

The Future of Automotive

Automotive Material Solutions



LOTTE
ADVANCED MATERIALS

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LOTTE Advanced Materials is committed to creating value beyond customer's expectation, at the center of **future** of automotive based on **competitive** products, **innovative** solution, and in close partnership with you.



FUTURE



COMPETITIVE



INNOVATIVE

Product Portfolio



INTERIOR



Fresh Interior



Upscale Design

- Low Gloss ABS, PC/ABS, PC/ASA
- Low TVOC ABS
- High Flow PC/ABS
- Light Diffusion PC
- Light Blocking ABS, PC/ABS
- Chemical Resistant PC/ABS



EXTERIOR



Weatherability



Safety

- Metal Plating ABS & PC/ABS
- High Weatherable ASA
- High Weatherable/Impact PC/ASA
- High Modulus PC/PET
- High Flow/Impact PC/PBT



LIGHTING



Functionality & Productivity



Optical Solution

- High Gloss/Low Gas PBT
- High Gloss/Low Gas PC/ABS
- High Weatherable/Impact PC



STRUCTURE



Light-weight & Metal Replacement



Part-integrated Design

- Conductive/High Heat PA/PPE/CNT
- Dimensional Stability PBT/ASA/GF



INTERIOR



Fresh Interior



Upscale Design

ABS

- Heat Resistant
 - General
 - SR-0300
 - SR-0310FM
 - SR-0320 K
 - SR-0325LT
 - SR-0330M
 - SR-0340M
 - Low TVOC
 - SR-0320LT
 - SR-0325LT
 - Low Gloss
 - Super Low Gloss
 - SL-0100
 - Heat Resistant
 - LH-0300
 - Light Blocking
 - SR-0320 K
 - SR-0325 LT

PC/ABS

- General
 - HP-1000XA
 - HP-1000X
- High Flow
 - WP-1069
 - WP-1089
- Low Gloss
 - WP-1098
- Paint-free
 - LX-1098F
- Chemical Resistant
 - WP-1059J
 - HP-1000XC
- Light Blocking
 - WP-1069

PC/ABS/GF

- WP-1100
- WP-1200

PC/ASA

- Low Gloss
 - WR-7250H

PC

- Light Diffusion
 - TP-1020

Low TVOC ABS

SR-0320LT
SR-0325LT

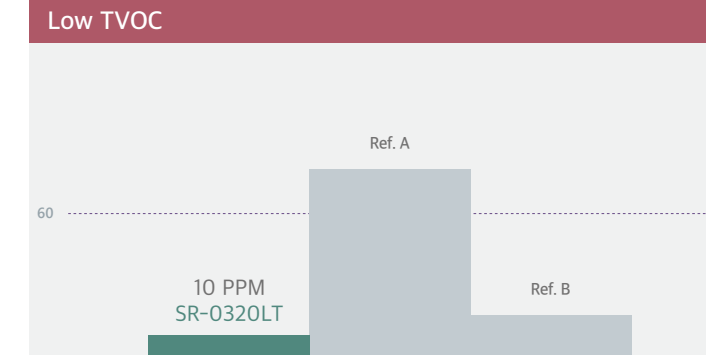
BENEFITS

- Low TVOC: VDA277 (<50µgC/g)
- Less odor: VDA270

APPLICATIONS

- Center console
- Window switch panel
- Door upper trim

CHARACTERISTICS



Heat Resistance

	SR-0320LT	Reference
HDT	94°C	92°C
Heat Sagging (90°C)	4mm	5mm
Heat Sagging (95°C)	9mm	10mm

Low Gloss ABS, PC/ABS, PC/ASA

SL-0100 (ABS, Extrusion)
LH-0300 (ABS, Injection)
WP-1098 (PC/ABS)
LX-1098F (PC/ABS, Luminous)
WR-7250H (PC/ASA)

BENEFITS

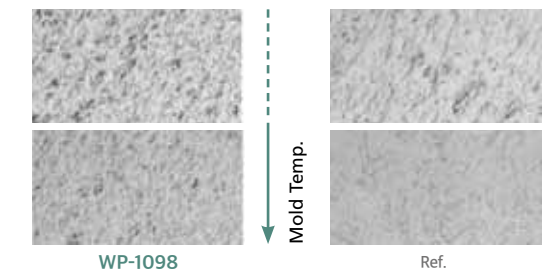
- Low gloss
- High weatherability
- High impact strength

APPLICATIONS

- Sheet
- Gloss modifier
- Door panel
- Air vent bezel
- Over head console

CHARACTERISTICS

Gloss Change by Mold Temp.			
Mold Temp	30°C	60°C	90°C
WP-1098	22	33	63
Reference	28	40	76



Product Line-up

ABS	PC Alloys
SL-0100 Low Gloss ABS (Gloss 10↓) Extrusion	WP-1098 PC/ABS (Gloss 30↓) High impact, Injection
LH-0300 Heat Resistant ABS (Gloss 30↓) Injection	WR-7250H PC/ASA (Gloss 30↓) Injection

High Flow PC/ABS

WP-1069
WP-1089

BENEFITS

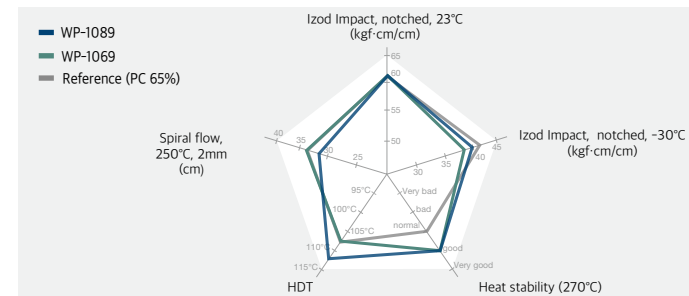
- High flowability
- Heat stability

APPLICATIONS

- Center fascia
- Air vent

CHARACTERISTICS

Property Balance



Heat Stability

(Gloss Change, 270°C * 10min.)

	WP-1069		Reference	
	Before	After	Before	After
Gloss (60°)	99.1	95.9	101.8	87.6

WP-1069	Before	After	Δ Gloss = 3.2
Reference	Before	After	Δ Gloss = 4.2

Reference issues: Gas silver, Flow mark and discoloration

Diffusion PC

TP-1020

BENEFITS

- High flowability
- High impact strength
- Painting stability
- Diffusion properties: High luminance, uniformity

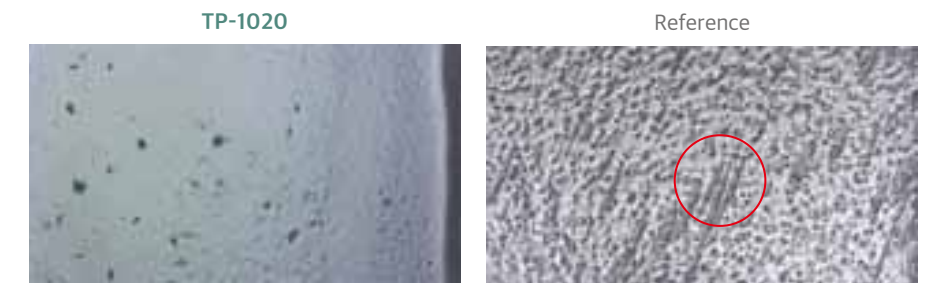
APPLICATIONS

- Center fascia: Overlay housing
- Button (LED lighting)
- Window shield lens
- 2-shot molding

CHARACTERISTICS

Excellent Quality of Appearance: Puddle issue addressed

Improved yield ratio of injection molding and painting, based on high flowability and thermal stability



High Heat/Chemical Resistant PC/ABS

HP-1000XC
WP-1059J

BENEFITS

- Impact strength
- Painting stability
- Chemical resistance: Freshener

APPLICATIONS

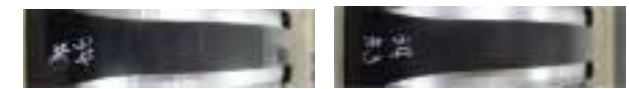
- Center fascia: Overlay panel
- Cover console upper frame
- Air vent housing & deco (painting)
- Arm rest upper/lower cover

CHARACTERISTICS

The Combination of Functional Additives: Enhanced chemical resistance

Air freshener chemical resistance test (¼ Ellipse Jig method)

No crack was found on the surface after 72 hours passed since the application of air fresheners.



Satisfactory results of air freshener test on part's chemical resistance

	Freshener A	Freshener B
Sample 1	Satisfactory	Satisfactory
Sample 2	Satisfactory	Satisfactory

Excellent Quality of Appearance: Painting quality improved

	TP-1020	Reference
HCO-product surface comparison	After injection molding	After injection molding
	After painting	After painting
	Fewer holes on the painted surface	Many holes on the painted surface
Result	<p>High flowability and thermal stability → High-quality appearance and a reduction in internal stress during injection molding process</p> <p>Improved painting quality as a result of excellent appearance → Uniform surface for painting</p> <p>→ Optical property (Texted LED lighting) becomes available through laser cutting (Luminance, uniformity of luminance)</p>	

※ HCO: Heat Control Overlay

Light Blocking ABS, PC/ABS

ABS

SR-0320 K
SR-0325LT

PC/ABS

WP-1069

BENEFITS

- Light blocking characteristic
- Balanced properties

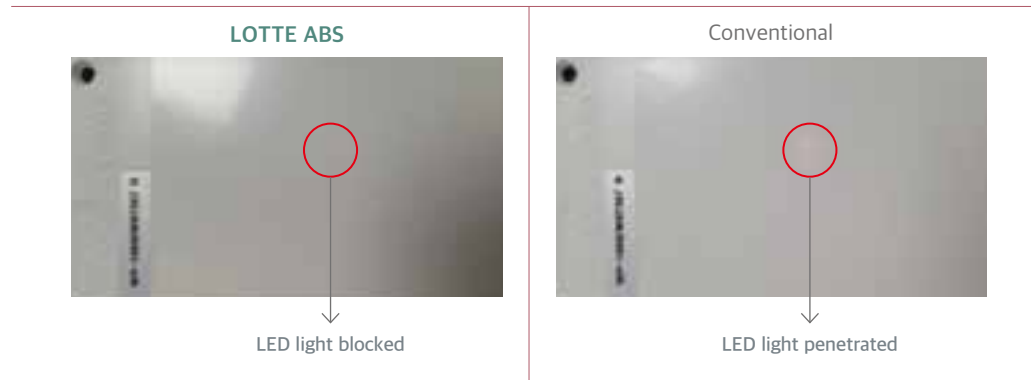
APPLICATIONS

- Instrument cluster

CHARACTERISTICS

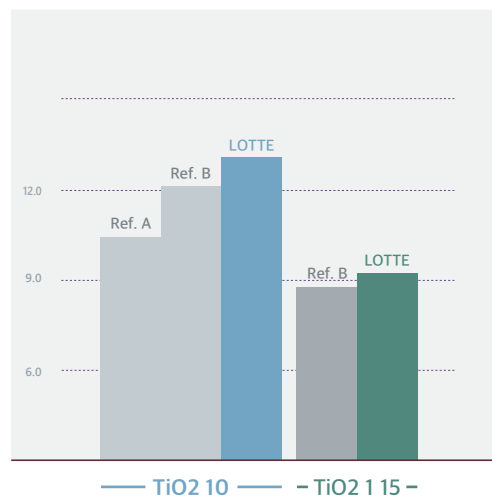
Optical Property			
	Light reflection Y	Light transmission Y	Transmission Max.
Required level	94 ± 2 %	< 0.5%	< 2.5
ABS TiO2 10%	93.3	0.48	1.61
ABS TiO2 15%	93.8	0.21	0.86

Comparison of LED light penetration



Property Balance

Impact strength comparison



Flexural strength comparison



EXTERIOR



Weatherability



Safety

ABS

- Metal Plating
 - MP-0160 R
 - MP-0670
- Blow Molding
 - BM-0320 J
 - BM-0325
- Painting
 - PT-0180H
 - PT-0180J
- Heat Resistant
 - SR-0320 K
 - SR-0325, 0325LT

PC/ABS

- High Impact
 - HP-1000XA
 - HP-1000X
- High Flow
 - WP-1059
 - WP-1069
 - WP-1089
- Metal Plating
 - WP-1041(G)
 - WP-1051
 - WP-1061

PC/PET

- General
 - AE-2030
- Reinforced
 - AE-2130
 - AE-2150
 - AE-2230

ASA

- High Impact/Flow
 - WR-9120J
 - WR-9300HF
 - WR-9300I
- High Weatherability
 - WX-9300UV
 - WX-9310UV
 - WX-9330UV

PC/ASA

- WR-7000
- WX-7010
- WX-7030

PC/PBT

- High Impact/Flow
 - AE-3060
- Impact at Low Temp./Chemical Resistant
 - AE-3063I



Metal Plating Materials with High Adhesion Strength

ABS

MP-0160 R
MP-0670

PC/ABS

WP-1041G
WP-1051
WP-1061

BENEFITS

- Excellent quality of appearance
- Metal adhesion
- Quality stability

APPLICATIONS

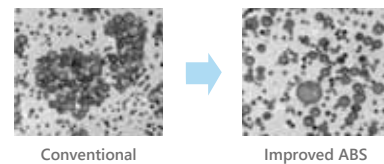
- Radiator grille
- Rear garnish
- Emblem
- Outside mirror
- Door handle

CHARACTERISTICS

Metal Plating ABS (MP-0160 R, MP-0670)

Good surface quality without pitting

Well dispersed rubber and quality consistency



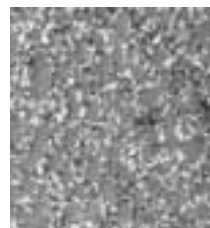
Metal Plating PC/ABS (WP-1041G)

	WP-1041G	Reference A	Reference B
Schematic Diagram			
	Regularly etched · Matrix SAN composition optimize · g-ABS dispersion and content control	Incompletely etched · Rubber dispersion is not regular in SAN phase	Under etched · Matrix SAN composition is not optimized
Properties	Pit 1.7 Adhesion 415	Pit 6.2 Adhesion 387	Pit 4.5 Adhesion 250

Metal Plating PC/ABS – Comparison of PC Content

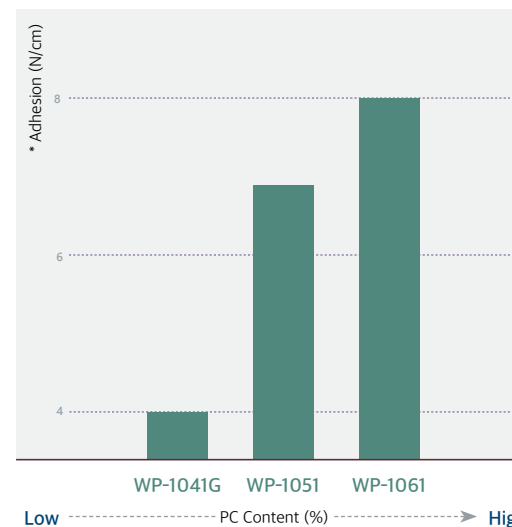
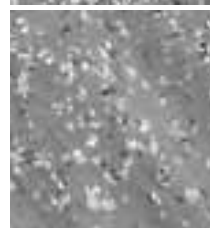
PC/ABS with Low PC Content

- Reduction of etching time
- Low metal adhesion
- Low heat stability



PC/ABS with High PC Content

- Increase of etching time
- High metal adhesion
- High heat stability
- High mechanical properties



High Weatherable ASA

WX Series

WR Series

BENEFITS

- High weatherability
- High impact strength
- Heat resistance

APPLICATIONS

- Outside mirror
- Radiator grille
- Pillar
- Spoiler
- Garnish

CHARACTERISTICS

Excellent Weatherability

Grade	Weatherability (3000h)		Impact Properties	
	Delta E	Gloss Retention	IZOD	FDI
General ASA	5~10	< 5%	< 15	25~27
starex® WX Series	≤ 3	25~40%	19~21	28~29
Performance Improvement	+ 40 %	+ 400 %	+ 25 %	+ 15 %

Grade Selection - Heat Resistance

Heat Resistance	Mid Heat Resistance	High Heat Resistance
WX-9300UV	WX-9310UV	WX-9330UV

Properties

Grade	WX-9300UV	WX-9310UV	WX-9330UV	
Impact Resistance	FDI (N/J)	3,430 / 28	3,400 / 28	3,590 / 29
	Dupont Drop (Destruction Rate)	12%	10%	10%
Weatherability (3000h)	dE	2.8	2.5	2.6
	Gloss Retention	44%	40%	31%
MI	12	6.0	4.5	
VST	98	101	103	

High Weatherable/Impact PC/ASA

WR-7000
WX-7010
WX-7030

BENEFITS

- High weatherability
- High impact strength
- Heat stability
- High flowability

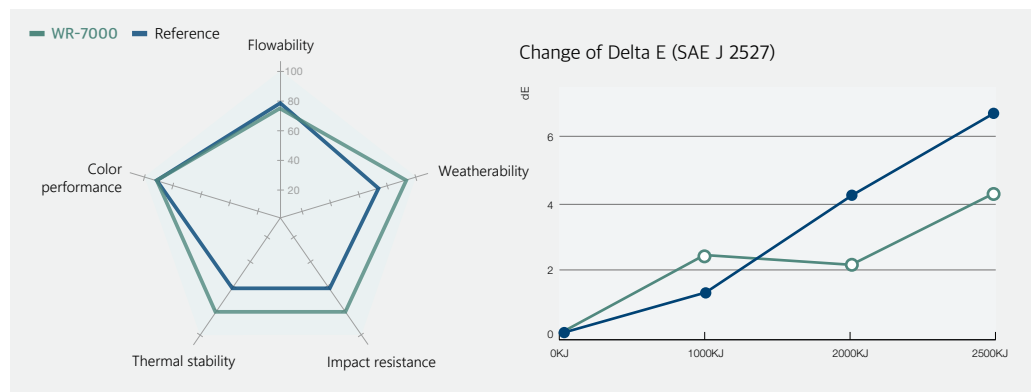
APPLICATIONS

- Radiator grille
- Outside mirror
- Roof rack
- Rear spoiler

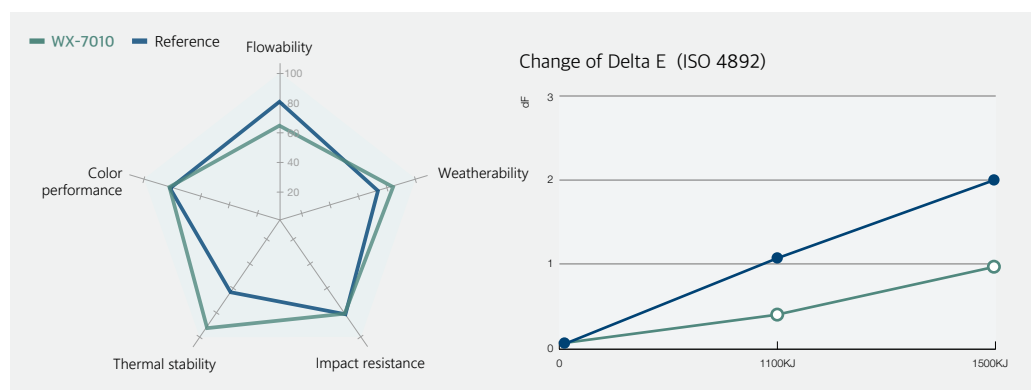
CHARACTERISTICS

Property Balance

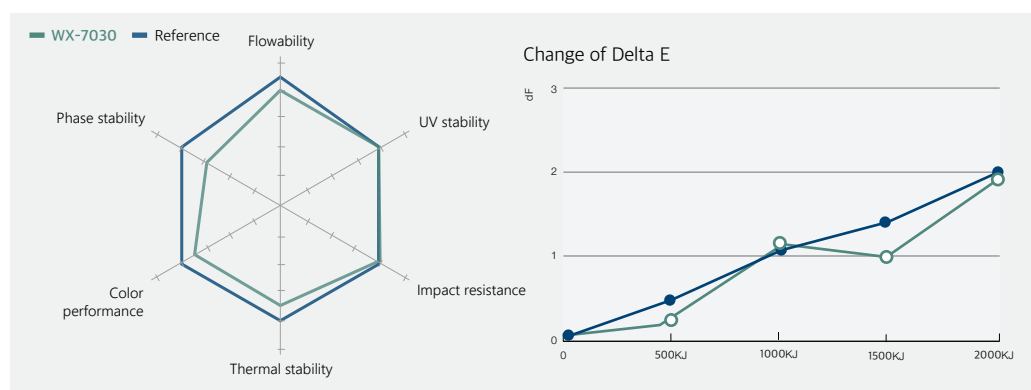
WR-7000 Property



WR-7010 Property



WX-7030 Property



High Modulus PC/PET

AE-2030
AE-2130
AE-2230
AE-2150

BENEFITS

- High impact strength
- Low CLTE
- Dimensional stability

APPLICATIONS

- Radiator grille
- Door handle
- Rear spoiler
- Garnish

CHARACTERISTICS

PC/PET: AE-2030

Dimension Stability (Low CLTE & Low Warpage)

CLTE	Test Method	Unit	Condition
	ASTM E831	1/°C	-25 °C ~50 °C (Flow, xFlow)
AE-2030		7.7E-05 8.2E-05	
Reference		8.0E-05 8.6E-05	

Surface Quality

	AE-2030	Reference
Gloss (60°)	98	80

AE-2030 has better gloss and shows good paintability

PC/PET/MF: AE-2130, AE-2230, AE-2150

Improved Surface Quality	Schematic Diagram		Injection Molding Specimen	
	LOTTE PC/PET/MF	Conventional	LOTTE PC/PET/MF	Conventional
	MF dispersion optimize	MF aggregation	Good surface finish	Flash, Flow mark

AE-2130: MF 5%, AE-2230: MF 20%

High Impact/Flow PC/PBT

AE-3060
AE-3063I

BENEFITS

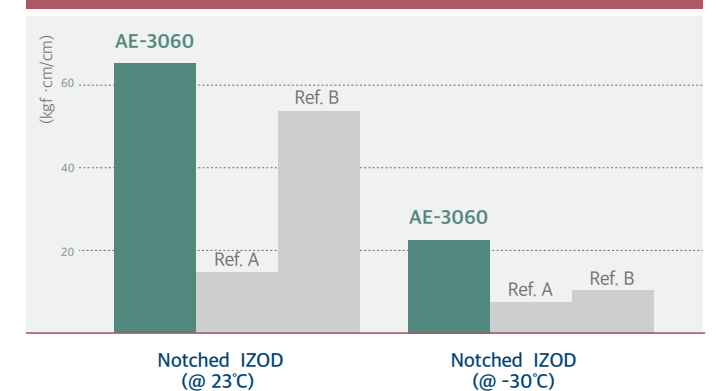
- Dimensional stability (CLTE)
- High impact strength
- High flowability
- Chemical resistance
- High stiffness

APPLICATIONS

- Door handle
- Roof rack
- Pillar
- Bumper beam
- Energy absorber

CHARACTERISTICS

High Impact/Flow



Impact at Low Temp./Chemical Resistance

AE-3063I	Reference	Test Condition
		<ul style="list-style-type: none"> • Thinner 2min. • Drying at 70°C 30min. • Aging at RT 3hr. • Dupont drop (1m, 4kg)

Crack

LIGHTING



Functionality & Productivity



Optical Solution

ABS

- Heat Resistant
 - SR-0300
 - SR-0320 K
 - SR-0325LT
 - SR-0325 (High Flow)
 - SR-0330M

PC

- General (Light Diffusion)
 - LT-1100
 - LT-1220

PC/ABS

- High Gloss/Low Gas
 - HP-1000XG
- High Impact (Low Temp.)
 - HP-1000XA
- High Flow
 - WP-1069
 - WP-1089

ASA

- General
 - WR-9330I
 - WR-9370

PBT

- General
 - ASF-9810FL
- High Flow
 - ASF-9810FM
- Super High Flow
 - ASF-9860

High Gloss/Low Gas PBT

ASF Series

- ASF-9810FL
- ASF-9810FM (High Flow)
- ASF-9860 (Super High Flow)

BENEFITS

- Low gas
- Heat stability
- High gloss surface (Direct metallization)

APPLICATIONS

- Head lamp bezel
- Fog lamp bezel
- Rear lamp reflector

CHARACTERISTICS



Low Gas

Fogging Test (270°C, 3hr)

ASF-9810FM	Reference
	
80ppm	180ppm

Heat Resistance (270°C/10 min.)





Pin-point Test

ASF-9810FM	Reference
	
	Gas & Flow Mark

Improved Pin Hole Issue



Carbon Black Dispersibility

	Conventional	LOTTE
Optical Microscope (x50)		
Shading Convert		
Count	21.0	10.3
Pinhole Total Area	1,231	484
Size (Diameter)	58.6	47.1

High Weatherable/Impact PC

LT Series
 LT-1100
 LT-1220 (High Flow)

BENEFITS

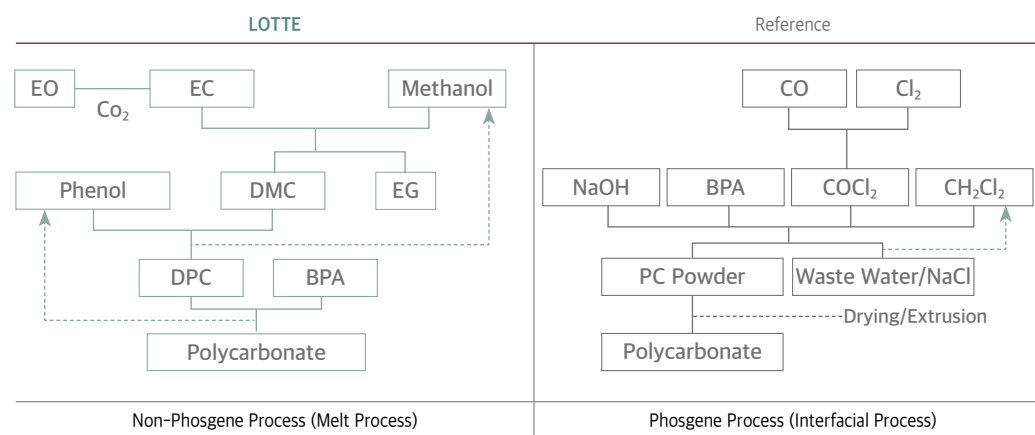
- High weatherability
- High impact strength
- Low gas

APPLICATIONS

- Head/Fog lamp lens
- Head/Fog lamp bezel
- Rear lamp reflector

CHARACTERISTICS

Eco-friendly Process



High Weatherability

	Hard Coating PC Covering	PMMA Clear Covering	PMMA Red Covering
Combination			
ΔE (SAE J 1960, 2500KJ)	0.4	1.5	1.3

AMECA Listing



High Gloss/Low Gas PC/ABS

HP-1000XG

BENEFITS

- High gloss
- Low gas
- High flowability
- High heat resistance

APPLICATIONS

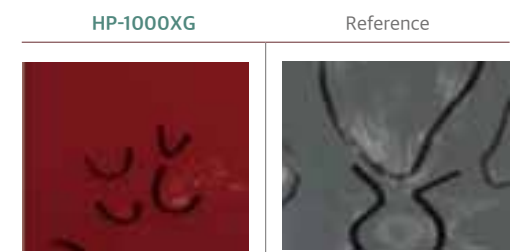
- Rear lamp housing
- Center high mounted stop lamp (CHMSL)
- Rear lamp reflector

CHARACTERISTICS

Surface after Metallization



Heat Resistance Test (280°C/10min.)



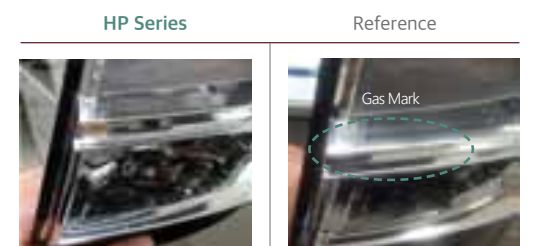
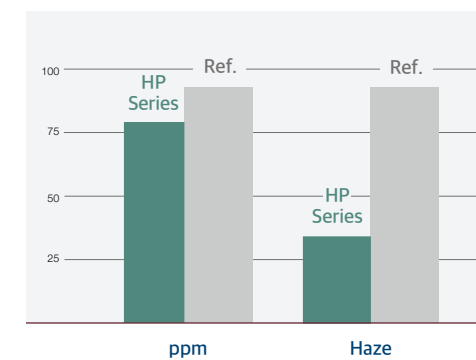
Test condition: Cylinder temperature 280°C, 10min-residence shot

High Flowability

	HP Series	Reference
Spiral Test		
Melt Flow (250°C, 2.16kgf)	37g/10min	34g/10min

Low Out Gassing

Fogging Test (250°C, 1Hr)



STRUCTURE



Light-weight
& Metal
Replacement



Part-integrated
Design

PA/PPE/CNT

- Conductive/
High Heat Resistant
- CA-7000C
- CA-7009

PBT/ASA/GF

- Dimensional Stability
- AR-5300H (GF 30%)

PBT/PET/GF

- High Flow/Surface Quality
- AR-6200

PA/PPE/CNT

CA-7000C

CA-7009

BENEFITS

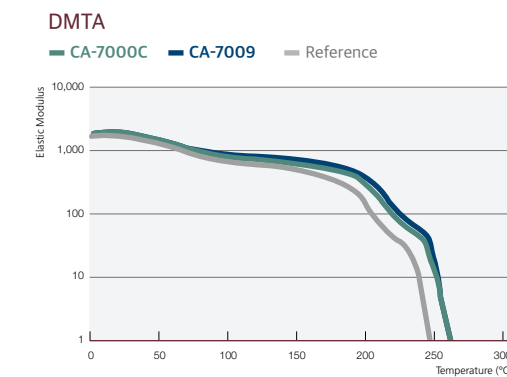
- High heat resistance
- Light-weight
- Design freedom
- Conductivity
- Dimensional stability
- Low hygroscopicity

APPLICATIONS

- Fender
- Fuel filler door
- Body panel

CHARACTERISTICS

Thermal Stability



Storage Modulus

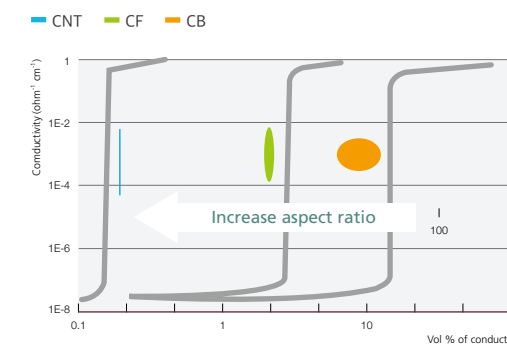
Material	Storage Modulus	
	0°C	200°C
CA-7000C	1,900	315
CA-7009	2,000	370
Reference	1,800	130

DMTA measurement condition

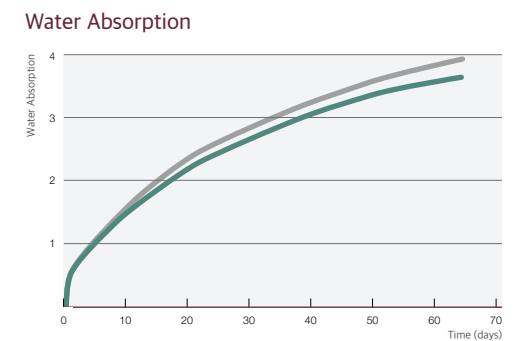
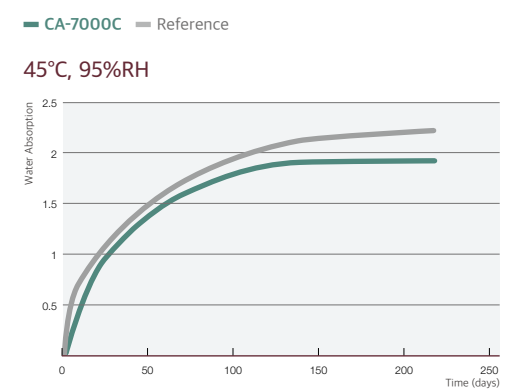
· Tem. Range: 0°C ~ 275°C · Scanning Rate: 5°C/min · Frequency: 1Hz

Better Surface Quality

Filler Loading (%)		
CNT (Carbon Nano Tube)	CF (Carbon Fiber)	CB (Carbon Black)
<1%	>10%	>15%



Lower Moisture Absorption



PBT/ASA/GF 30%

AR-5300H

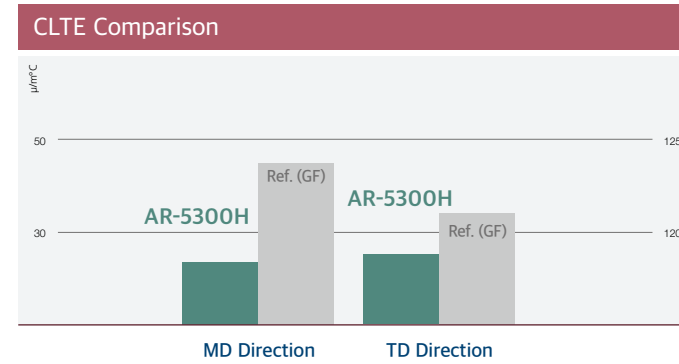
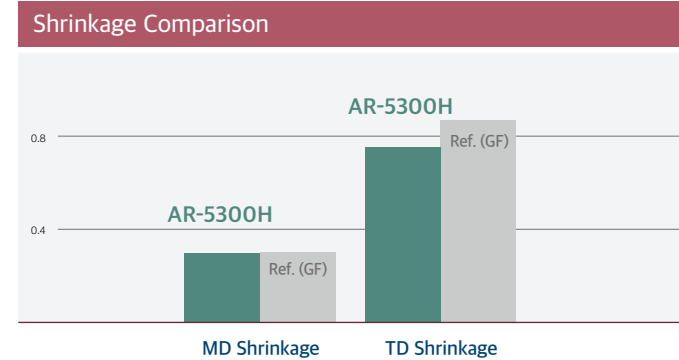
BENEFITS

- Dimensional stability
- Weight reduction
- Part integration
- High flowability

APPLICATIONS

- Panorama sunroof frame

CHARACTERISTICS



PBT/PET/GF 20%

AR-6200

BENEFITS

- High flowability
- Low gravity
- Paintability
- Thermal stability

APPLICATIONS

- Roof side molding

CHARACTERISTICS

	Unit	AR-6200	Reference
MI 260 °C	g/10min	54.0	46.0
Spiral Flow (2t)	cm	36.0	29.5



Global Awards



SPE Automotive Innovation Awards Winner

INFINO® Luminous PC/ABS LX-1098F

World's first premium non-painting material solution, LX-1098F designed to fit the 2015 MY Ford Mondeo

Metallic-look Exterior Design: Less Flow-mark & Weld-line

Paint-free Luminous Solution



Performance for Auto Interior

UV/Heat Stability
Scratch Resistance

- ① Center Stack Finish Panel
- ② Console Finish Panel
- ③ Shift Surround Bezel

Korea NET Certification

[2015] Double Injection Molding Solution
INFINO® PC + starex® Luminous

- Excellent pattern design with 3D 2-shot layers
 - Layer 1: Transparent PC
 - Layer 2: Non-painting Luminous
- Cost Reduction: Surface finishing process simplification



[2016] Heat Aging PPA Solution
INFINO® High Heat Resistant PPA Technology

- Lightweight metal plating design
- Long-term heat stability & Shield effect (oxidation blocking)



* NET (New Excellent Technology) is South Korea's state-run certification system that recognizes and certifies the country's new technological development in the related fields or dramatic improvement compared with the existing technologies.

Product Selection Guide

Segment	Key Application	Products	Properties	ASTM								ISO								
				Physical Properties			Mechanical Properties					Physical Properties		Mechanical Properties					Thermal Properties	
				Specific Gravity	Melt Flow Index	Mold Shrinkage	Tensile Strength	Flexural Strength	Flexural Modulus	Izod Impact (Notched)	Hardness	Specific Gravity	Melt Flow Index	Tensile Strength	Flexural Strength	Flexural Modulus	Charpy Impact	Hardness	VST	
				Test Method	ASTM D-792	ASTM D-1238	ASTM D-955	ASTM D-638	ASTM D-790	ASTM D-790	ASTM D-256	ASTM D-785	ISO 1183	ISO 1133	ISO 527-1A	ISO 178	ISO 178	ISO 179 1eA	ISO 2039-2	ISO R 306
				Test Condition	Natural Color	220°C/10kg 250°C/10kg* 250°C/5kg** 250°C/2.16kg***	-	50mm/min 5mm/min*	2.8mm/min 5mm/min* 10mm/min**	2.8mm/min 5mm/min* 10mm/min**	1/4" 1/8**	-	Natural Color	220°C/10kg 250°C/10kg* 250°C/5kg** 250°C/2.16kg***	50mm/min 5mm/min*	2mm/min 2.8mm/min*	2mm/min 2.8mm/min*	-	-	B/50 A/50*
Unit	-	g/10min	%	kgf/cm ²	kgf/cm ²	kgf/cm ²	kgf/cm ²	R-Scale	-	g/10min	MPa	MPa	MPa	KJ/m ²	R-Scale	°C				
Interior	I/P Part, Center Fascia	PC/ABS (High Impact)	HP-1000X	1.13	31*	0.4-0.7	580	840**	22,500**	60*	113	1.13	31*	55	81	2,150	53	113	125	
			HP-1000XA	1.13	27*	0.4-0.7	550	750	20,500	45	113	1.13	27*	50	80	2,100	49	113	123	
	Center Console	PC/ABS (High Flow)	WP-1069	1.13	47*	0.4-0.7	580	800	22,500	58*	113	1.13	47*	52	82	2,300	48	113	123	
			WP-1089	1.13	47*	0.4-0.7	540	770	21,500	60*	113	1.13	47*	52	80	2,200	51	113	126	
	Center Console	PC/ABS (Low Gloss)	WP-1098	1.13	30*	0.4-0.7	500	720	20,500	62*	111	1.13	30*	50	70	1,950	50	111	122	
	Interior Part	PC/ABS (Paint-free)	LX-1098F	1.13	42*	0.4-0.7	550	790	22,000	40*	114	1.13	42*	55	90	2,500	41	114	120	
	Globe Box, Metal Back Molding	PC/ABS/GF	WP-1100	1.21	41*	0.2-0.5	920*	1,200	43,000	8		1.21	41*	83*	135	4,300	11.5		131	
			WP-1200	1.27	36*	0.15-0.45	1,200*	1,500	62,000	8		1.27	36*	109*	180	7,400	11		130	
	Interior Part	Low Gloss ABS	SL-0100	1.03	7.5	0.4-0.7	330	450	16,000	7*	97	1.03	7.5	35	57	1,800	11	93	97	
	Interior Part	Low Gloss ABS (High Heat)	LH-0300	1.04	10	0.4-0.7	354*	465	17,593	15*	100	1.04	10	36	58	2,060	16	100	100	
	Interior Part	High Heat ABS (General Purpose)	SR-0300	1.05	13	0.4-0.7	450*	620	23,000	23	110	1.05	13	48	76	2,500	25	110	102	
			SR-0310	1.05	12	0.4-0.7	410*	630	21,000	18	110	1.05	12	40*	45	2,500	22	110	104	
			SR-0310FM	1.06	20	0.4-0.7	400*	640	21,000	15	109	1.06	20	50	78	2,600	20	109	103	
			SR-0320 K	1.06	9	0.4-0.7	420*	650	22,000	17	110	1.06	9	48	76	2,450	15	110	106	
			SR-0325LT	1.06	4	0.4-0.7	440*	620	21,000	12	113	1.06	4	50	85	2,500	15	113	113	
			SR-0330M	1.07	3	0.4-0.7	420*	640	22,510	12	113	1.07	3	48	78	2,350	15	113	118	
			SR-0340M	1.07	2.5	0.4-0.7	430*	640	22,500	14	110	1.07	2.5	47	78	2,500	13	110	120	
	Interior Part	PC/ASA (Low Gloss)	WR-7250HS	1.16	34*	0.4-0.6	600	850**	22,500**	35	118	1.16	34*	57	90	2,450	55	118	129	
Exterior	Radiator Grille, Side Mirror Housing	ASA	WR-9300HF	1.07	12	0.4-0.7	450*	680	22,000	15*	106	1.07	12	44*	67	2,100	13	106	100	
			WR-9330I	1.07	5	0.4-0.7	480*	710	23,000	14*	107	1.07	5	52	80	2,400	10	108	104	
	A,B,C Pillar Trim Side Mirror Housing	ASA	WR-9120 J	1.07	26	0.4-0.7	450*	650	21,000	21*	105	1.07	26	43	72	2,260	14	105	98	
			WX-9300UV	1.08	10	0.4-0.7	440*	630	20,000	16*	104	1.08	10	47	70	2,250	12	104	98	
	Radiator Grille	Metal Plating ABS	WX-9310UV	1.08	6	0.4-0.7	440*	680	22,000	18*	105	1.08	6	49	70	2,400	14	106	101	
			WX-9330UV	1.09	4	0.4-0.7	450*	640	21,000	22*	103	1.09	4	45	73	2,300	13	103	103	
	Radiator Grille	Metal Plating ABS	MP-0160 R	1.04	17	0.3-0.6	480*	690	23,000	28	109	1.04	17	49	68	2,300	27	109	100	
	Radiator Grille	ABS (Blow Molding)	MP-0670	1.04	2.3(200°C, 5kg)	0.3-0.6	450*	660	21,500	27	108	1.04	2.3(200°C, 5kg)	51	72	2,350	25	108	100	
	Rear Spoiler	ABS (Blow Molding)	BM-0320J	1.04	6	0.3-0.6	430	585	18,500	26	101	1.04	6	42	63	2,150	30	101	104	
	Trunk Garnish	Painting ABS	PT-0180 H	1.04	2.3(200°C/5kg)	0.3-0.6	380*	600	20,000	33	104	1.04	2.3(200°C/5kg)	42	66	2,100	22	105	97	
			PT-0180J	1.04	28	0.3-0.6	449*	674	22,870	25	109	1.04	28	45	73	2,587	27	109	99	
	Metal Plating	PC/ABS	WP-1041G	1.09	31*	0.4-0.7	500	670	19,500	55*	105	1.09	31*	47	70	2,000	47	107	113	
	Wheel Cover	PC/ABS	WP-1059	1.12	45*	0.4-0.7	540	750	21,000	48*	112	1.12	45*	54*	75	2,250	45	112	114	
	Door Handle, Door Panel	PC/PBT	AE-3060	1.2	8***	0.4-0.6	600	800	21,000	70*	114	1.2	8***	60	80	2,100	65	114	124	
	Radiator Grille	PC/PET	AE-2030	1.2	32*	0.5-0.8	570	780	21,000	72*	113	1.2	32*	54	80	2,200	65	115	131	
	Body Panel	PC/PET/MF	AE-2130	1.23	21(260°C/5kg)	0.4-0.7	580	830	25,000	56*	111	1.23	21(260°C/5kg)	56	82	2,400	33	111	132	
	Rear Spoiler	PC/PET/MF	AE-2150	1.33	34(260°C/5kg)	0.3-0.6	670*	880	40,000	6*	110	1.33	34(260°C/5kg)	63*	100	4,000	6	110	140	
	Rear Spoiler	PC/PET/MF	AE-2230	1.35	26(260°C/5kg)	0.3-0.5	590*	780	40,000	7*	110	1.35	26(260°C/5kg)	55*	90	3,900	7	110	135	
Radiator Grille, Side Mirror Housing, Roof Rack	PC/ASA	WX-7010	1.16	30*	0.4-0.7	550	750	21,500	45	111	1.16	30*	56	80	2,250	60	110	120		
		WX-7030	1.16	38*	0.4-0.7	600	850	22,500	45	110	1.16	38*	60	90	2,400	60	110	139*		
Wheel Cover	PA/PPE	HC-8040	1.1	22(280°C, 5kg)	0.9-1.2	610	860	22,000	20*	114	1.1	22(280°C, 5kg)	60	94	2,100	20	114			
Fender & Fuel Filler Door	PA/PPE/CNT (High Heat)	CA-7009	1.09	15(280°C, 5kg)	1.0-2.0	600	800	21,500	20*	113	1.09	15(280°C, 5kg)	57	80	2,000		113			
Roof Side Molding	PC/ASA	WR-7000P	1.14	34*	0.4-0.7	590	820	23,000	46*	111	1.14	34*	57	87	2,200	43	111	114		
Panorama Sunroof Frame	PBT/ASA/GF	AR-5300H	1.45	30**	0.1-0.4	1,300*	1,900	90,000	9	117	1.45	30**	110	170	7,800	8	117	205		
Lighting	Head Lamp Bezel	Metallization PBT	ASF-9810F	1.31	55***	1.5-1.8	600	850	25,000	4.2	116	1.31	55***	58	80	2,320	3.7	116	180	
			ASF-9810FM	1.31	60***	1.5-1.8	550*	850*	26,500*	3.5	116	1.31	60***	58	80	2,320	3.5	116	185	
			ASF-9810FL	1.31	40***	1.5-1.8	600	850	25,500	4	116	1.31	40***	58	80	2,300	5	116	180	
	Head Lamp Bezel	PC	LT-1220	1.2	22(300°C, 1.2kg)	0.5-0.7	640	920	23,000	75*	120	1.2	22(300°C, 1.2kg)	64	91	2,300	60	120	145	
			LT-1100	1.2	11.5(300°C, 1.2kg)	0.5-0.7	640	920	23,000	87*	120	1.2	11.5(300°C, 1.2kg)	64	91	2,300	80	120	145	
	Rear Lamp Housing	High Heat ABS (General Purpose)	SR-0300	1.05	13	0.4-0.7	450*	620	23,000	23	110	1.05	13	48	76	2,500	25	110	102	
			SR-0320 K	1.06	9	0.4-0.7	420*	650	22,000	17	110	1.06	9	48	76	2,450	15	110	106	
			SR-0325LT	1.06	4	0.4-0.7	440*	620	21,000	12	113	1.06	4	50	85	2,500	15	113	113	
			SR-0330M	1.07	3	0.4-0.7	420*	640	22,510	12	113	1.07	3	48	78	2,350	15	113	118	
	Rear Lamp Housing	PC/ABS (High Impact)	WP-1069	1.13	47*	0.4-0.7	580	800	22,500	58*	113	1.13	47*	52	82	2,300	48	113	123	
			WP-1089	1.13	47*	0.4-0.7	540	770	21,500	60*	113	1.13	47*	52	80	2,200	51	113	126	
			HP-1000XG	1.15	37*	0.35-0.65	650	900	24,000	55*	120	1.15	37*	60	95	2,500	50	120	130	
Rear Lamp Housing	High Heat ASA	HP-1000XA	1.13	27*	0.4-0.7	550	750	20,500	45	113	1.13	27*	50	80	2,100	49	113	123		
		WR-9330I	1.07	5	0.4-0.7	480*	710	23,000	14*	107	1.07	5	52	80	2,400	10	108	104		
Rear Lamp Housing	High Heat ASA	WR-9370	1.07	3	0.4-0.7	480*	710	23,000	15*	106	1.07	3	49	70	2,160	13	106	109		

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Capacity

ABS 660K Tons

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Sales & Assets (2016)

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