																	
		0.45MPa, 4.0mm			106										83							
VICAT Softening Temperature	ISO R 306	B/50	°C	96	110	107	110	95	94		90	107	97	89	93	98		97				
		B/120			114										90							
FLAME CHARACTERISTICS																						
Flammability	UL94	HB	mm																			
		V-2						0.4									0.75-3.0					
		V-1						1	1					2.5				1.5	1.5			
		V-0		1.5, 3.0	1.5, 2.5, 3.0	1.5, 3.0	1.5, 3.0	1.2, 3.0	1.5		1.2/1.5/3.0	1.5-3.0	1.2, 3.0	3.2	1.5-3.0	1.5, 2.0, 3.0		2.0, 2.5, 3.0	3			
		5VA																				
OTHERS	ASTM D1003	2.5mm	-																			
		3.2mm																				
Haze	ASTM D1003	2.5mm	-																			
		3.2mm																				

High Impact Strength PC & PC/GF

				General							Reinforced											
Properties	Test Method	Condition	Unit	BC-1088	CF-1050	CF-1051	CF-1070	GM-1080	CF-1021T	GW-1029	IN-3100G	IN-3200G	LS-3302	LS-3302L	CF-3104HF	CF-3200HF	CF-3300HF	GI-3103				
PHYSICAL PROPERTIES																						
Specific Gravity	ASTM D792	-	-	1.18	1.18	1.2	1.2	1.2	1.18	1.18			1.24	1.31	1.4	1.41	1.25	1.33	1.4	1.25		
Melt Flow Index	ASTM D1238	250°C, 10kg	g/10min	18	18	22	13	28	36	19			23	27	12	13	23	23	22	33		
		300°C, 1.2kg		10		12		16	19								15			21		
	ISO 1133	250°C, 10kg	g/10min	18	18	22	13	28	36	19			23	27	12	13	23	23	22	33		
		300°C, 1.2kg		10		12		16	19								15			21		
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7				0.3-0.6	0.2-0.5	0.1-0.4	0.1-0.4	0.3-0.6	0.2-0.5	0.1-0.4	0.3-0.6		
Mold Shrinkage(TD)		X-Flow at 3.2mm(TD)		0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7					0.3-0.6	0.3-0.6	0.4-0.7	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/cm ²										530	1,000	1,300	1,200		1,000	1,200	560		
		50mm/min		580	600	600	600	600	650	590								600				
	ISO 527	5mm/min	MPa											53	100	120	120		100	125	53	
		50mm/min		55	55	60	58	60	60	60								60				
Tensile Strain at break	ASTM D790	2mm/min	kgf/cm ²															950				
		2.8mm/min		800	850	850	850	800	850	840					900	1,500	1,800	1,600		1,400	1,700	880
	ISO 178	2mm/min	MPa																95	170	180	
		2.8mm/min		75	84	80	80	80	92	81					88	150	175	160				85
Flexural Strength	ASTM D790	2mm/min	kgf/cm ²															30,000				
		2.8mm/min		20,000	20,000	20,000	20,000	20,000	21,000	20,000					34,000	55,000	75,000	75,000		56,000	66,000	32,000
	ISO 178	2mm/min	MPa																3,000	6,000	7,300	
		2.8mm/min		2,100	2,100	2,200	2,100	2,000	2,300	1,980					3,300	5,500	8,300	7,400				3,160
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf-cm/cm	60	55	55	55	60	10	56									20	20	15	16
		1/8inch at 23°C		75	70	70	70	72	70											28	19	18
	ISO 180 1A	at 23°C, 4mm	kJ/m ²	60	60	50	65	53	60	65									20	19	17	18
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	kJ/m ²	65	60	60	60	58	60										20	25	18	19
Rockwell Hardness	ASTM D785	R-scale	-	115	120	118		116	120	116									116	116	115	115
	ISO 2039-2	R-scale	-	115	120	118		116	120	116									116	116	115	115
THERMAL PROPERTIES																						
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	131		129		125	120	124			138	138	140	140	141	139	140	131		
		4.6kgf/cm ² , 6.4mm		139		135		135	133										143	143	136	
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C	130	121	129		115	130				138	138	140	140	141	137	138	130		
		0.45MPa, 4.0mm		137	136	135		130	133										142	143	134	
Heat Deflection Temperature (Annealing)	ISO 75-2	1.8MPa, 4.0mm	°C			125														139		
		0.45MPa, 4.0mm				136															143	
VICAT Softening Temperature	ISO R 306	B/50	°C	143	141	137	140	139	140	139									137	148	143	126
		B/120			145																145	
FLAME CHARACTERISTICS																						
Flammability	UL94	HB	mm	0.8, 3.0									0.8, 3.0	0.8, 3.0						0.8, 3.2		
		V-2			0.8, 2.5, 3.0	0.8, 2.5, 3.0	0.8, 2.5, 3.0	0.8, 3.0						0.8	0.8	0.8	0.8	0.8				
		V-1													3.2	3.2	3.2	3.2	3.2			

				High Heat Resistant						High Heat Resistant									
				PCT			PPA (Connector)			PA, PPA						PPS			
Properties	Test Method	Condition	Unit	TK-2046MA	TK-2050LP	TK-2050HP	HX-4300G	HX-4302G	HX-4452G	HM-4300G	HM-4500G	HM-4650G	MKD-1016	HM-4650LW	XP-2130A	XP-2140C	XP-2165MC		
PHYSICAL PROPERTIES																			
Specific Gravity	ASTM D792	-	-	1.6	1.71	1.71	1.45	1.43	1.58		1.41	1.58	1.79	1.64	1.78	1.65	1.66	1.96	
		300°C, 1.2kg		18	22	18								10					
Melt Flow Index	ASTM D1238	315.5°C, 5kg	g/10min													115		80	
		316°C, 5kg															55		
		330°C, 2.16kg					25	20	8.5		25		20						
	ISO 1133	275°C, 2.16kg												13					
		300°C, 1.2kg			18	22	18							10					
		315.5°C, 5kg	g/10min													115		80	
		316°C, 5kg														83			
		330°C, 2.16kg				25	20	8.5		25		20							
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.5-0.8	0.4-0.7	0.4-0.7	0.3-0.6	0.3-0.6	0.2-0.5	0.3-0.6	0.2-0.5	0.1-0.4	0.2-0.5	0.1-0.4	0.3-1.2	0.2-0.5	0.25-0.8		
Mold Shrinkage(TD)		X-Flow at 3.2mm(TD)		0.5-0.8	0.4-0.7	0.4-0.7	0.5-0.8	0.5-0.8	0.3-0.6	0.7-1.0	0.4-0.7	0.4-0.7	0.3-0.6	0.4-0.7	0.3-1.2	0.3-0.6			
MECHANICAL PROPERTIES																			
Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²	740	600	600		1,450	1,500		2,000	2,500	2,800	2,700	2,800	1,400	1,900	1,500	
		5mm/min				60		145			200	250	280	260	280	128	180		
	ISO 527	10mm/min	MPa	60	60														
		50mm/min							150										150
Tensile Strain at break	ASTM D790	2.8mm/min	kgf/cm ²	1,100	750	850	2,200	2,200	2,400		2,500	3,500	3,100	3,400	3,900	2,000	2,700	2,000	
	ISO 178	2mm/min	MPa	105	75	80	210	220	240		250	350	310	330	390	190	260	240	
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	65,000	50,000	53,000	100,000	95,000	135,000		95,000	150,000	190,000	156,000	200,000	100,000	130,000	180,000	
	ISO 178	2mm/min	MPa	6,900	5,000	5,100	10,600	9,500	13,500		10,000	15,000	19,000	16,000	20,000	10,000	13,400	18,000	
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf·cm/cm	3	2	1.9	7	5	6		8	13	10	12	15	8	8.7	5.4	
		1/8inch at 23°C		3.6	2.8	2.5	6.5	5	6		8	13	13	13	15	9	10	6	
	ISO 180 1A	at 23°C, 4mm	kJ/m ²		2	1.9	8.3	5	6		8	13	13	17	15	11	11	5	
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	kJ/m ²	3.6	3	2.5	10	5	6		8	13		17	15	11	13		
Rockwell Hardness	ASTM D785	R-scale	-				122	120	125		120	120	120	121	120	120	121	121	
	ISO 2039-2	R-scale	-				122	120	128		120	120	120	121	120	116	121	121	
THERMAL PROPERTIES																			
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	250	195	195	290	280	285		295	240	248	250	245	275	270	270	
		4.6kgf/cm ² , 6.4mm														282	282	284	
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C	250	195	195	290	280	285		295	240	248	250	245	275	267	272	
		0.45MPa, 4.0mm														289	283	285	
Heat Deflection Temperature (Annealing)	ISO 75-2	1.8MPa, 4.0mm	°C													272	274		
		0.45MPa, 4.0mm														283	283		
FLAME CHARACTERISTICS																			
Flammability	UL94	HB	mm	1.5, 3.0	1.5, 3.0	1.5, 3.0					0.8-3.0	0.8, 3.0		0.8, 1.5, 3.0					
		V-0				0.4-3.0	0.4	0.4-3.2								0.75	0.9	1.6	
		5VA																1.6	
OTHERS																			
Yellow Index	ASTM D1925	3.2mm	-	51															

Functional Solution Metal Adhesion, LDS, Medical

				Metal Adhesion PBT/GF		LDS (Laser Direct Structuring)				LDS (Laser Direct Structuring)		EtO Sterilization		Medical						
Properties	Test Method	Condition	Unit	JS-5406	JS-5207LD	PC		PC/GF		PC/ABS		EtO Sterilization		Gamma Sterilization						
						LP-1020	LP-1021	LP-3305	LP-3303	LP-1010	LP-1011	ML-1010R	ML-1020R	MR-1005	MR-1015	MR-1020				
PHYSICAL PROPERTIES																				
Specific Gravity	ASTM D792	-	-	1.57	1.37	1.26	1.23	1.43	1.47			1.19	1.21	1.2	1.2	1.2	1.2			
Melt Flow Index	ASTM D1238	250°C, 10kg	g/10min			21	28					28	36							
		280°C, 2.16kg		15	20															
	ISO 1133	300°C, 1.2kg	g/10min			14	16	14	17			15	17	11.5	22	7.5	18	23		
		250°C, 10kg				21	28						28	36						
Mold Shrinkage(MD)	ASTM D955	Flow at 3.2mm(MD)	%	0.2-0.5	0.5-0.8	0.4-0.7	0.4-0.7	0.1-0.3	0.1-0.3			0.4-0.7	0.4-0.7	0.5-0.7	0.5-0.7	0.4-0.7	0.4-0.7	0.4-0.7		
		X-Flow at 3.2mm(TD)		0.4-0.7	0.6-0.9	0.4-0.7	0.4-0.7	0.3-0.6	0.3-0.6					0.4-0.7	0.4-0.7	0.5-0.7	0.5-0.7	0.4-0.7	0.4-0.7	0.4-0.7
MECHANICAL PROPERTIES																				
Tensile Strength at yield	ASTM D638	5mm/min	kgf/cm ²	1,200	1,000			900	960											
		50mm/min				580	590						530	530	640	640	660	640	640	
		ISO 527		5mm/min	MPa	120	98			90	100									
50mm/min				60		60					55	55	64	64	66	64	64			
Tensile Strain at break	ASTM D790	2.8mm/min	kgf/cm ²	1,900	1,700	850	830	1,300	1,400			800	800	920	920	920	920	920		
		ISO 178		2mm/min	MPa	190	166	85	85	130	120			75	75	92	92	92	92	92
		2.8mm/min																		
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm ²	96,000	57,000	22,000	23,000	54,000	69,000			23,000	25,000	23,000	23,000	23,000	23,000	23,000		
		ISO 178		2mm/min	MPa	9,500	5,590	2,000	2,500	5,400	6,500			2,300	2,500	2,300	2,300	2,300	2,300	2,300
		2.8mm/min																		
Izod Impact Strength (Notched)	ASTM D256	1/4inch at 23°C	kgf·cm/cm	11	11	55	30	8	10			47	25	15	10	10	10	10		
		1/8inch at 23°C				11	11	70	63	10	11			60	50	87	75	90	80	75
		ISO 180 1A		at 23°C, 4mm	kJ/m ²	11	11	65	60	10	10			60	50	80	65	85	70	65
Charpy Impact Strength (V-notched)	ISO 179 1eA	at 23°C, 4mm	kJ/m ²	11		11	70	65		11			63	55	75	60	80	65	60	
Rockwell Hardness	ASTM D785	R-scale		-	112	112	117	118		115			113	116	120	120	120	120	120	
		ISO 2039-2	R-scale		-	112	111	117	118		115			113	116	120	120	120	120	120
THERMAL PROPERTIES																				
Heat Deflection Temperature	ASTM D648	18.56kgf/cm ² , 6.4mm	°C	211	208	129		121	125			110	115	127	125	125	123	122		
		4.6kgf/cm ² , 6.4mm				140				132			125	124	137	136	135	133	132	
Heat Deflection Temperature (Unannealed)	ISO 75-2	1.8MPa, 4.0mm	°C	211	208	125		121	124			108	115	125	123	123	121	120		
		0.45MPa, 4.0mm				208	135			133			124	124	137	136	135	133	132	
VICAT Softening Temperature	ISO R 306	B/50	°C			141	137			126				146	145	143	141	140		
FLAME CHARACTERISTICS																				
Flammability	UL94	HB V-2	mm			0.6/3.0	0.8/3.0	0.8, 3.0	0.8, 3.0			0.8, 3.0	0.8, 3.0			0.8, 3.0				

At a Glance

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

Field of Business



Basic Chemicals	Basic/Intermediate Petrochemicals	Ethylene, Propylene, BD, SM, OX, C5
	Polymer	PE, PP, PET
	Monomer	EO/EG/GE, EOA, PIA/PTA/MMA
Advanced Materials	High Performance Plastic Materials	starex® Styrene & general product ABS, ABS Alloy, ASA, EPS, PP INFINO® Engineering plastics PC, PC Alloy, PBT, mPPE, PA, PPA, PPS, PCT, TPE
	Construction Materials	staron® Acrylic solid surface Radianz® Natural quartz engineered stone Locelain® Engineered porcelain surface
	Water Treatment Membrane	MEMBRIO

Capacity



BASIC CHEMICALS

EL	4,500
PL	1,697
BL	450
BZ	766
TL	339
XL	139

MONOMER

EG	1,830
SM	577
PX	750
OX	210
Me-X	160
PTA	1,100
PIA	460

POLYMER

HDPE	1,605
LLDPE	490
LDPE/EVA	360
PP	1820
PET	520

SPECIALTY

ABS	670
PC	460
EPDM	96
MMA	260
PMMA	110
S-SBR	100
EOA	230
Acrylic solid surface	970k sheets
Natural quartz engineered stone	320k sheets

(Unit: KTA)

Sales & Production Sites



22 Countries

24 Production bases

HQ / R&D – South Korea
HQ Seoul
R&D Uiwang, Daejeon
PRODUCTION PLANT
Asia Malaysia, Indonesia, Uzbekistan, Pakistan, South Korea*, China*, Vietnam*, India* ('20, 4Q)
Europe Hungary*, Turkey* (E-stone)
America U.S, Mexico*
SALES CORPORATION
Asia China*, Thailand*, Japan*
Europe Germany*, Poland*
America/Africa U.S*, Nigeria

Employees Worldwide



10,678

Including major subsidiaries (Domestic & Overseas)

* Advanced Materials

Global Network (Advanced Materials)



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