Create Infinite Possibilities

INFINO®

PC & PC Alloy, High Performance EP

LOTTE
ADVANCED MATERIALS

Contents

HIGH-PERFORMANCE

INFINITE

DIFFERENTIATED

INFINO® is LOTTE Advanced Materials' 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**
  - Polymerization
  - General
  - Flame Retardant
  - Eco-friendly
  - Medical
- **PC/ABS**
  - General
  - Metal Plating
  - Flame Retardant
  - Eco-friendly
  - Luminous
- **PC/ABS/GF**
  - Flame Retardant
  - Eco-friendly
- **PC/GF**
  - General
  - High Impact
  - Flame Retardant
  - Dimensional Stability
  - Eco-friendly
- **Special Alloy**
  - PC/ASA
    - General
    - High Heat
  - PC/PET
    - High Impact
    - High Modulus

INFINO®

High Performance EP

- **PPA**
  - PPA/GF
    - High Modulus
    - High Heat
    - Flame Retardant (Non-halogen)
- **PBT**
  - PBT
  - PBT/GF
    - General
    - Flame Retardant
    - Metal Adhesion
  - PBT/PC
  - PBT/ABS/GF
  - PBT/ASA/GF
  - PBT/PET/GF
  - PBT/PET/MF
- **mPPE**
  - mPPE
  - mPPE/GF
  - PA/PPE
  - PA/PPE/GF
  - PA/PPE/CNT
- **PPS**
  - PPS/GF
  - PPS/GF/MF
- **PCT**
  - PCT/GF

Product

APPLICATIONS

- Lighting
- Optical lenses, CDs/DVDs
- Building & Construction
- Furniture

APPLICATIONS

- E&E
  TV, Laptop, OA machines
- Battery, Smart meter

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

- SC-1100(U)R
- SC-1102UR
- SC-1220(U)R
- SC-1222UR
- SC-1280UR (Lighting)

Sheet

- SC-1060P
- SC-1060U
- SC-1063U

Automotive Lighting

- LT-1100
- LT-1220

Flame Retardant PC & PC Alloys

Flame retardant solution with a material property balance

FLAME RETARDANT PC PRODUCT LINE-UP

General

- Semi-transparent
  - General
    - TP-1029 (0.8T V2)
  - High Flow
    - TN-1045M (2.0T V2)
  - High Heat
    - TH-1100 (2.0T V0)
- Opaque
  - General
    - SA-1100 (0.75T V2)
    - SA-1220 (0.75T V2)
  - High Heat
    - HN-1064IW (1.5T V0)
    - HN-1035 (1.5T V0, 2.0T 5VB)
  - Flame Retardant for Thin-wall
    - UF-1017S (0.8T V0)
    - UF-1043 (0.75T V0, F2)
    - UF-1063 (0.6T V0)
  - Eco-friendly
    - GC-1022 (1.5T V0, PCM 20%)

Reinforced

- GF 10%
  - General
    - HN-3102GH (1.5T V0)
  - High Flow
    - HF-3200H
  - High Heat
    - HN-3104 (1.5T V0/5VA, F1)
- GF 20%
  - General
    - HF-3201M (1.5T V1)
  - High Flow
    - NH-3204G (2.0T V0)
    - NH-3208GL (0.75T V0)
  - Surface Quality
    - NH-3200 (0.75T V0)
- GF 30%
  - General
    - HM-3301GL
- GF 40%
  - General
    - NH-3402F (2.0T V1)

FLAME RETARDANT PC/ABS PRODUCT LINE-UP

General

- High Impact
  - General
    - NH-1015V (1.5T V0)
  - Light Resistant
    - NH-1015U (1.5T V0)
  - Flame Retardant for Thin-wall
    - NH-1021 (1.0T V0)
- High Flame Retardant
  - General
    - NH-1027HF (1.5T 5VB)
  - High Flow
    - NE-1029 (1.5T 5VB)
  - High Heat
    - NH-1049 (2.5T 5VB, GWIT)
    - NH-1034 (2.5T 5VA)
- High Flow
  - General
    - NE-1030 (1.5T V0)
  - Anti-hydrolysis
    - NH-1018 (1.5T V1)
- High Heat
  - General
    - NH-1037 (1.5T V0)
  - High Flow
    - NH-1033 (1.5T V0)
  - Anti-hydrolysis
    - NH-1041 (1.5T V0)
- High Modulus
  - High Impact
    - NH-1150HH (1.2T V0, MF 15%)
    - NH-1250 (1.2T V0, MF 25%)
  - High Flow
    - NM-1209 (1.4T V1, MF 20%)
    - NM-1219A (1.0T V1, MF 20%)
- Functionality
  - Eco-friendly (PCM 30%)
    - GC-1017 (2.0T V0)
    - GC-1015 (1.5T V0)
    - GC-1150 (1.2T V0)
  - Metal Plating
    - QP-1010 (2.5T V1)
  - Luminous
    - LX-1031 (1.5T V0, Sparkle)
  - Extrusion
    - EF-1032 (1.5T V0)

Reinforced

- GF 10%
  - General
    - HM-1100F (1.5T V0)
- GF 15%
  - General
    - LS-1150G (0.8T V0)
    - LS-1159 (1.5T V0)
  - High Impact
    - LS-1159S (1.5T V0)
  - Eco-friendly
    - GC-1151 (1.5T V1, PCM 20%)

APPLICATIONS

- Mobile devices
- E&E
  TV, Digital camera

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

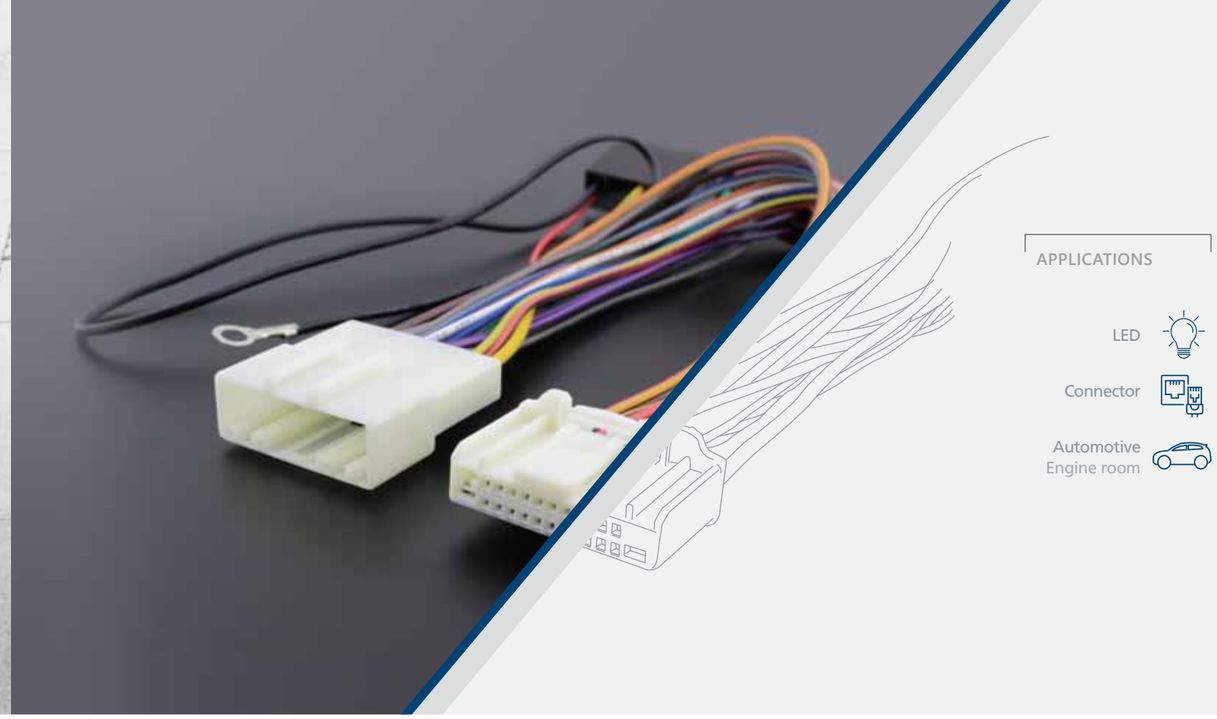
PRODUCT LINE-UP

General

- General
  - CF-1050
  - CF-1051
  - CF-1070
- Chemical Resistant
  - GM-1080
- Transparent
  - CF-1021T
- Eco-friendly
  - GW-1029 (PCM 50%)

Reinforced

- General
  - High Flow
    - LS-3104G (GF 10%)
  - Roundness
    - LS-3302 (GF 30%)
- High Impact
  - CF-3104HF (GF 10%)
  - CF-3200HF (GF 20%)
  - CF-3300HF (GF 30%)
- Surface Quality
  - GI-3103 (GF 10%)
- Eco-friendly
  - GW-3130 (GF 10%, PCM 75%)



APPLICATIONS

- LED
- Connector
- Automotive
  Engine room

High Heat Resistant EP

Material reliability with thermal stability

PRODUCT LINE-UP

PCT (High Reflectivity/Reliability)

- LED Reflector
  - General
    - TK-2046H
  - High Modulus
    - TK-2046HD
  - High Reflectivity
    - TK-2050HL
  - High Power
    - TK-2046P

PPA (High Heat Resistance/Impact Strength)

- Connector (PA6T)
  - General
    - HX-4300G
  - Colorability
    - HX-4302G
    - HX-4452G
- Automotive (Long-term Heat Resistance)
  - General
    - HA-4302G (GF 30%)
    - HA-4353G (GF 33%, Ductility)
    - HA-4350G (GF 35%)
  - Shield Effect
    - HA-4350HP (GF 35%)
  - Metal Plating
    - HA-4400MP
    - HA-4405MP (Surface Quality)

KEY FEATURES

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

APPLICATIONS

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

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)	PPS (High Impact/Anti-scratch)
HM-4300G (PPA/GF 30%, 10GPa)	XP-2130A (PPS/GF 30%, Anti-scratch)
HM-4500G (PPA/GF 50%, 13GPa)	XP-2140C (PPS/GF 40%, Cross)
MKD-1016 (PA/GF 55%, 15GPa, Low Warpage)	XP-2165MC (PPS/GF/MF 65%, Cross)
HM-4650LW (PPA/GF 65%, 20GPa, Low Warpage)	

APPLICATIONS

Metal Adhesion

- Mobile devices
  Rear cover

LDS

- Internal antenna
  Mobile devices, E&E

Metal Adhesion, LDS Materials

Functional solution for cutting-edge mobile technology

PRODUCT LINE-UP

- **Metal Adhesion**
  - PBT/GF
    - JS-5302 (GF 30%)
    - JS-5405 (GF 40%)
    - JS-5406 (GF 40%, High Adhesion)
- **LDS (Laser Direct Structuring)**
  - PC
    - LP-1020 (Black)
    - LP-1021 (White etc.)
  - PC/GF
    - LP-3303 (GF 30%, Black)
  - PC/ABS
    - LP-1010 (Black)
    - LP-1011 (White etc.)

KEY FEATURES

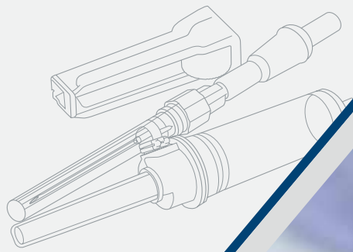
Metal Adhesion

- High adhesiveness
- Impact strength, Low shrinkage
- Chemical resistance

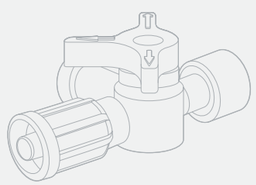
LDS

- Plating adhesion strength
- Impact strength
- Color & UV stability

APPLICATIONS



Medical devices
3-way stop cock,
Hemodialyzer housing,
Flask, etc.



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

Medical

- EtO Sterilization
  - ML-1010R (MFI 11.5)
  - ML-1020R (MFI 22)
- Γ-ray Resistant
  - High Impact
    - MR-1005 (MFI 7.5)
  - Mid Flow
    - MR-1015 (MFI 18.5)
  - High Flow
    - MR-1020 (MFI 23.5)

Automotive Materials

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

PRODUCT LINE-UP

Interior

- PC
  - General
    - LT-1100
    - LT-1220
  - Diffusion
    - TP-1020
- PC/ABS
  - General
    - HP-1000X
    - HP-1000XA
  - High Flow
    - WP-1069
    - WP-1089
  - Chemical Resistant
    - HP-1000XC
    - WP-1059J
  - Luminous (Paint-free)
    - LX-1098F
- PC/ABS/GF
  - WP-1100 (10%)
  - WP-1200 (20%)
- PC/ASA
  - WR-7250H

Exterior

- PC/ABS
  - Painting
    - WP-1059
  - Metal Plating
    - WP-1041(G)
    - WP-1051
    - WP-1061
- PC/PET
  - General
    - AE-2030
  - High Modulus (MF)
    - AE-2130 (5%)
    - AE-2150 (15%)
    - AE-2230 (20%)
- PC/PBT
  - General
    - AE-3060
  - High Impact at Low Temp.
    - AE-3063I
- PC/ASA
  - General
    - WR-7000
  - Heat Resistant
    - WX-7010
    - WX-7030

Structure

- PBT/ASA/GF
  - AR-5300H
- PA/PPE/CNT
  - CA-7000C
  - CA-7009
- PBT/PET/GF
  - AR-6200

Lighting

- LENS PC
  - LT-1100
  - LT-1220
- PC/ABS
  - General
    - HP-1000XA
  - High Flow
    - WP-1069
    - WP-1089
  - High Gloss/Low Gas
    - HP-1000XG
- PBT
  - ASF-9810FM
  - ASF-9810FL
- PBT/PET/MF
  - ASF-9810F

Transparent PC

				General								Sheet			Automotive	
Properties	Test Method	Condition	Unit	SC-1100R	SC-1100UR	SC-1102UR	SC-1220R	SC-1220UR	SC-1222UR	SC-1280UR		SC-1060P	SC-1060U	SC-1063U	LT-1100	LT-1220
Physical Properties																
Specific Gravity	ASTM D792	-	g/cm²	1.2	1.2	1.2	1.2	1.2	1.2	1.2		1.2	1.2	1.2	1.2	1.2
Water Absoption	ASTM D570		%													
Melt Flow Index	ASTM D1238	300℃, 1.2kg	g/10min	11.5	11.5	11.5	22	22	20	28		6	6	6	11.5	22
		250℃, 1.2kg	g/10min													
	ISO 1133	300℃, 1.2kg	g/10min	11.5	11.5	11.5	22	22	20	28		6	6	6	11.5	22
		250℃, 1.2kg	g/10min													
Mold Shrinkage	ASTM D955	-	%	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
Mechanical Properties																
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²	640	640	640	640	640	640	640		660	660	660	640	640
	ISO 527-1A	50mm/min	Mpa	64	64	64	64	64	64	64		65	65	65	64	64
		5mm/min	Mpa													
Tensile Strain at break	ASTM D638	50mm/min	%	110	110	110	90	90	90	90		110	110	110	110	90
	ISO 527-1A	50mm/min	%	6	6	6	6.5	6.5	6.5	6.5		5.5	5.5	5.5	6	6.5
		5mm/min	%													
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	920	920	920	920	920	920	920		930	930	930	920	920
	ISO 178	2mm/min	Mpa	91	91	91	91	91	91	90		92	92	92	91	91
		2.8mm/min	Mpa													
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	23,000	23,000	23,000	23,000	23,000	23,000	23,000		23,000	23,000	23,000	23,000	23,000
	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
		2.8mm/min	Mpa													
Izod Impact Strength	ASTM D256	(notched)1/4	kgf·cm/cm	15	15	15	10	10	10	10		15	15	15	15	10
		(notched)1/8	kgf·cm/cm	87	87	87	75	75	75	70		90	90	90	87	75
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m²	80	80	80	60	60	60	50		85	85	85	80	60
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	85	85	85	65	65	65	60		90	90	90	85	65
Rockwell Hardness	ASTM D785	R-Scale		120	120	120	120	120	120	120		120	120	120	120	120
	ISO 2039-2	R-Scale		120	120	120	120	120	120	120		120	120	120	120	120
Thermal Properties																
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	℃	135	135	135	134	130	130	130		137	137	137	135	130
		4.6kgf/cm², 6.4mm	℃	140	140	140	140	137	137	137		142	142	142	140	137
	ISO 75-2	1.8MPa, 4.0mm	℃	125	125	125	123	122	122	122		127	127	127	125	122
		0.45MPa, 4.0mm	℃	135	135	135	135	134	134	134		137	137	137	135	134
VICAT Softening Temperature	ISO R306	B/50	℃	145	145	145	145	145	145	144		147	147	147	145	145
Flame Characteristics																
Flammability	UL94	HB	mm									2.6-3.2	2.6-3.2	2.6-3.2		
		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		1.6-2.0	1.6-2.0	1.6-2.0	0.8-3.0	0.8-3.2
		V-1	mm													
		V-0	mm													
		5VA	mm													
		5VB	mm													

Flame Retardant PC & PC Alloy

				Flame Retardant PC							Flame Retardant PC							
				General							General		Reinforced					
Properties	Test Method	Condition	Unit	TP-1029	TN-1045M	TH-1100	SA-1100	SA-1220	HN-1064IW		UF-1017S	GC-1022	HN-3102GH	HN-3104	HF-3201M	HF-3200H	NH-3208GL	NH-3200	NH-3204G	HM-3301GL
Physical Properties																				
Specific Gravity	ASTM D792	-	g/cm²	1.2	1.22	1.2	1.2	1.2	1.18		1.2	1.18	1.26	1.28	1.33	1.37	1.35	1.34	1.34	1.41
Water Absoption	ASTM D570	-	%												0.15					
Melt Flow Index	ASTM D1238	220℃, 10kg	g/10min								19						23.2			
		220℃, 5kg	g/10min																	
		250℃, 2.16kg	g/10min																	
		250℃, 10kg	g/10min		92	17			30			30	22	12.5	11	11			36	7
		250℃, 5kg	g/10min															19		
		300℃, 1.2kg	g/10min	10.5			9	20												
	ISO 1133	220℃, 10kg	g/10min								19						23.2			
		220℃, 5kg	g/10min																	
		250℃, 2.16kg	g/10min																	
		250℃, 10kg	g/10min		92	17			30			30	22	12.5	11	11			36	7
		250℃, 5kg	g/10min															19		
		300℃, 1.2kg	g/10min	10.5			9	20												
Mold Shrinkage	ASTM D955	-	%	0.4-0.7	0.3-0.6	0.4-0.7	0.4-0.7	0.4-0.7	0.4-0.7		0.3-0.6	0.4-0.7	0.2-0.5	0.3-0.6	0.1-0.4	0.2-0.5	0.2-0.4	0.2-0.4	0.2-0.5	0.1-0.3
Mechanical Properties																				
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²	640	750	650	650	650	590		620	590								
		5mm/min	kgf/cm²										800	550	1,100	1,100	1,070	1,200	1,100	1,375
	ISO 527-1A	50mm/min	Mpa	63	73	60	63	60	55		61	55				110	105		100	115
		5mm/min	Mpa										80	60	100			120		
Tensile Strain at break	ASTM D638	50mm/min	%		97	100	91	65	100		70	100								
		5mm/min	%										3	6	4	4.3		3		
	ISO 527-1A	50mm/min	%		95	92	90	65	100		93	100					3			
		5mm/min	%										3	6	4	3.7		3		2.7
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	850	1,100	960	980	990	800		910	800	1,200	1,000	1,700	1,500	1,400	1,500	1,490	2,000
	ISO 178	2.8mm/min	Mpa																	
		2mm/min	Mpa	90	108	95	90	90	80		90	80	120	90	150	170	140	150	146	153
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	22,000	27,000	22,000	23,000	23,000	21,000		23,500	21,000	35,000	35,000	53,000	55,000	59,300	60,000	53,500	78,000
	ISO 178	2.8mm/min	Mpa																	
		2mm/min	Mpa	2,260	2,650	2,400	2,260	2,050	2,100		2,350	2,100	3,500	3,500	5,000	5,800	5,400	6,000	6,000	7,900
Izod Impact Strength	ASTM D256	(notched)1/4	kgf-cm/cm		4.1		20	12					9	8	15			10		14
		(notched)1/8	kgf-cm/cm	90	2.5	>5	70	70	60		65	60	9	10	16	14	9	10	9	
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m²				70	45	50		67	50	9	10	16	14	10	10	8	11
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²		2.5		70	25	50		64	50	9	10	13	11.5	10	10	7	
Rockwell Hardness	ASTM D785	R-Scale			124	119	120	120	118		119	120	115	115			120	120		93
	ISO 2039-2	R-Scale		120	124	119	120	120	119		119	120	115	115		118	120	120		119
Thermal Properties																				
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	℃		97	130	127	120	126			127	138	140	138	140	93	100	114	143
		4.5kgf/cm², 6.4mm	℃					130						139	140	145		105		
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	℃	125	89	123	125	120	123		93	123	138	137		140	91	100		142
		Unannealed 0.45MPa, 4.0mm	℃		99			130			104			136		145	98	105		146
		Annealing 1.8MPa, 4.0mm	℃		100						105						94			
		Annealing 0.45MPa, 4.0mm	℃		104						108						98			
VICAT Softening Temperature	ISO R306	B/50	℃	142	106	144	142	138	142		109	142		135		147	100			150
Flame Characteristics																				
Flammability	UL94	HB	mm																	
		V-2	mm	0.8, 3.0	2.0, 3.0		0.75, 3.0	0.75, 3.0	0.75		0.4	0.75				1.5				
		V-1	mm												1.5					1.5
		V-0	mm			2.0			1.5, 3.0		0.7-3.0	1.5, 3.0	1.5	1.5, 3.0	3.0	3.0	0.75, 3.0	0.75, 3.0	2.5	3.0, 6.0
		5VA	mm																	
		5VB	mm																	

Flame Retardant PC & PC Alloy

				Flame Retardant PC/ABS											Flame Retardant PC/ABS													
				General											General									Reinforced				
Properties	Test Method	Condition	Unit	NH-1015V	NH-1021	NH-1015U	NH-1027HF	NE-1029	NH-3402F	NE-1030	NH-1018	NH-1037	NH-1033		NH-1250	NM-1209	NM-1219A	QP-1010	GC-1015	GC-1150	GC-1017	LX-1031	EF-1032	HM-1100F	LS-1150G	LS-1159	LS-1159S	GC-1151
Physical Properties																												
Specific Gravity	ASTM D792	-	g/cm²	1.17	1.2	1.18	1.19	1.17	1.51	1.18	1.17	1.19	1.18		1.39	1.35	1.33	1.15	1.18	1.29	1.17	1.18	1.19	1.26	1.28	1.28	1.28	1.28
Water Absoption	ASTM D570	-	%				0.2		0.15																			
Melt Flow Index	ASTM D1238	220℃, 10kg	g/10min	30	28	34	55	36		43	35	19	35					50	43	31	46	24		26				
		220℃, 5kg	g/10min														26											
		250℃, 2.16kg	g/10min													12									14	9	18
		250℃, 10kg	g/10min						33														20		24			
		250℃, 5kg	g/10min												38													
		300℃, 1.2kg	g/10min																									
	ISO 1133	220℃, 10kg	g/10min	30	28	34	55	36		43	35	19	35					50	43	31	46	24		26				
		220℃, 5kg	g/10min														26											
		250℃, 2.16kg	g/10min													12									14	9	18
		250℃, 10kg	g/10min						33														20		24			
		250℃, 5kg	g/10min												38													
		300℃, 1.2kg	g/10min																									
Mold Shrinkage	ASTM D955	-	%	0.5-0.7	0.4-0.6	0.5-0.7	0.4-0.7	0.4-0.7	0.1-0.4	0.4-0.7	0.4-0.7	0.5-0.7	0.4-0.7		0.2-0.4	0.2-0.6	0.2-0.6	0.5-0.8	0.4-0.7	0.2-0.5	0.4-0.7	0.4-0.7	0.5-0.8	0.3-0.6	0.3-0.6	0.3-0.6	0.3-0.6	0.1-0.4
Mechanical Properties																												
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²	650	670	600	610	630		680	630	670	600					580	600	650	580	550	650					
		5mm/min	kgf/cm²						1,430						630	500	550							800	900	800	900	900
	ISO 527-1A	50mm/min	Mpa	61	67	60	67	60	184	67	60	61	60					58	60	64	59	54	65		86			
		5mm/min	Mpa												63	50	45							80		80	90	90
Tensile Strain at break	ASTM D638	50mm/min	%		50	50		40		59	15	109	30					60	50	11	23		120					
		5mm/min	%						3.2						15	4	4							4		3.3	3	3
	ISO 527-1A	50mm/min	%	45	50	50		35	3.2	35	15	28	30					60	50	11	8	46	73		3.6			
		5mm/min	%												15	4	5							4		3.3	3	4
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	890	950	900	900	850	1,800	940	850	1,000	900		950	800	900	850	900	950	890		950	1,000	1,400	1,200	1,200	1,200
	ISO 178	2.8mm/min	Mpa												95													
		2mm/min	Mpa	89	95	90	89	90	250	93	90	92	90			80	80	85	90	93	86	82	95	100	135	110	120	120
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	24,000	26,000	25,000	24,000	24,000	110,000	26,500	25,000	27,000	23,000		55,000	45,000	42,000	23,000	25,000	41,000	25,500	23,000	24,000	40,000	46,000	48,000	45,000	48,000
	ISO 178	2.8mm/min	Mpa												5,500													
		2mm/min	Mpa	2,550	2,600	2,500	2,550	2,500	12,000	2,500	2,700	2,650	2,300			4,500	3,500	2,300	2,600	3,900	2,700	2,300	2,400	4,000	4,400	5,000	4,500	4,800
Izod Impact Strength	ASTM D256	(notched)1/4	kgf·cm/cm		8	18		17	10	12		19	15		4	3	4.5	30	15	6				8		6	8	6
		(notched)1/8	kgf·cm/cm	55	30	55	55	20	11	45	70	60	60		5	4	5	50	50	7	45	37	84	8	9	6	8	6
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m²	17	20	45	16.5	20	17	20	26	30	30		5	3	8	20	15	7	15	37		7	9.9	6	8	6
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	14	30	40	14	17	16	16	25	40	55		5	3.5	6	50	50	6	17	34	53	8	8.2	6	8	6
Rockwell Hardness	ASTM D785	R-Scale		118	120	118	118	115	122		110	120	119		110			107	116	116	115	115	120	118		120	120	120
	ISO 2039-2	R-Scale		118	120	118	118	115	122	118	110	120	119		110			107	116	116	115	115	120	118	121	120	120	120
Thermal Properties																												
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	℃	86	89	86		79	110	83		100	92		91	81	85	78	85	83	83		95	93	127	91	90	91
		4.5kgf/cm², 6.4mm	℃		97			88	117			108			94			79	93	85	91			95			93	
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	℃	82	85	82			114	77		93	86		86	79	82	78	80	83	77	76	92	94	120	91	90	
		Unannealed 0.45MPa, 4.0mm	℃	94	96				122	90		105			89		85	79	90	85	86	86		95	122		93	
		Annealing 1.8MPa, 4.0mm	℃	97						85		100										83			123			
		Annealing 0.45MPa, 4.0mm	℃	102						93		106										90			128			
VICAT Softening Temperature	ISO R306	B/50	℃	100	100	98	98	90	118	93	98	112	107		96		94	89	96	96	93	93	107	98	128		95	
Flame Characteristics																												
Flammability	UL94	HB	mm																									
		V-2	mm							1.0															0.8-3.0			
		V-1	mm				1.0	1.0	2.0		1.5					1.4	1.0	2.5								1.5	1.5	1.5
		V-0	mm	1.5	1.0, 3.0	1.5, 3.0	1.2, 1.5, 3.0	1.2-3.0	2.5, 3.0	1.5, 3.0	2.0, 3.0	1.5, 3.0	1.5, 3.0		1.2, 3.0	3.0	1.5	3.2	1.5	1.2, 3.0	2.0, 3.0	1.5-3.0	1.5	2.0, 3.0		2.0, 2.5, 3.0	2.0, 2.5. 3.0	3.0
		5VA	mm																3.0				3.0					
		5VB	mm	2.0			1.5, 3.0	1.5											2.0		2.0, 3.0		2.0					

High Impact Strength PC & PC/GF

Properties	Test Method	Condition	Unit	General							Reinforced						
				CF-1050	CF-1051	CF-1070	GM-1080	CF-1021T	GW-1029		LS-3104G	LS-3302	CF-3104HF	CF-3200HF	CF-3300HF	GI-3103	GW-3130
Physical Properties																	
Specific Gravity	ASTM D792	-	g/cm^2	1.18	1.2	1.2	1.2	1.18	1.18		1.25	1.4	1.25	1.33	1.4	1.25	1.24
Water Absoption	ASTM D570	-	%														
Melt Flow Index	ASTM D1238	300℃, 1.2kg	g/10min		12		16	19									
		250℃, 10kg	g/10min	18	22	13	28	36	19		30	12	23	23	22	33	17
	ISO 1133	300℃, 1.2kg	g/10min		12		16	19									
		250℃, 10kg	g/10min	18	22	13	28		19		30	12	23	23	22	33	17
Mold Shrinkage	ASTM D955	-	%	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	0.3-0.6	0.2-0.5	0.1-0.4	0.3-0.6	0.3-0.6
Mechanical Properties																	
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm^2	600	600	600	600	650	590								
		5mm/min	kgf/cm^2								800	1,300	600	1,000	1,200	560	520
	ISO 527-1A	50mm/min	Mpa	55	60	58	60	60	60		80						
		5mm/min	Mpa									120	60	100	125	53	55
Tensile Strain at break	ASTM D638	50mm/min	%		100		100	80	80								
		5mm/min	%								5	4			3.8	10	13
	ISO 527-1A	50mm/min	%	114	100		100	80	80								
		5mm/min	%									3			3.6	10	13
Flexural Strength	ASTM D790	5mm/min	kgf/cm^2														
		2.8mm/min	kgf/cm^2	850	850	850	800	850	840		1,400	1,800	950	1,400	1,700	880	900
	ISO 178	2mm/min	Mpa	84	80	80	80	92	81		130	175	95	170	180		88
		2.8mm/min	Mpa													85	
Flexural Modulus	ASTM D790	5mm/min	kgf/cm^2														
		2.8mm/min	kgf/cm^2	20,000	20,000	20,000	20,000	21,000	20,000		38,000	75,000	30,000	56,000	66,000	32,000	32,000
	ISO 178	2mm/min	Mpa	2,100	2,200	2,100	2,000	2,300	1,980		3,800	8,300	3,000	6,000	7,300		3,200
		2.8mm/min	Mpa													3,160	
Izod Impact Strength	ASTM D256	(notched)1/4	kgf·cm/cm	55	55	55	60	10	56		6	12			15	16	18
		(notched)1/8	kgf·cm/cm	70	70	70	72	70			8	17	28	19	18	23	25
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m^2	60	60	60	58	57	91		6	12	27	25	18	19	20
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m^2	60	50	65	53	70	65			12	27	19	17	18	19
Rockwell Hardness	ASTM D785	R-Scale		120	118		116	120	116				116	116	115	115	110
	ISO 2039-2	R-Scale		120	118		116	120	116		121	120	116	116	115	115	110
Thermal Properties																	
Heat Deflection Temperature	ASTM D648	18.56kgf/cm^2, 6.4mm	℃		129		125	120	124		135	140	141	141	140	131	137
		4.5kgf/cm^2, 6.4mm	℃		135		135	133				144			143	136	142
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	℃	121	129		115	130				140	141		138	130	131
		Unannealed 0.45MPa, 4.0mm	℃	136	135		130	133			135	144			143	134	143
		Annealing 1.8MPa, 4.0mm	℃	125													131
		Annealing 0.45MPa, 4.0mm	℃	136													143
Flame Characteristics																	
Flammability	UL94	HB	mm						0.8, 1.5, 3.0							0.8	0.8, 3.2
		V-2	mm		0.8, 2.5, 3.0	0.8, 2.5, 3.0	0.8, 3.0						0.8	0.8	0.8		
		V-1	mm										3.2	3.2	3.2		
		V-0	mm														
		5VA	mm														
		5VB	mm														

High Performance EP

				High Heat								High Heat			High Modulus						
				PCT			PPA (Connector)			PPA (Automotive)		PPA (Automotive)			PA (PPA)				PPS		
Properties	Test Method	Condition	Unit	TK-2046H	TK-2046HD	TK-2046P	HX-4300G	HX-4302G	HX-4452G	HA-4302G		HA-4350G	HA-4350HP	HA-4400MP	HM-4300G	HM-4500G	MKD-1016	HM-4650LW	XP-2130A	XP-2140C	XP-2165MC
Physical Properties																					
Specific Gravity	ASTM D792	-	g/cm²	1.6	1.53	1.61	1.45	1.43	1.58	1.34		1.47	1.44	1.44	1.41	1.58	1.64	1.78	1.65	1.66	1.96
Water Absoption	ASTM D570	-	%														3.9				0.02
Melt Flow Index	ASTM D1238	300℃, 1.2kg	g/10min														10				
		300℃, 2.16kg	g/10min	60	60	45															
		315.5℃, 5kg	g/10min																115		80
		316℃, 5kg	g/10min																	55	
		330℃, 2.16kg	g/10min				25	20	8.5	5		17			25						
	ISO 1133	300℃, 1.2kg	g/10min														10				
		300℃, 2.16kg	g/10min	60	60	45															
		315.5℃, 5kg	g/10min																115		80
		316℃, 5kg	g/10min																	83	
		330℃, 2.16kg	g/10min				25	20	8.5	5		17			25						
Mold Shrinkage	ASTM D955	-	%	0.5-0.8	0.5-0.8	0.5-0.8	0.3-0.6	0.3-0.6	0.2-0.4	0.35-0.65		0.2-0.5	0.4-0.7	0.1-0.3	0.3-0.4	0.2-0.5	0.2-0.3	0.1-0.4	0.3-1.2	0.27-0.33	0.25-0.8
Mechanical Properties																					
Tensile Strength at Yield	ASTM D638	5mm/min	kgf/cm²	630	670	740	1,700	1,450	1,500			2,100	2,000	1,750	2,000	2,500	2,700	2,800	1,400	1,900	1,500
	ISO 527-1A	50mm/min	Mpa						150												150
		5mm/min	Mpa	29	58	65	160	145				215	200	175	200	250	260	280	128	180	
Tensile Strain at break	ASTM D638	5mm/min	%	1.5	2	2.2	3	3.5	3			4.1	3	4	3	3	4.2	3	3	3	1.5
	ISO 527-1A	50mm/min	%						3												2
		5mm/min	%		2	1.7	3	3.5				4.2	3	4	3	3	4.2	3	3	2.7	
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	820	960	1,090	2,200	2,200	2,400	2,300		2,800	2,400	2,400	2,500	3,500	3,400	3,900	2,000	2,700	2,000
		5mm/min	kgf/cm²																		
	ISO 178	2mm/min	Mpa	80	88	95	210	220	240	220		275	240	240		350	330	390		260	240
		2.8mm/min	Mpa												250				190		
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	71,000	56,000	65,000	100,000	95,000	135,000	80,000		110,000	110,000	90,000	95,000	150,000	156,000	200,000	100,000		180,000
		5mm/min	kgf/cm²																		
	ISO 178	2mm/min	Mpa	7,000	5,400	6,700	10,600	9,500	13,500	7,500		10,500	11,000	9,000		15,000	16,000	20,000		13,400	18,000
		2.8mm/min	Mpa												10,000				10,000		
Izod Impact Strength	ASTM D256	(notched)1/4	kgf-cm/cm		3	3	7	5	6			7.5		10	8	13	12	15	8	8.7	5.4
		(notched)1/8	kgf-cm/cm	2.5	3	4	6.5	5	6	11		7.5	8.5	10	8	13	13	15	9	10	6
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m²	2	2	4	10	5		13		11			8	13	17		11	13	
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	2	2	3	8.3		6			10	8.5	10	8	13	17	15	11	11	5
Rockwell Hardness	ASTM D785	R-Scale				118	122	120	125			124	110		120	120	121	120	120	121	121
	ISO 2039-2	R-Scale				118	122	120	128			124	110		120	120	121	120	116	121	121
Thermal Properties																					
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	℃	260	220	250	290	280	285	280		290	280	275	295	240	250	245	275	270	270
		4.5kgf/cm², 6.4mm	℃	281															282	282	284
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	℃	260	220	232	290	280	285	280		290	280	275	295	240	250	245	275	267	272
		Unannealed 0.45MPa, 4.0mm	℃			248													289	283	285
		Annealing 1.8MPa, 4.0mm	℃																	272	274
		Annealing 0.45MPa, 4.0mm	℃																	283	283
Flame Characteristics																					
Flammability	UL94	HB	mm	1.5, 3.0		1.5, 3.0									0.8-3.0		0.8, 1.5, 3.0				
		V-2	mm																		
		V-1	mm																		
		V-0	mm				0.4-3.0	0.4	0.4-3.2										0.75	0.9	1.6
		5VA	mm																		1.6

Functional Solution Metal Adhesion, LDS, Medical

				Metal Adhesion		LDS (Laser Direct Structuring)					Medical	
				PBT/GF		PC		PC/GF	PC/ABS		EtO Sterilization	
Properties	Test Method	Condition	Unit	JS-5302	JS-5405	LP-1020	LP-1021	LP-3303	LP-1010	LP-1011	ML-1010R	ML-1020R
Physical Properties												
Specific Gravity	ASTM D792	-	g/cm²	1.52	1.59	1.26	1.23	1.47	1.19	1.21	1.2	1.2
Melt Flow Index	ASTM D1238	300℃, 1.2kg	g/10min			14	16	17	15	17	11.5	22
		250℃, 10kg	g/10min			21	28	26	28	36		
		275℃, 2.16kg	g/10min									
		280℃, 2.16kg	g/10min	23	20							
	ISO 1133	300℃, 1.2kg	g/10min			14	16	17	15	17	11.5	22
		250℃, 10kg	g/10min			21	28	26	28	36		
		275℃, 2.16kg	g/10min									
		280℃, 2.16kg	g/10min	23	20							
Mold Shrinkage	ASTM D955	-	%	0.3-0.6	0.2-0.5	0.4-0.7	0.4-0.7	0.1-0.3	0.4-0.7	0.4-0.7	0.5-0.7	0.5-0.7
Mechanical Properties												
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²			580	590		530	530	640	640
		5mm/min	kgf/cm²	1,300	1,350			960				
	ISO 527-1A	50mm/min	Mpa			60	60		55	55	64	64
		5mm/min	Mpa	127	132			100				
Tensile Strain at break	ASTM D638	50mm/min	%			75	80		90	85	110	90
		5mm/min	%	3.6	3.1			2.8				
	ISO 527-1A	50mm/min	%			75	80		90	85	6	6.5
		5mm/min	%	3.6	3.1			2.8				
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	1,900	2,000	850	830	1,400	800	800	920	920
	ISO 178	2mm/min	Mpa	186	196	85	85	120	75	75	91	91
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	85,000	103,000	22,000	23,000	69,000	23,000	25,000	23,000	23,000
	ISO 178	2mm/min	Mpa	8,300	10,100	2,000	2,500	6,500	2,300	2,500	2,300	2,300
Izod Impact Strength	ASTM D256	(notched)1/4	kgf·cm/cm	10	10.5	55	30	10	47	25	15	10
		(notched)1/8	kgf·cm/cm	10	11.5	70	63	11	60	50	87	75
Charpy Impact Strength (V-notched)	ISO 179 1eA	(notched)	KJ/m²	10	12	70	65	11	63	55	80	60
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	10	12	65	60	10	60	50	85	65
Rockwell Hardness	ASTM D785	R-Scale		116	115	117	118	115	113	116	120	120
	ISO 2039-2	R-Scale		116	115	117	118	115	113	116	120	120
Thermal Properties												
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	℃	206	211	129	132	125	110	115	135	134
		4.5kgf/cm², 6.4mm	℃			140	142	132	125	124	140	140
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	℃	206	211	125	135	124	108	115	125	123
		Unannealed 0.45MPa, 4.0mm	℃			135	139	133	124	124	135	135
VICAT Softening Temperature	ISO R306	B/50	℃			141	137	126	127	126	145	145
Flame Characteristics												
Flammability	UL94	HB	mm	HB	HB	HB	HB	HB	HB	HB		
		V-2	mm								0.75-3.0	0.75-3.2
		V-1	mm									
		V-0	mm									
		5VA	mm									
		5VB	mm									

Our Solutions

LOTTE ADVANCED MATERIALS offers a wide range of high-quality solutions generating new value and innovation in everyday life.

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- High Value Construction Materials for Upscale Design
- Eco-friendly Solution for Sustainable Growth

At a Glance

Field of Business

Plastics

starex® Styrene Resin
ABS, ABS Alloy, ASA, EPS, SAN

INFINO® Engineering Plastics
PC, PC Alloy, PBT, mPPE, PA, PPA, PPS, PCT, TPE

Construction Materials

staron® Acrylic Solid Surface
Solid Surface

Radianz® Engineered Stone (Natural Quartz)
Quartz Surface

Key Industries

- Electrical & Electronics
- Home Appliances
- IT & Mobile
- Automotive
- Lighting & Energy
- Building & Construction
- Healthcare
- Furniture, Miscellaneous

Sales & Production Sites

15 Countries

31 Bases

HQ/R&D
South Korea (Uiwang)

Production Plant
South Korea (Yeosu),
China (Tianjin/Dongguan), Mexico (Tijuana), Hungary (Tatabanya)

Sales Corporation
China (Shanghai), U.S.A. (Los Angeles), Germany (Frankfurt), Thailand (Bangkok), Japan (Tokyo)

Capacity

ABS 660K Tons

PC 240K Tons

Acrylic Solid Surface 970K Sheets

Employees Worldwide

Approx. 1,750

Sales & Assets (2016)

Sales 2.22 USD billion

Assets 1.52 USD billion

Global Network

SOUTH KOREA

Uiwang Headquarters
Tel: +82-31-596-3408

Yeosu Plant
Tel: +82-61-689-1221

Gwangju Service Office
Tel: +82-62-945-1352

Busan Service Office
Tel: +82-51-465-6829

Gumi Sales Office
Tel: +82-54-468-2811

Ulsan Sales Office
Tel: +82-52-267-9808

GLOBAL

Sales Corporation

Los Angeles, U.S.A.
Tel: +1-714-443-0945

Frankfurt, Germany
Tel: +49-6196-7727-260

Shanghai, China
Tel: +86-21-6270-3000

Tokyo, Japan
Tel: +81-3-6369-6424

Bangkok, Thailand
Tel: +66-2-624-6726

Production Plant

Tianjin, China
Tel: +86-22-5868-291(610)

Dongguan, China
Tel: +86-769-8300-9762

Tatabanya, Hungary
Tel: +36-34-814-120

Tijuana, Mexico
Tel: +52-664-533-3516

Branch/Sales Office

ASIA

Shenzhen, China
Tel: +86-755-8203-2323

Tianjin, China
Tel: +86-22-2836-4261

Suzhou, China
Tel: +86-512-6262-0323

Weihai, China
Tel: +86-631-5666-812

Qingdao, China
Tel: +86-532-8577-9681

Hanoi, Vietnam
Tel: +84-43-227-2071

Ho Chi Minh City, Vietnam
Tel: +84-8-3528-5427

Kuala Lumpur, Malaysia
Tel: +60-3-2283-3714

Jakarta, Indonesia
Tel: +62-21-250-5517

Chennai, India
Tel: +91-44-4299-4255

Delhi, India
Tel: +91-124-4153-804

AMERICA

Detroit, U.S.A.
Tel: +1-248-509-7471

San Diego, U.S.A.
Tel: +1-619-500-2837

EUROPE

Milano, Italy
Tel: +39-02-0069-6521

Istanbul, Turkey
Tel: +90-212-437-8101(115)

MIDDLE EAST

Dubai, U.A.E.
Tel: +971-4-245-1400

INFINO®

LOTTE
ADVANCED MATERIALS

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