SAMSUNG SDI

INFINO®

PC & PC Alloy, High Performance EP

CREATE INFINITE POSSIBILITIES

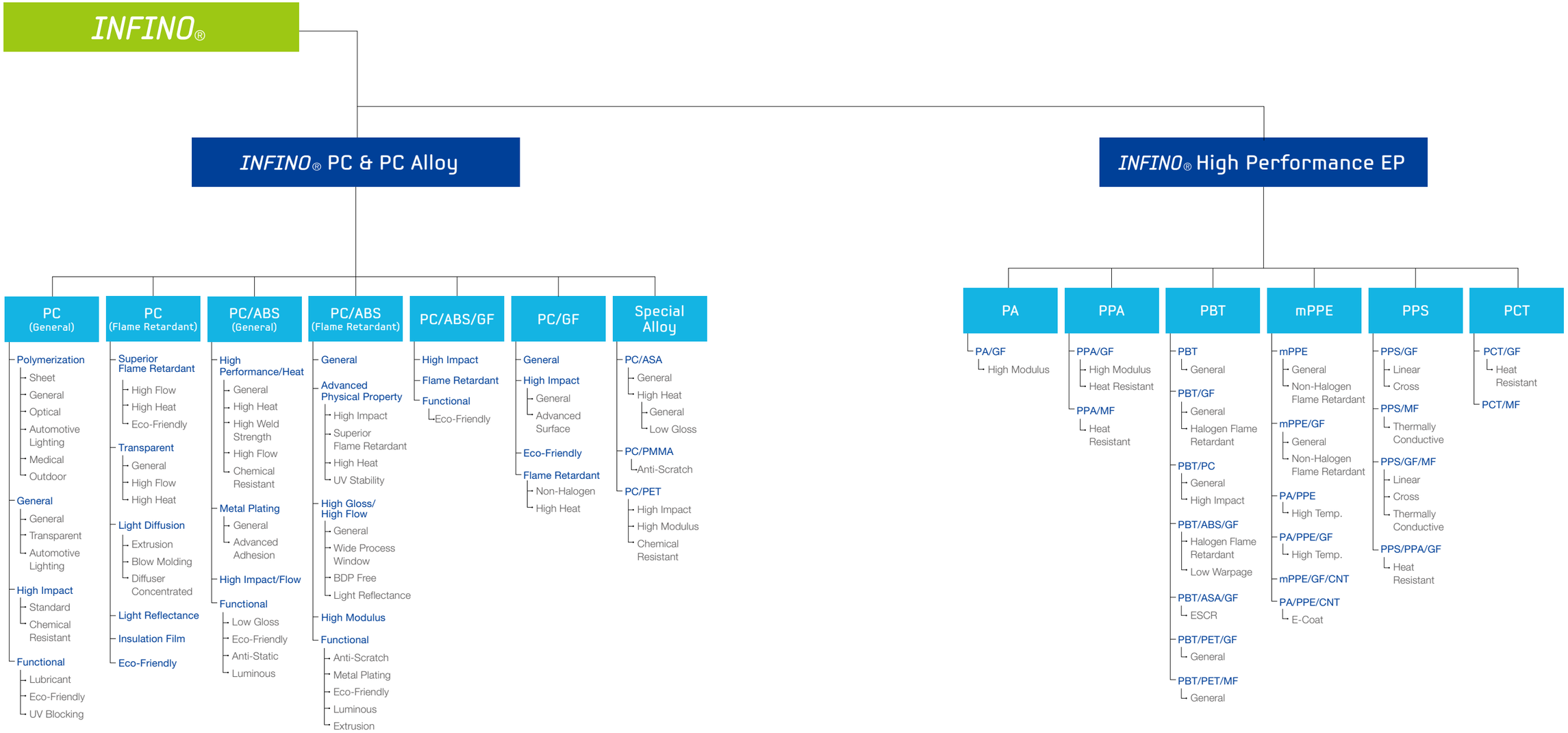
Contents

***INFINO*® Polycarbonate (PC)** is named for polycarbonate, a non-toxic transparent engineering plastic resin that comes with the high level of impact strength compared with commodity plastics by SAMSUNG SDI. *INFINO*® PC is equipped with good mechanical strength, cold and heat resistance, stable optical characteristics and balanced electrical property.

***INFINO*® PC Alloy** named for the product line of amorphous, thermoplastic polymer compounding based on polycarbonate (PC) and acrylonitrile butadiene styrene copolymer (ABS), PC and Polyethyleneterephthalate (PET) or PC and polybutyleneterephthalate (PBT) by SAMSUNG SDI. *INFINO*® PC alloy provides valuable benefits with combination of mechanical, thermal and physical properties. PC alloy is widely used in a broad range of industries, including automotive, electric and electronics, display, mobile devices, lighting, building & construction, optical lenses and other applications.

In addition, various ***INFINO*® High Performance EP** lineups of SAMSUNG SDI are made by combining traditional polymer with its progressive performance and technology. This material is used for not only conventional E&E application, but also new emerging applications such as LED reflector, SMT connector and automotive components which need high heat resistance, long-time reliability and superior impact strength.

Product Portfolio



INFINO® Transparent PC

INFINO® Transparent PC resin features its outstanding optical clarity. Thanks to its superior flowability and thermal stability, *INFINO*® PC resin stays completely transparent without discoloration at elevated temperatures. SAMSUNG SDI's unique manufacturing technology to remove the low molecular weight oligomers made it possible to minimize the mold deposits during injection process. This advantage makes *INFINO*® Transparent PC most suitable for a wide variety of applications from small to large sized goods with complex design.

KEY FEATURES

- Excellent optical characteristic: High transmittance, UV resistance
- High impact strength
- Lightweight solution
- Good processability: Low molding temperature and short cycle time

APPLICATIONS

- Lighting: Automotive, Lighting lens
- LGP: Mobile display
- Building & Construction: Roofing, Wall sheet extrusion
- Data storage: CDs, DVDs
- Optical lenses, Eyewear
- Furniture

PRODUCT LINE-UP

- **SHEET**
  - SC-1060P
  - SC-1060U
  - SC-1063U
  - SC-1081F
- **GENERAL**
  - SC-1080(U)R
  - SC-1100(U)R
  - SC-1100L (Lens)
  - SC-1102(U)R
  - SC-1220(U)R
  - SC-1222(U)R
  - SC-1280UR (Lighting)
  - SC-1380UR* (Lighting)
- **OPTICAL**
  - CD
    - SC-1620P
  - LGP
    - FX-8500L
    - FX-8800L*
    - FX-9200L*
- **AUTOMOTIVE LIGHTING**
  - LT-1100
  - LT-1220
- **MEDICAL**
  - EtO sterilizable
    - ML-1010R
    - ML-1020R
- **OUTDOOR**
  - VP-1100W* (f1)
  - VP-1200W* (f1)

*Under development

INFINO® High Impact PC & PC Alloy

INFINO® High Impact PC and PC Alloy, which come with not only good mechanical strength but also excellent chemical resistance, are widely used in small electrical and electronic devices such as mobile handsets and digital cameras.

KEY FEATURES

- Excellent impact strength after painting process
- Good processability
- High flowability
- Good appearance

APPLICATIONS

- Mobile devices
- Digital camera

PRODUCT LINE-UP

- **GENERAL PURPOSE**
  - GF 10%
    - SI-3109GL (H.G, Milled GF)
    - LS-3104G (High Flowability)
  - GF 15%
    - LB-3150G (BK)
    - LB-3150GW (WH)
  - GF 20%
    - HF-3200H (TV)
    - HF-3202H (OA)
  - GF 30%
    - HM-3301GL
    - DS-3303 (Roundness)
- **HIGH IMPACT**
  - General
    - Standard
      - CF-1050
      - CF-1070
    - Chemical Resistant
      - GM-1080
    - Transparent
      - CF-1051T
    - UV
      - CF-1051
  - Reinforced (GF)
    - Standard
      - CF-3104HF (10%)
      - CF-3200HF (20%)
      - CF-3300HF (30%)
    - Advanced Surface
      - GI-3103* (10%)
- **ECO-FRIENDLY**
  - General
    - GW-1010 (PCM 35%)
    - GW-1029 (PCM 50%)
    - GW-1030S (PCM 70%)
    - GW-1043 (PCM 80%)
  - Reinforced
    - GW-3130 (GF 10%, PCM 75%)

*Under development

INFINO®

Flame Retardant PC & PC Alloy

INFINO® Flame Retardant PC and PC Alloy have been developed so that they can provide the most suitable solutions to the safety and the environment regulations at the same time. High Impact Flame Retardant PC & PC/ABS are applicable to laptop computers and smart meters thanks to its well-balanced mechanical properties and processability.

KEY FEATURES

- High impact strength
- High modulus
- High flowability
- Non-halogen flame retardant
- Good colorability
- Excellent appearance

APPLICATION

- TV
- Battery
- Charger
- Note PC
- OA machine
- Smart meter

FLAME RETARDANT PC PRODUCT LINE-UP

NON-REINFORCED

- Transparent
  - General
    - TP-1002 (3.0T V0)
    - TP-1029 (0.8T V2)
  - High Flow
    - TN-1045S (2.0T V2)
    - TN-1100 (2.5T V0)
    - TN-1200 (2.0T V0)
  - High Heat Resistant
    - TH-1100 (VST 144˚C, 2.0T V0)
- High Heat Resistant
  - NH-1035 (1.5T V0, 2.0T 5VB)
- High Flow
  - UF-1013 (High Impact)
  - UF-1017B (High Releasing)
  - UF-1017S (0.8T V0)
- Eco-Friendly
  - GC-1019 (0.8T V0, PCM 30%)
  - GC-1022 (1.5T V0, PCM20)

REINFORCED

- General
  - GF 10%
    - HN-3102GH (1.5T V0)
  - GF 20%
    - NH-3204G (2.0T V0, High Flow)
    - NH-3208GL (0.75T V0)
  - GF 40%
    - NH-3402F (2.0T V1)
- High Heat Resistant
  - GF 10%
    - HN-3104 (1.5T V0/3.0T 5VA, F1)
  - GF 20%
    - HN-3204R (1.5T V0/2.5T 5VA, F1)

FLAME RETARDANT PC/ABS PRODUCT LINE-UP

NON-REINFORCED

NON-HALOGEN

- General
  - NH-1000T (2.0T V0, TPP)
- Advanced Physical Property
  - High Impact
    - NH-1015 (1.5T V0)
    - NH-1015V (1.5T V0, High Flow)
  - Superior Flame Retardant
    - NH-1027HF (1.2T V0/1.5T 5VB, Flow)
    - NE-1029 (1.2T V0/1.5T 5VB, Super Flow)
  - High Heat
    - NH-1037 (1.5T V0, HDT 100˚C)
- High Gloss/High Flow
  - General
    - NH-1017D (2.0T V0)
    - NE-1030 (1.5T V0)
- High Modulus
  - MF 15%
    - NH-1150HH (1.2T V0)
  - MF 25%
    - NH-1250* (1.2T V0)

FUNCTIONAL

- Metal Plating
  - QP-1010 (2.5T V1)
- Eco-Friendly (PCM 30%)
  - GC-1015 (1.5T V0)
  - GC-1017 (2.0T V0)
  - GC-1150 (1.5T V0, MF15%)
  - GC-1250* (1.2T V0, MF25%)
- Luminous
  - LX-1031 (1.5T V0, Sparkle)
  - LX-1080 (1.5T V0, Metallic-look)
  - LM-1090 (1.5T V1, XM Metal)
- Extrusion
  - EF-1032 (1.5T V0)
- Anti-Scratch
  - NF-3017 (1.0T V0)

REINFORCED

NON-HALOGEN

- GF 10%
  - HM-1100F (2.0T V0)
- GF 15%
  - LS-1159 (1.5T V1)
  - LS-1159S (1.5T V1, High Impact)
  - LS-1150G (0.8T V2, Light Ref.)

FUNCTIONAL

- Eco-Friendly
  - GC-1151* (GF 15%, PCM 20%)

*Under development

INFINO®

Diffusion PC

INFINO® Light Diffusion PC is a noble blend of SAMSUNG SDI's high quality PC and light diffuser. A wide range of light diffusion PC lineups are available for both injection molding and extrusion. A variety of colors based on the diffusion and transparency levels are also available.

KEY FEATURES

- Superior optical properties: High transparency and high degree of diffusion
- Eco-friendly non-halogen flame retardant system
- High productivity
- Outstanding durability

APPLICATIONS

- LED/Conventional lighting lens cover

PRODUCT LINE-UP

EXTRUSION

- FD-1010 (3.0T V0)
- FD-1112 (0.8T V2)
- FD-1510D (1.2T V0)

BLOW MOLDING

- FD-1122 (0.8T V2)

DIFFUSER CONCENTRATED

- FD-1106

INFINO®
PC Alloy for Automotive

SAMSUNG SDI has various *INFINO*® PC Alloy lineups for automotive such as PC/ABS, PC/ASA and PC/PET. Each PC Alloy is used for automotive exterior, interior, structure, lighting parts which require high heat resistance, high impact strength and metal plating features.

KEY FEATURES

PC/ABS
- High impact strength
- High heat resistance
- High flowability
- Chemical resistance

PC/ASA
- Excellent colorability
- High weatherability
- High heat resistance

PC/PET
- High impact strength
- High modulus

APPLICATIONS

PC/ABS
- Center fascia
- Air vent
- Rear lamp housing
- Tailgate garnish
- Wheel cover

PC/ASA
- Overhead console
- Outside mirror
- Roof rack
- Rear spoiler

PC/PET
- Radiator grille
- Door handle
- Rear spoiler
- Garnish

PC/ABS PRODUCT LINE-UP

HIGH PERFORMANCE/ HIGH HEAT RESISTANT
- General
  - HP-1000X (Izod 80)
  - HP-1000XA (Izod 60)
  - HP-1000XG (High Gloss)
- High Heat Resistant
  - LI-1000 (Coloring)
- High Weld Strength
  - HP-1011 (Low Gas)
- High Flow
  - WP-1069
  - WP-1089
- Chemical Resistant
  - WP-1053

METAL PLATING
- WP-1041 (Good Adhesion)
- WP-1041G (Etching Efficiency)

HIGH IMPACT
- High Flow
  - HI-1001B
  - HI-1001BN (Chemical Resistant)
- Reinforced (GF)
  - WP-1100 (10%)
  - WP-1200 (20%)

OTHER PC ALLOY PRODUCT LINE-UP

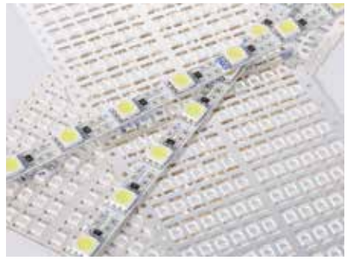
PC/ASA
- General
  - WR-7000
  - WR-7000P (Paintability)
- High Heat Resistant
  - General
    - WX-7010 (VST 120°C)
    - WR-7390 (VST 134°C)
  - Low Gloss
    - WR-7250H
    - WR-7250HS* (High Impact)

PC/PET
- High Impact
  - AE-2030
- High Modulus
  - AE-2130 (MF 5%)

*Under development

INFINO® High Performance EP
High Heat Resistant Materials

INFINO® High Heat Resistant Materials offer exceptional properties, such as high heat resistance, thermal stability and dimensional stability etc. and proprietary design solutions. These materials are optimized for LED reflectors, connectors, automotive parts etc.



KEY BENEFITS

LED
- Long term thermal stability
- Good reliability and high reflectivity

CONNECTOR
- Dimensional stability
- Low corrosion

APPLICATIONS

LED
- Reflector

CONNECTOR
- SMT

PRODUCT LINE-UP

LED REFLECTOR
- PPA Based
  - GF Reinforced
    - TK-4046H (PA6T)
    - TK-6036H (PA10T)
  - MF Reinforced
    - TK-6058W (PA10T)
    - TK-6058WR* (PA10T, High Reflectance)
- PCT Based
  - GF Reinforced
    - TK-2046H
    - TK-2046HM (High Modulus)
    - TK-2050H*
  - MF Reinforced
    - TK-2057H (High Power)

CONNECTOR
- PPA Based
  - GF Reinforced
    - HX-4300G (PA6T)
    - HX-4300GN (PA6T)
    - HX-4302G* (PA6T, Colorability)
    - HX-4450G* (PA6T)
    - HX-4452G* (PA6T, Colorability)

*Under development

INFINO® High Performance EP
Super Structural Materials

INFINO® Super structural material is a PPS or PA based material reinforced with a wide variety of fibers and/or special fillers. It comes with the special property of super high modulus and is developed to replace metal parts and to make parts thinner.

KEY BENEFITS

- Replace metals: Weight reduction and mechanical strength
- Reduce processing costs and increase system efficiency
- Part design consolidation

APPLICATIONS

- Mobile: Rear cover, Bracket
- Note PC: Bottom cover
- TV: Stand base
- Coffee machine bracket

PRODUCT LINE-UP

PPS Based

- XP-2130A (PPS/GF30%, Scratch Resistant)
- XP-2140C (PPS/GF40%, Cross)
- XP-2165M (PPS/GF/MF65%)
- XP-2165BM (PPS/GF/MF65%, Low Flash)
- XP-2165MC (PPS/GF/MF65%, Cross)

PA (PPA) Based

- MKD-1016 (PA/GF55%, 15GPa)
- XF-4150 (PPA/GF50%, 15GPa)
- MX-4500G (PPA/GF50%, NH-Flame Retardant)
- MX-4506* (PPA/GF50%, NH-Flame Retardant)

*Under development

INFINO® High Performance EP
Automotive Materials

SAMSUNG SDI has developed and expanded its *INFINO*® High Performance EP lineups for automotive in line with the increasing preference for metal replacement in the automotive industry.

PRODUCT LINE-UP

EXTERIOR

- Mirror Base Plate
  - PBT/PET/GF50%
    - AR-6508
- Door Handle
  - PBT/PC
    - AE-3060
    - AE-3060D*
- Wheel Cover
  - PA/PPE
    - HC-8040

STRUCTURE

- Panorama Sunroof Frame
  - PBT/ASA/GF
    - AR-5300H
- Fender & Fuel Filler Door
  - PA/PPE/CNT for E-Coating
    - CA-7000 (HDT 203˚C)
- Bumper Beam & Energy Absorber
  - PBT/PC
    - AE-3063I

LIGHTING

- Head Lamp Bezel
  - PBT/PET/MF
    - ASF-9810F (Direct Al deposition, Smooth surface)
  - PBT
    - ASF-9810FM (Low out-gas, high flow)
    - ASF-9810FL (Low out-gas, medium flow)

*Under development

PRODUCT SELECTION GUIDE

INFINO® Transparent PC

				Sheet				General				General							Optical		Automotive		Medical	
Properties	**Test Method**	**Condition**	**Unit**	SC-1060P	SC-1060U	SC-1063U	SC-1081F	SC-1080UR	SC-1100L	SC-1100R	SC-1100UR	SC-1102R	SC-1102UR	SC-1220R	SC-1220UR	SC-1222R	SC-1222UR	SC-1280UR	SC-1620P	FX-8500L	LT-1100	LT-1220	ML-1010R	ML-1020R
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	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Water Absorption	ASTM D570	23°C	%		0.2					0.2	0.2			0.2	0.2			0.2	0.2				0.2	
Melt Flow Index	ASTM D1238	300°C, 1.2kg	g/10min	6	6	6	8	8.5	11.5	11.5	11.5	10	11.5	22	22	20	20	28			11.5	22	11.5	22
		250°C, 1.2kg	g/10min																10.3	12.5			10.5	
	ISO 1133	300°C, 1.2kg	g/10min	6	6	6	8	8.5	11.5	11.5	11.5	10	11.5	22	22	20	20	28			11.5	22	11.5	22
		250°C, 1.2kg	g/10min																10.3	12.5			10.5	
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	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	660	660	660	660			640	640			640	640			640	640		640	640	640	
	ISO 527-1A	50mm/min	Mpa				66	65				64				64	64	64	64		62		65	62
		5mm/min	Mpa	65	65	65			64	64	64		64	64	64		64	64	64	64		64		
Tensile Strain at Break	ASTM D638	50mm/min	%	110	110	110	110	110	110	110	110	110	110	90	90	90	90	90	60	50	110	90	110	90
	ISO 527-1A	50mm/min	%				10	90				6				6.5					91	81	100	144
		5mm/min	%	5.5	5.5	5.5			6	6	6		6	6.5	6.5		6.5	6.5	6.5	6.5				
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	930	930	930	930	930	920	920	920	920	920	920	920	920	920	920	920	900	920	920	920	920
	ISO 178	2mm/min	Mpa	92	92	92	93	91	91	91	91		91	91	91	91	91	90	90	90	91	92	92	94
		2.8mm/min	Mpa									91												
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	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	2,300	2,300	2,300	2,300	2200	2100	2,300	2,100
		2.8mm/min	Mpa									2,300												
Izod Impact Strength	ASTM D256	(notched)1/4	kgf-cm/cm	15	15	15	15	15	15	15	15	15	15	10	10	10	10	10	-	-	15	12	15	15
		(notched)1/8	kgf-cm/cm	90	90	90	90	90	87	88	87	88	87	75	75	75	75	70	-	-	87	75	87	75
Charpy Impact Strength	ISO 179 1eA	(notched)	KJ/m²	85	85	85	85	85	80	80	80	80	80	60	60	60	60	50	-	-	78	77	80	63
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	90	90	90	90	85	85	85	85	85	85	65	65	65	65	60	-	-	69	59	85	49
Rockwell Hardness	ASTM D785	R-Scale		120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	122	123	120	121
	ISO 2039-2	R-Scale		120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	122	120	120	120
THERMAL PROPERTIES																								
Heat Deflection Temperature	ASTM D648	18.6kgf/cm², 6.4mm	°C	137	137	137	136	136	135	135	135	135	135	134	130	134	130	130	129	128	135	124	135	134
		4.6kgf/cm², 6.4mm	°C	142	142	142	138	141	140	140	140	140	140	140	137	140	137	137	136	136	140	137	140	140
	ISO 75-2	1.8MPa, 4.0mm	°C	127	127	127	125	126	125	125	125	125	125	123	122	123	122	122	121	119	124	122	125	123
		0.45MPa, 4.0mm	°C	137	137	137	127	136	135	135	135	135	135	135	134	135	134	134	134	133	137	135	136	137
VICAT Softening Temperature	ISO R306	B/50	°C	147	147	147	146	146	145	145	145	145	145	145	145	145	145	144	143	142	144	142	145	144
FLAME CHARACTERISTICS																								
Flammability	UL94	HB	mm	2.6-3.2	2.6-3.2	2.6-3.2																		
		V-2	mm	1.6-2.0	1.6-2.0	1.6-2.0		0.4-2.75	0.8-3.0	0.8-3.0	0.8-3.0	0.8-3.0	0.8-3.0	0.8-3.2	0.8-3.2	0.8-3.2	0.8-3.2	0.8-3.2		0.8-3.2	0.8-3.0			
		V-1	mm																					
		V-0	mm																					
		5VA	mm																					
		5VB	mm																					

PRODUCT SELECTION GUIDE

INFINO® High Impact PC & PC Alloy

				General Purpose						General Purpose			High Impact							
Properties	**Test Method**	**Condition**	**Unit**	SI-3109GL	LS-3104G	LB-3150G	LB-3150GW	HF-3200H		HF-3202H	HM-3301GL	DS-3303	CF-1050	CF-1070	GM-1080	CF-1051T	CF-1051	CF-3104HF	CF-3200HF	CF-3300HF
PHYSICAL PROPERTIES																				
Specific Gravity	ASTM D792	-	g/cm³	1.26	1.25	1.29	1.36	1.37		1.33	1.41	1.4	1.18	1.2	1.2	1.18	1.2	1.25	1.33	1.4
Water Absorption	ASTM D570	-	%			0.15				0.15						<0.1		0.3	0.3	
Melt Flow Index	ASTM D1238	300°C, 1.2kg	g/10min									11			17		12			
		250°C, 10kg	g/10min	20	30	25	26	11		11	7	17.5	20	13	30	22	22	23	23	22
	ISO 1133	300°C, 1.2kg	g/10min									11			17		12			
		250°C, 10kg	g/10min	19	30	25	26	11		11	5.4	17.5	20	13	30	22	22	23	23	22
Mold Shrinkage	ASTM D955	-	%	0.3-0.5	0.36-0.44	0.3-0.4	0.3-0.4			0.25-0.3	0.1-0.3	0.18	0.5-0.7		0.5	0.3-0.6	0.5	0.3-0.5	0.3-0.5	
MECHANICAL PROPERTIES																				
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²	570				800		1,000	1,200		600	600	590	650	600			
		5mm/min	kgf/cm²		800	1,000	700					1,250						600	1,000	1,180
	ISO 527-1A	50mm/min	Mpa	57	80	104	72	110		120	115	124	57	58	60	65	60			122
		5mm/min	Mpa															60	100	
Tensile Strain at Break	ASTM D638	50mm/min	%					4.3							6	100	100			
		5mm/min	%	47	5		4.3			4.1	3.4	4								3.6
	ISO 527-1A	50mm/min	%	15		5	4.1	3.7		3.7	2.7	4	114		6		2			3.2
		20mm/min	%													100				
Flexural Strength	ASTM D790	10mm/min	kgf/cm²																	
		2.8mm/min	kgf/cm²	900	1,400	1,600	1,300	1,200		1,600	1,900	1,680	900	850	750	900	850	950	1,400	1,570
	ISO 178	2mm/min	Mpa	88	130	152	114	170		170	153	170	84	80	75	92	80	95	170	
Flexural Modulus	ASTM D790	10mm/min	kgf/cm²																	
		2.8mm/min	kgf/cm²	25,000	38,000	46,000	44,000	55,000		55,000	75,000	72,000	20,000	20,000	19,000	22,000	20,000	30,000	56,000	63,940
	ISO 178	2mm/min	Mpa	2,600	3,800	4,600	3,800	5,800		6,000	7,900	7,300	2,100	2,100	1,900	2,110	2,220	3,000	6,000	8,000
Izod Impact Strength	ASTM D256	(notched)1/4	kgf-cm/cm	8.1	6		7.1	15		15	12	16		55	58	50	55			15
		(notched)1/8	kgf-cm/cm	9.4	8	12	7.3	16		17	16	17	75	70	77	76	70	28	19	19.1
Charpy Impact Strength	ISO 179 1eA	(notched)	KJ/m²	10	6	11	7.4	14		14	11	17	61	60	59	51	60	27	25	17
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	8.9		10	7.7	11.5		13		16	59	65	54	50	50	27	19	
Rockwell Hardness	ASTM D785	R-Scale		89							93	115	120		115	120	118	116	116	
	ISO 2039-2	R-Scale		120	121	121	116	118			119	115	119		115	120	118	116	116	116
THERMAL PROPERTIES																				
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	131	135	140	137	140		141	136	141	128		125	123	129	141	141	135
		4.5kgf/cm², 6.4mm	°C	142			142	145		145	146				135					142
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	°C	127		139	135	142		142	142		121		115	123	129			135
		Unannealed 0.45MPa, 4.0mm	°C	140	135	143	141	146		146	146		136		130		135			140
		Annealing 1.8MPa, 4.0mm	°C	128		139		142		142			125							135
		Annealing 0.45MPa, 4.0mm	°C	140		144		146		146			136							140
VICAT Softening Temperature	ISO R306	B/50	°C	145		147	144	147		147	150		143	138	137	137	137	137	137	142
FLAME CHARACTERISTICS																				
Flammability	UL94	HB	mm														0.8, 2.5, 3.0			
		V-2	mm	0.8		0.75	3	1.5		1.5	1.5		0.8, 2.5, 3.0	0.8, 2.5, 3.0				0.8	0.8	0.8
		V-1	mm								1.5							3.2	3.2	3.2
		V-0	mm								3.0, 6.0									
		5VA	mm																	
		5VB	mm																	

INFINO® High Impact PC & PC Alloy

Properties	Test Method	Condition		Unit	Eco-Friendly				
					GW-1010	GW-1029	GW-1030S	GW-1043	GW-3130
PHYSICAL PROPERTIES									
Specific Gravity	ASTM D792	-		g/cm²	1.18	1.18	1.18	1.18	1.24
Water Absorption	ASTM D570	-		%					0.05
Melt Flow Index	ASTM D1238	300°C, 1.2kg		g/10min					9
		250°C, 10kg		g/10min	18	19	18	19	17
	ISO 1133	300°C, 1.2kg		g/10min					9
		250°C, 10kg		g/10min	18	19	18	19	17
Mold Shrinkage	ASTM D955	-		%	0.51-0.62		0.5-0.7		0.3-0.4
MECHANICAL PROPERTIES									
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	600	590	600	580	
		5mm/min		kgf/cm²					520
	ISO 527-1A	50mm/min		Mpa	57	60	57	57	55
		5mm/min		Mpa					
Tensile Strain at Break	ASTM D638	50mm/min		%	130		107	112	
		5mm/min		%					13
	ISO 527-1A	50mm/min		%	100		119	98	13
		20mm/min		%					
Flexural Strength	ASTM D790	10mm/min		kgf/cm²		840			
		2.8mm/min		kgf/cm²	800		850	780	900
	ISO 178	2mm/min		Mpa	83	81	82	82	88
Flexural Modulus	ASTM D790	10mm/min		kgf/cm²		20,000			
		2.8mm/min		kgf/cm²	20,500		20,500	20,000	32,000
	ISO 178	2mm/min		Mpa	2,100	1,980	2,100	2,000	3,200
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm	63	56	60	61	18
		(notched)1/8		kgf-cm/cm	80		80	77	25
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	65	91	67	70	20
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	59	65	59	61	19
Rockwell Hardness	ASTM D785	R-Scale			116	116	118	118	110
	ISO 2039-2	R-Scale			119	116	119	118	110
THERMAL PROPERTIES									
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm			123		124	127	137
		4.5kgf/cm², 6.4mm		°C	137		137	136	142
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	120		119	119	131
			0.45MPa, 4.0mm	°C	135		134	133	143
		Annealing	1.8MPa, 4.0mm	°C					131
			0.45MPa, 4.0mm	°C					143
VICAT Softening Temperature	ISO R306	B/50		°C	142	139	141	140	145
FLAME CHARACTERISTICS									
Flammability	UL94	HB		mm			0.8, 3.0	0.8, 1.5, 3.0	0.8, 3.2
		V-2		mm					
		V-1		mm					
		V-0		mm					
		5VA		mm					
		5VB		mm					

INFINO® Flame Retardant PC & PC Alloy

Properties	Test Method	Condition		Unit	Flame Retardant PC					
					Non-Reinforced					
					TP-1002	TP-1029	TN-1045S	TN-1100	TN-1200	TH-1100
PHYSICAL PROPERTIES										
Specific Gravity	ASTM D792	-		g/cm²	1.2	1.18	1.21	1.23	1.22	1.2
Water Absorption	ASTM D570	-		%						
Melt Flow Index	ASTM D1238	220°C, 10kg		g/10min		7.5				
		250°C, 2.16kg		g/10min						
		250°C, 10kg		g/10min	30		72	75	60	17
		250°C, 5kg		g/10min						
	ISO 1133	220°C, 10kg		g/10min		7.5				
		250°C, 2.16kg		g/10min						
		250°C, 10kg		g/10min	30		72	75	60	17
		250°C, 5kg		g/10min						
Mold Shrinkage	ASTM D955	-			0.5-0.7	0.50-0.62	0.36-0.44			
MECHANICAL PROPERTIES										
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	600		730	740	700	650
		5mm/min		kgf/cm²		850				
	ISO 527-1A	50mm/min		Mpa	61	100	72	69	70	62
		5mm/min		Mpa						
Tensile Strain at Break	ASTM D638	50mm/min		%	114		96	87	83	100
		5mm/min		%		3				
	ISO 527-1A	50mm/min		%	98	3	95	87	98	92
		5mm/min		%						
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	900	1,100	1,100	1,100	1,100	960
	ISO 178	2.8mm/min		Mpa						
		2mm/min		Mpa	85	140	112	102	100	90
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	23,000	54,000	26,500	27,000	26,500	22,000
	ISO 178	2.8mm/min		Mpa						
		2mm/min		Mpa	2,000	6,100	3,000	2,700	2,600	2,200
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm	9.7	7	5.4			
		(notched)1/8		kgf-cm/cm	65	8	3	4	4.5	>5
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	17	9	4	5	5.4	39
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	13	9	4.4	4.5	4.2	25
Rockwell Hardness	ASTM D785	R-Scale			120	112	123	123	122	119
	ISO 2039-2	R-Scale			121	114	123	123	122	119
THERMAL PROPERTIES										
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm			130	95	100	95	95	130
		4.5kgf/cm², 6.4mm		°C	142	103		102	102	140
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	125	96	92	91	91	124
			0.45MPa, 4.0mm	°C	140	101	103	100	100	137
		Annealing	1.8MPa, 4.0mm	°C	127		104	99	99	124
			0.45MPa, 4.0mm	°C	140		107	102	102	137
VICAT Softening Temperature	ISO R306	B/50		°C	145	102	110	106	108	144
FLAME CHARACTERISTICS										
Flammability	UL94	HB		mm						
		V-2		mm			2.0, 3.0			
		V-1		mm				2		
		V-0		mm	3			2.5	2	2
		5VA		mm						
		5VB		mm						

PRODUCT SELECTION GUIDE

INFINO® Flame Retardant PC & PC Alloy

Properties	Test Method	Condition		Unit	Flame Retardant PC							Flame Retardant PC					Flame Retardant PC/ABS					
					Non-Reinforced							Reinforced					Non-Reinforced					
					NH-1035	UF-1013	UF-1017B	UF-1017S	GC-1019	GC-1022		NH-3204G	NH-3208GL	NH-3402F	HN-3104	HN-3204R	NH-1000T	NH-1015	NH-1015V	NH-1027HF	NE-1029	NH-1037
PHYSICAL PROPERTIES																						
Specific Gravity	ASTM D792	-		g/cm³	1.19	1.2	1.2	1.2	1.12	1.18		1.32	1.34	1.51	1.28	1.33	1.17	1.18	1.17	1.19	1.17	1.19
Water Absorption	ASTM D570	-		%										0.15						0.2		
Melt Flow Index	ASTM D1238	220°C, 10kg		g/10min		18	31	19	18	19			24				40	24	30	55	35	19
		250°C, 2.16kg		g/10min																		
		250°C, 10kg		g/10min	35							36		33	12.5	11						
		250°C, 5kg		g/10min																		
	ISO 1133	220°C, 10kg		g/10min		18	31	19	18				24				40	24	30	55	35	20
		250°C, 2.16kg		g/10min																		
		250°C, 10kg		g/10min	35							36		33	12.5							
		250°C, 5kg		g/10min																		
Mold Shrinkage	ASTM D955	-			0.46-0.57					0.5-0.7		0.22-0.27			0.1		0.32-0.39	0.35-0.43	0.33-0.40		0.33-0.40	
MECHANICAL PROPERTIES																						
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	620	650	620	620	650	970							550	630	600	610	630	670
		5mm/min		kgf/cm²								900	1,070	1,430	550	700						
	ISO 527-1A	50mm/min		Mpa	59	57	63	61	60			109	120	184			54	60	61	61	56	61
		5mm/min		Mpa											60							
Tensile Strain at Break	ASTM D638	50mm/min		%	88	83			34	95							24	88	81		18	109
		5mm/min		%								4		3.2	6							
	ISO 527-1A	50mm/min		%	88	87	52	93	78				3	3.2			78	51	45	39	55	28
		5mm/min		%											6							
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	900	910	910	910	1,000	800		1,100	1,400	1,800	850	1,100	780	880	870	900	850	1,000
	ISO 178	2.8mm/min		Mpa																		
		2mm/min		Mpa	90	87	95	90	90			150	159	250	90		81	88	89	92	90	92
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	25,000	23,000	24,000	23,500	27,000	21,000		45,000	59,300	110,000	36,000	55,000	24,500	24,500	24,000	24,000	24,000	27,000
	ISO 178	2.8mm/min		Mpa																		
		2mm/min		Mpa	2,300	2,300	2,500	2,350	2,000			6,000	6,400	12,000	3,500		2,700	2,500	2,500	2,600	1,500	2,500
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm	16	63			24	62		9		10	8		14	17	14		17	19
		(notched)1/8		kgf-cm/cm	70	80	60	65	65	75		10	9	11	10	10	40	60	55	55	50	60
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	55	73	16	67	5.7			8	10	17	10		39	44	19	17	12	36
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	54	62	15	64	48			7	9	16	10		35	40	30	17	11	32
Rockwell Hardness	ASTM D785	R-Scale			120	119		119	120	118			91	122	115		112			118	115	120
	ISO 2039-2	R-Scale			121	121	120	119	120				120	122	115		114	118	118	121	115	120
THERMAL PROPERTIES																						
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm			113	95			94	129		115	92.8	110	140	141	81	84	86		80	100
		4.5kgf/cm², 6.4mm		°C		103			102					117	139							108
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	107	89	91	93	91			115	93	114	137		76	81	82	82	78	93
			0.45MPa, 4.0mm	°C	120	100	103	104	101				98	122	136		86	93	94	92	88	105
		Annealing	1.8MPa, 4.0mm	°C	116	94	104	105	99				94				84	93	97	90	87	100
			0.45MPa, 4.0mm	°C	122	100	107	108	104				98				92	98	102	96	93	106
VICAT Softening Temperature	ISO R306	B/50		°C	126	106	109	109	107	143			100	118			88	98	100	98	91	111
FLAME CHARACTERISTICS																						
Flammability	UL94	HB		mm																1		
		V-2		mm			0.4	0.4		0.75							0.75			1.2, 1.5, 3.0		
		V-1		mm										2			1.5, 2.0			1	1	
		V-0		mm	1.5, 2.0-2.7	0.8	0.7	0.7		1.5, 3.0		2.5	0.75	2.5, 3.0	1.5, 3.0		2.1-3.0	1.5	1.5	1.2, 1.5, 3.0	1.2-3.0	1.5
		5VA		mm													3	3				
		5VB		mm	2.0-2.7												2.0-2.5	2	2	1.5, 3.0	1.5	

PRODUCT SELECTION GUIDE

INFINO® Flame Retardant PC & PC Alloy

Properties	Test Method	Condition		Unit	Flame Retardant PC/ABS						Flame Retardant PC/ABS											
					Non-Reinforced						Non-Reinforced								Reinforced			
					NH-1017D	NE-1030	NH-1150HH	NH-1250	QP-1010		GC-1015	GC-1017	GC-1150	LX-1031	LX-1080	LM-1090	EF-1032	NF-3017	HM-1100F	LS-1159	LS-1159S	LS-1150G
PHYSICAL PROPERTIES																						
Specific Gravity	ASTM D792	-		g/cm³	1.19	1.18	1.29	1.39	1.15		1.2	1.17	1.29	1.18	1.2	1.2	1.19	1.19	1.25	1.28	1.28	1.28
Water Absorption	ASTM D570	-		%																		
Melt Flow Index	ASTM D1238	220°C, 10kg		g/10min	46	53	30		50		25	46	31	24	48	58			26			24
		250°C, 2.16kg		g/10min														21		14	9	
		250°C, 10kg		g/10min													19					
		250°C, 5kg		g/10min				35														
	ISO 1133	220°C, 10kg		g/10min	46	53	30		50		25	46	31	24	48	58			26			
		250°C, 2.16kg		g/10min														21		14	9	
		250°C, 10kg		g/10min													19					24
		250°C, 5kg		g/10min				35														
Mold Shrinkage	ASTM D955	-				0.32-0.39	0.12	0.18-0.22					0.22-0.27		0.54-0.66	0.6			0.1-0.2	0.1	0.1	
MECHANICAL PROPERTIES																						
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	600	640	600		580		620	580	650	550	650	670	630	650				
		5mm/min		kgf/cm²				630											600	900	900	900
	ISO 527-1A	50mm/min		Mpa	60	60	60		55		58	57	64	54	64	60	63	65				86
		5mm/min		Mpa				63			80								55	95	90	
Tensile Strain at Break	ASTM D638	50mm/min		%		59	7		80		102	23	11		25	60	120					
		5mm/min		%				15											5	3.3	3	
	ISO 527-1A	50mm/min		%	33	35	7		32		96	7.8		46	14	60	73					3.6
		5mm/min		%				15											4	3	3	
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	850	890	900	950	780		900	850	950		900	980	900	900	980	1,300	1,200	1,400
	ISO 178	2.8mm/min		Mpa				95								85					120	
		2mm/min		Mpa	90	90	90		78		90	86	93	82	88		73	98	95	130		135
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	24,000	25,000	38,000	55,000	21,000		25,000	24,000	41,000	23,000	24,000	26,000	24,000	25,000	40,000	50,000	45,000	46,000
	ISO 178	2.8mm/min		Mpa				5,500								2,350					4,500	
		2mm/min		Mpa	2,500	2,500	3,400		2,100		2,500	2,500	3,900	2,400	2,350		2,500	2,650	3,800	5,000		4,400
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm		12	8	7	30		16	14	6		11	5	43		8	5.7	8	
		(notched)1/8		kgf-cm/cm	60	50	8	8	51		71	60	7	37	15	7	85	5	8	6.2	8	9
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	15	17	8	8	31		55	20	7	33	8	5	62	7	7	7	8	9.9
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	14	16	8	8	27		52	24	6	34	15	5	56	6.5	8	6	8	8.2
Rockwell Hardness	ASTM D785	R-Scale			118		110	110	110		116	115		115	118	122	119	120	118	120	120	
	ISO 2039-2	R-Scale			118	118		110	107		117	115		116	118	122	126	120	118	120	120	121
THERMAL PROPERTIES																						
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm				83	81	95	80		80	83	83		84	87	95		94	91	90	127
		4.5kgf/cm², 6.4mm		°C				98	87		95	91			94		103		95	96	93	
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	82	77	81	95	77		81	77		76	84	87	90		94	89	90	120
			0.45MPa, 4.0mm	°C	93	90	85	98	86		92	86		86	94	100	101		95	94	93	122
		Annealing	1.8MPa, 4.0mm	°C	91	85								83								123
			0.45MPa, 4.0mm	°C	98	93								90								128
VICAT Softening Temperature	ISO R306	B/50		°C	98	93	94	100	90		97	92	93	90	97	100	106		98	97		128
FLAME CHARACTERISTICS																						
Flammability	UL94	HB		mm	0.8																	
		V-2		mm																		0.8-3.0
		V-1		mm		1.5			2.5						1.2	1.5				1.5	1.5	
		V-0		mm	2.0, 3.0	3	1.2	1.2, 3.0	3.2		1.5	2	1.2, 3.0	1.5-3.0	1.5-3.0	3	1.5	1	2	2.5, 3.0	3	
		5VA		mm							3											
		5VB		mm	2.0, 3.0						2	2										

INFINO® Diffusion PC

Properties	Test Method	Condition		Unit	Extrusion FD-1010	Extrusion FD-1112	Extrusion FD-1510D	Blow Molding/Injection FD-1122
PHYSICAL PROPERTIES								
Specific Gravity	ASTM D792	-		g/cm²	1.2	1.19	1.2	1.18
Melt Flow Index	ASTM D1238	250°C, 10kg		g/10min	16	14.6	12	35
	ISO 1133	250°C, 10kg		g/10min	16	14.6	12	35
MECHANICAL PROPERTIES								
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	650	630	660	650
	ISO 527-1A	50mm/min		Mpa	62	68	61	61
Tensile Strain at Break	ASTM D638	50mm/min		%	100	100		106
	ISO 527-1A	50mm/min		%	100	113		112
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	920	930	960	950
	ISO 178	2mm/min		Mpa	87	90	88	91
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	23,000	21,000	22,000	23,000
	ISO 178	2mm/min		Mpa	2,100	2,100	2,100	2,200
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm	10	10		10
		(notched)1/8		kgf-cm/cm	90	10	12	>10
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	20	15	7	10
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	14	12		10
Rockwell Hardness	ASTM D785	R-Scale			120			
	ISO 2039-2	R-Scale			120	122		122
THERMAL PROPERTIES								
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm		°C	133	130		122
		4.5kgf/cm², 6.4mm		°C	141			
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	125	125		122
			0.45MPa, 4.0mm	°C	139	139		126
		Annealing	1.8MPa, 4.0mm	°C	125	126		123
			0.45MPa, 4.0mm	°C	139	139		136
VICAT Softening Temperature	ISO R306	ISO R30		°C	146	145		143
FLAME CHARACTERISTICS								
Flammability	UL94	HB		mm				
		V-2		mm	1.5-2.0	0.8-3.0		0.8-3.0
		V-1		mm				
		V-0		mm	3		1.2	
		5VA		mm				
		5VB		mm				

INFINO® PC Alloy For Automotive

Properties	Test Method	Condition		Unit	PC/ABS High Performance/High Heat Resistant HP-1000X	HP-1000XA	HP-1000XG	LI-1000	HP-1011
PHYSICAL PROPERTIES									
Specific Gravity	ASTM D792	-		g/cm²	1.15	1.12	1.15	1.2	1.12
Melt Flow Index	ASTM D1238	250°C, 10kg		g/10min		28	37	28	35
		250°C, 2.16kg		g/10min	6				
		260°C, 5kg		g/10min					
	ISO 1133	250°C, 10kg		g/10min		28			35
		250°C, 2.16kg		g/10min	6				
		260°C, 5kg		g/10min					
Mold Shrinkage	ASTM D955	-		%	0.4-0.6	0.5-0.6	0.3-0.5		
MECHANICAL PROPERTIES									
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	570	550	650		530
		5mm/min		kgf/cm²				600	
	ISO 527-1A	50mm/min		Mpa	54	50	60		50
		5mm/min		Mpa					
Tensile Strain at Break	ASTM D638	50mm/min		%	110	100	100		
		5mm/min		%					
	ISO 527-1A	50mm/min		%	108	100	80		92
		5mm/min		%					
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	810	750	900	800	750
		10mm/min		kgf/cm²					
	ISO 178	2mm/min		Mpa	77	80	95		74
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	22,000	20,500	24,000	2,000	20,000
		10mm/min		kgf/cm²					
	ISO 178	2mm/min		Mpa	2,000	2,100	2,500		2,000
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm	58	45	15		45
		(notched)1/8		kgf-cm/cm	80	60	55	60	66
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	60	45	50		49
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	50	45	40		46
Rockwell Hardness	ASTM D785	R-Scale			115	113	120		110
	ISO 2039-2	R-Scale			116	112	120		110
THERMAL PROPERTIES									
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm		°C	109	110	115		
		4.5kgf/cm², 6.4mm		°C			129		
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	107	102	109		99
			0.45MPa, 4.0mm	°C	125	123	125		122
		Annealing	1.8MPa, 4.0mm	°C	114	112	113		105
			0.45MPa, 4.0mm	°C	125	125	128		123
VICAT Softening Temperature	ISO R306	ISO R306		°C	129	123	130		121
FLAME CHARACTERISTICS									
Flammability	UL94	HB		mm					
		V-2		mm					
		V-1		mm					
		V-0		mm					
		5VA		mm					
		5VB		mm					

PRODUCT SELECTION GUIDE

INFINO® PC Alloy For Automotive

Properties	Test Method	Condition		Unit	PC/ABS						PC/ABS				PC/ASA					PC/PET	
					High Performance/High Heat Resistant			Metal Plating			High Impact				WR-7000	WR-7000P	WX-7010	WR-7390	WR-7250H	AE-2030	AE-2130
					WP-1069	WP-1089	WP-1053	WP-1041	WP-1041G		HI-1001B	HI-1001BN	WP-1100	WP-1200							
PHYSICAL PROPERTIES																					
Specific Gravity	ASTM D792	-		g/cm²	1.13	1.14	1.12	1.09	1.09		1.13	1.11	1.22	1.27	1.12	1.14	1.16	1.17	1.16	1.24	1.23
Melt Flow Index	ASTM D1238	250°C, 10kg		g/10min	47	47	45	35	31		20	35	40	36	28	34	38	31	30	32.4	
		250°C, 2.16kg		g/10min																	
		260°C, 5kg		g/10min																	21
	ISO 1133	250°C, 10kg		g/10min	47		45				20	40	40	36	28	34	38	31	30	32.4	
		250°C, 2.16kg		g/10min		47		4	3												21
		260°C, 5kg		g/10min																	
Mold Shrinkage	ASTM D955	-		%	0.5-0.6	0.5-0.6		0.5-0.6	0.5-0.6		0.31-0.38	0.5-0.7	0.2-0.4	0.23-0.28	0.5-0.9	0.4-0.6	0.5-0.6				0.3–0.5
MECHANICAL PROPERTIES																					
Tensile Strength at Yield	ASTM D638	50mm/min		kgf/cm²	570	540	540	490	500		620	580			550	590	550	550	600	570	580
		5mm/min		kgf/cm²									920	1,200							
	ISO 527-1A	50mm/min		Mpa	58	52	54	47	47		60	51			58	57	54	61	58	54	58
		5mm/min		Mpa									94	109							
Tensile Strain at Break	ASTM D638	50mm/min		%	80	80		25	100		55	45				60	65	110	90		90
		5mm/min		%									4.4	3.5							
	ISO 527-1A	50mm/min		%	50	52	78	22	73		15	42			54	60	30	90	85	108	90
		5mm/min		%									4.4	3.9							
Flexural Strength	ASTM D790	2.8mm/min		kgf/cm²	830	770	750	670	670		850	850	1,200	1,500	830	820	740	780		780	830
		10mm/min		kgf/cm²															830		
	ISO 178	2mm/min		Mpa	82	80	75	73	70		90	78	150	180	88	87	78	90	88	83	82
Flexural Modulus	ASTM D790	2.8mm/min		kgf/cm²	22,500	21,500	22,500	19,000	19,500		25,000	23,000	43,000	62,000	22,000	23,000	21,500	21,000		21,000	25,000
		10mm/min		kgf/cm²															23,000		
	ISO 178	2mm/min		Mpa	2,300	2,200	2,250	2,000	2,000		3,000	2,200	4,700	7,400	2,300	2,200	2,200	2,300	2,400	2,200	2,500
Izod Impact Strength	ASTM D256	(notched)1/4		kgf-cm/cm		43		40	42		34	39	8	8		14	45	17	19		18
		(notched)1/8		kgf-cm/cm	58	60	48	55	55		45	50	7	7	55	46	65	66	55	72	56
Charpy Impact Strength	ISO 179 1eA	(notched)		KJ/m²	48	51	46	47	47		65	46	12	11	70	43	58	56	57	61	33
Izod Impact Strength	ISO 180 1A	(notched)		KJ/m²	44	46	43	44	45		53		8.5	8	51	42	54	49	51	57	38
Rockwell Hardness	ASTM D785	R-Scale			116	108	112	103	105		115	110			114	111	111	116	116	116	111
	ISO 2039-2	R-Scale			114	110	114	103	107		115	112			114	111	110	118	118	116	111
THERMAL PROPERTIES																					
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm		°C	110	110	105	99	100		104	100	128	128	95	105	108	112	114	107	108
		4.5kgf/cm², 6.4mm		°C	127	130					117	113	138	138		116	124	130	129		128
	ISO 75-2	Unannealed	1.8MPa, 4.0mm	°C	104	104	94	93	93		96	93	119	121	94	97	101	111	106	95	98
			0.45MPa, 4.0mm	°C	123	123	117	115	113		115	115	129	131	112	115	120	127	126	120	120
		Annealing	1.8MPa, 4.0mm	°C	107	105	106	107	101		103	99			102		105		111	103	112
			0.45MPa, 4.0mm	°C	123	125	119	119	116		115	115			115		120		125	121	125
VICAT Softening Temperature	ISO R306	ISO R306		°C	125	120	113	109	113		111	112	129	130	111		120	131	130	129	132
FLAME CHARACTERISTICS																					
Flammability	UL94	HB		mm								1.5, 3.0, 6.0									
		V-2		mm																	
		V-1		mm																	
		V-0		mm																	
		5VA		mm																	
		5VB		mm																	

PRODUCT SELECTION GUIDE

INFINO® High Performance EP

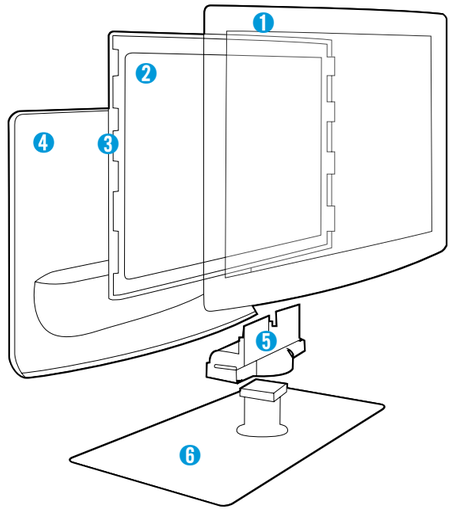
Properties	Test Method	Condition	Unit	Hight Heat Resistant							Hight Heat Resistant		Super Structural				
				LED Reflector							Connector		PPS BASED				
				TK-4046H	TK-6036H	TK-6058W	TK-2046H	TK-2046HM	TK-2057H		HX-4300G	HX-4300GN	XP-2130A	XP-2140C	XP-2165M	XP-2165BM	XP-2165MC
PHYSICAL PROPERTIES																	
Specific Gravity	ASTM D792	-	g/cm²	1.55	1.48	1.7	1.6	1.63	1.85		1.45	1.46	1.65	1.66	1.96	1.86	1.96
Water Absorption	ASTM D570	-	%										0.02	0.02	0.02	0.02	0.02
Melt Flow Index	ASTM D1238	250°C, 2.16kg	g/10min														
		250°C, 5kg	g/10min														
		280°C, 5kg	g/10min														
		300°C, 1.2kg	g/10min				60	20									
		315°C, 2.16kg	g/10min						34								
		316°C, 5kg	g/10min										116	83			113
		330°C, 2.16kg	g/10min		50	60					20	26					
		330°C, 5kg	g/10min	5											65		
		260°C, 5kg	g/10min										1.65	1.66	1.96	1.86	1.96
	ISO 1133	250°C, 2.16kg	g/10min														
		250°C, 5kg	g/10min														
		280°C, 5kg	g/10min														
		300°C, 1.2kg	g/10min				60	20									
		315°C, 2.16kg	g/10min						34								
		316°C, 5kg	g/10min										116	83			113
		330°C, 2.16kg	g/10min		50	60					20	26					
		330°C, 5kg	g/10min	5											65		
		260°C, 5kg	g/10min														
Mold Shrinkage	ASTM D955	-	%			1.12	0.41-0.5		0.7-0.9		0.45-0.55	0.58	0.3-1.2	0.27-0.33	0.25-0.8	0.2-0.8	0.25-0.8
MECHANICAL PROPERTIES																	
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²														
		5mm/min	kgf/cm²	1,000	1,000	550	630	620	560		1,700	1,700	1,300	1,800	1,200	1,100	1,500
	ISO 527-1A	50mm/min	Mpa	72	87	50	54	67			170		139	180	153	138	188
		5mm/min	Mpa						60			150					
Tensile Strain at Break	ASTM D638	50mm/min	%														
		5mm/min	%			1.8	1.5	1.5	1.5		3	3.5	2.5	2.5	1.5	1.5	1.5
	ISO 527-1A	50mm/min	%	1.3	2.2	1.5	1.1	1.2			3		3	2.7	2.5	2	3.2
		5mm/min	%						1.6			3.5					
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	1500	1500	850	820	800	760		2,200	2,400	2,000	2,700	1,900	1,800	2,000
		5mm/min	kgf/cm²														
	ISO 178	2mm/min	Mpa	122	135	87	80	105	85		220	210	191	260	210	196	240
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	72,500	60,000	41,000	71,000	77,000	85,000		100,000	104,000	100,000	130,000	180,000	180,000	180,000
		5mm/min	kgf/cm²														
	ISO 178	2mm/min	Mpa	6,900	5,800	3,500	6,300	7,100	8,500		10,800	10,500	10,200	13,400	12,400	16,500	13,100
Izod Impact Strength	ASTM D256	(notched)1/4	kgf-cm/cm			2.5		3	2		7		8	7.1	4.8		5.4
		(notched)1/8	kgf-cm/cm	3	3	3	2.5	3	2		6.5	7.5		10	6	4	6
Charpy Impact Strength	ISO 179 1eA	(notched)	KJ/m²	2	2.6	2	3.5	3.3	2		10		11	13	8.6	6.1	11
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	2.8	2.6	3	2.7	3.3	3		9	7.5	11	11	8.1	7	11
Rockwell Hardness	ASTM D785	R-Scale				115			119		122	120	120	121	121	121	121
	ISO 2039-2	R-Scale		122	115	115	122	120	119		120	120	116	121	121	167	121
THERMAL PROPERTIES																	
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	295	290	145	260	250	205		290	281	270	270	270	270	270
		4.5kgf/cm², 6.4mm	°C			210	281		250					282	285		284
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	°C			145	250		155			281		267	258		272
		Unannealed 0.45MPa, 4.0mm	°C			210	276		210					283	279		285
		Annealing 1.8MPa, 4.0mm	°C				252							272	260		274
		Annealing 0.45MPa, 4.0mm	°C				277							283	278		283
VICAT Softening Temperature	ISO R306	ISO R306	°C														
FLAME CHARACTERISTICS																	
Flammability	UL94	HB	mm			1.5-3.0	1.5-3.0		1.5-3.0				0.75				
		V-2	mm														
		V-1	mm														
		V-0	mm									0.4	0.75	0.75	1.6		1.6
		5VA	mm												1.6		1.6
		5VB	mm														

PRODUCT SELECTION GUIDE

INFINO® High Performance EP

Properties	Test Method	Condition	Unit	Super Structural				Automotive								
				PA BASED				Exterior			Lighting			Structure		
				MKD-1016	XF-4150	MX-4500G		AR-6508	AE-3060	HC-8040	ASF-9810F	ASF-9810FM	ASF-9810FL	AR-5300H	CA-7000	AE-3063I
PHYSICAL PROPERTIES																
Specific Gravity	ASTM D792	-	g/cm²	1.56	1.57	1.63		1.75	1.21	1.1	1.31	1.31	1.31	1.45	1.09	1.2
Water Absorption	ASTM D570	-	%	3.9	0.3							0.4	0.4			
Melt Flow Index	ASTM D1238	250°C, 2.16kg	g/10min					9.5	8.5		55	60	40			
		250°C, 5kg	g/10min											30		
		280°C, 5kg	g/10min							22					13	
		300°C, 1.2kg	g/10min	10												
		315°C, 2.16kg	g/10min		13											
		316°C, 5kg	g/10min													
		330°C, 2.16kg	g/10min			70										
		330°C, 5kg	g/10min													
		260°C, 5kg	g/10min													21
	ISO 1133	250°C, 2.16kg	g/10min						8.5		55	60	40			
		250°C, 5kg	g/10min											30		
		280°C, 5kg	g/10min							22					13	
		300°C, 1.2kg	g/10min	10												
		315°C, 2.16kg	g/10min		13											
		316°C, 5kg	g/10min													
		330°C, 2.16kg	g/10min			70										
		330°C, 5kg	g/10min													
		260°C, 5kg	g/10min													21
Mold Shrinkage	ASTM D955	-	%		0.1-0.3	0.21-0.26				0.9-1.2	1.77	1.59	1.59	0.3	1.0-2.0	
MECHANICAL PROPERTIES																
Tensile Strength at Yield	ASTM D638	50mm/min	kgf/cm²						600	610	600		600		600	550
		5mm/min	kgf/cm²	2,700	2,200	1,900		1,450				550		1,350		
	ISO 527-1A	50mm/min	Mpa		188				58	60	58	58	58	110	57	50
		5mm/min	Mpa	260		180										
Tensile Strain at Break	ASTM D638	50mm/min	%						120	30	15		50			
		5mm/min	%	4.2	2.7	3.6		3				50		5		
	ISO 527-1A	50mm/min	%						87	27	15	15	50	5	30	
		5mm/min	%	4.2		3.6										
Flexural Strength	ASTM D790	2.8mm/min	kgf/cm²	3,400	2,800	2,400		2,200	800	860	850		850	1,900	800	750
		5mm/min	kgf/cm²									850				
	ISO 178	2mm/min	Mpa	330	273	230			84	94	80	80	80	170	78	70
Flexural Modulus	ASTM D790	2.8mm/min	kgf/cm²	156,000	135,000	154,000		140,000	21,000	22,000	25,000		25,500	95,000	21,500	20,000
		5mm/min	kgf/cm²									26,500				
	ISO 178	2mm/min	Mpa	16,000	15,500	15,100			2,100	2,100	2,320	2,320	2,300	7,800	2,000	1,800
Izod Impact Strength	ASTM D256	(notched)1/4	kgf·cm/cm	12		6		9		18	4.2	3.5	4	7		
		(notched)1/8	kgf·cm/cm	13	12.5	7		11	70	20	3.8	3	3.5	8	20	70
Charpy Impact Strength	ISO 179 1eA	(notched)	KJ/m²	17	16	7			65	20	3.7	3.5	5	8		54
Izod Impact Strength	ISO 180 1A	(notched)	KJ/m²	17	16	7			61	20	4	3	4	8	20	52
Rockwell Hardness	ASTM D785	R-Scale		121		120			114	114	116	116	116	117	113	110
	ISO 2039-2	R-Scale		121	116	120			125	114	116	116	116	117	113	110
THERMAL PROPERTIES																
Heat Deflection Temperature	ASTM D648	18.56kgf/cm², 6.4mm	°C	250	280	240		205	98	108				190		90
		4.5kgf/cm², 6.4mm	°C			>250					165	165	165	205	200	
	ISO 75-2	Unannealed 1.8MPa, 4.0mm	°C	250		240			85	85	57	57	60	180		80
		Unannealed 0.45MPa, 4.0mm	°C			>250			104		124	160	160	195	190	
		Annealing 1.8MPa, 4.0mm	°C						82		66					
		Annealing 0.45MPa, 4.0mm	°C						92		131					
VICAT Softening Temperature	ISO R306	ISO R306	°C		191				123		180	185		205		
FLAME CHARACTERISTICS																
Flammability	UL94	HB	mm	0.8, 1.5, 3.0												
		V-2	mm													
		V-1	mm													
		V-0	mm			0.8										
		5VA	mm													
		5VB	mm													

TV/Monitor



1. Front Cover

MABS BF-0950

ABS HG-0760TV, SD-0150

Flame Retardant PC/ABS NH-1017D,
NE-1030, NE-1030TV
PC/ABS/GF HM-1100(F),
LS-1159, LS-1159S

TR ABS TX-0510T

Double Injection

Flame Retardant PC TN-1100

MABS TF-0930, BF-0677HF, BF-0950

2. Back Light Frame

PC/ABS/GF (V2) LS-1150G,
PC/GF (V2) LS-3104G

Flame Retardant PC LH-1070W

PC/GF (V2) HN-3102GH

3. Middle Cover

PC/ABS/GF HM-1100, HM-1100F,
LS-1159

4. Rear Cover

mPPE NH-1904

Flame Retardant PS VE-1801, VE-1897,
VE-1890 K

PC/ABS/GF HM-1100F, LS-1159,
LS-1159S

5. Guide Stand Neck

PC/GF 20% HF-3200 H

Flame Retardant PC/GF 20% HF-3202H

6. Stand Base

MABS BF-0950

ABS HG-0760TV, SD-0150

Flame Retardant PC/ABS NH-1017D

Metal Plating ABS MP-0670

PC/ABS/GF HM-1200

OA – Multifunctional Copier/Printer

1. Internal

Developer & Toner

Flame Retardant ABS/GF 20% GR-4020
Flame Retardant ABS NH-0825 S

LSU

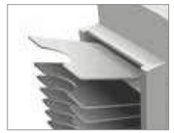
PC/GF 30% HM-3301GL
PC/GF 20% HF-3201M

Fuser

Flame Retardant PBT/GF30%
VB-5300GS
Flame Retardant PC/GF20%
NH-3208GL

Main Frame (Chassis)

Flame Retardant ABS VE-0860 P
Flame Retardant PC NH-1023P



2. ADF / Tray

Transparent PC(HB) SC-1220R

Transparent ABS(HB) TX-0510

ABS(HB) HF-0660I

3. Exterior & Others

Housing

ABS/PMMA BF-0677HF
NH PC/ABS NE-1029, GC-1017

ABS(HB) CM-0140

Flame Retardant ABS VE-0856,
NH-0825 S

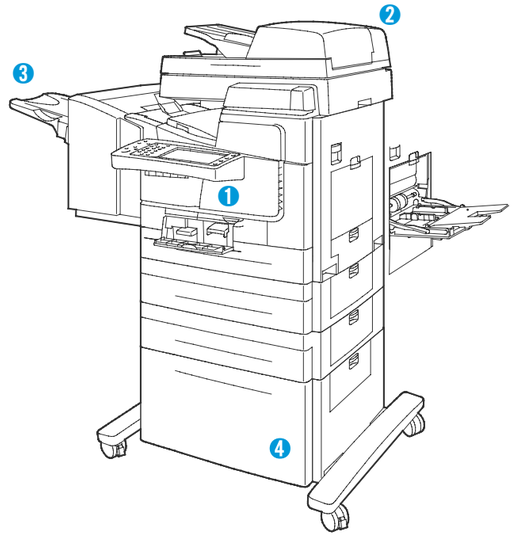
Cassette

ABS(HB) CM-0140, GC-0700

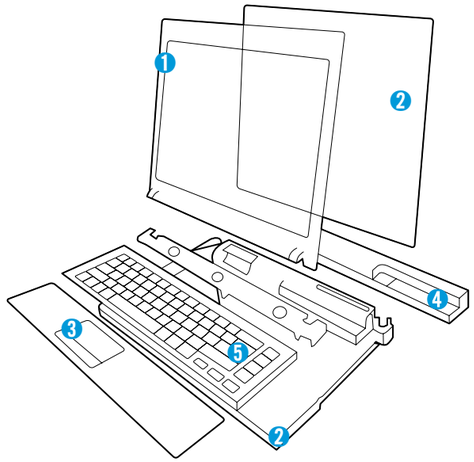
Gear

PPS/GF 40% XP-2140

PC LF-1025



Note PC



1. Front Bezel

Flame Retardant PC/PMMA NF-3017 (Scratch Resistant)

Flame Retardant PC/ABS NH-1021 (High Gloss)

NH-1015(V) (General), NH-1022

2. Rear Cover Base

Flame Retardant PC/ABS NH-1015(V), GC-1015

Flame Retardant PC/ABS MF NH-1150(HH), NH-1250

Flame Retardant PC/GF NH-3280GL

Flame Retardant PPA/GF MX-4500G

PC/GF NH-3300

3. Antenna Cover Palm Rest

Flame Retardant PC/ABS NH-1015(V), GC-1015

Flame Retardant PC/ABS MF NH-1150(HH)

Flame Retardant PC/GF NH-3280GL

4. Battery Pack

Flame Retardant PC UF-1017S

GC-1019

5. Keyboard Frame

Flame Retardant PC/ABS NH-1021

NH-1015(V)

ABS HG-0760TV

Mobile Phone

1. Keypad

PC/PMMA IV-1071

ABS SF-0941

2. Front Cover

PC CF-1050, CF-1070,

CF-1030, GM-1080

3. Battery

Flame Retardant PC UF-1017S

4. Rear Cover

PC CF-1050, GM-1080

PC/GF CF-3104HF

PC/GF CF-3200HF

PC/GF CF-3300HF

PC/GF CF-3300LW

PPA/GF CF-4150

PA/GF MKD-1016

5. Battery Cover

PC CF-1050

PC CF-1070

PC CF-1051T

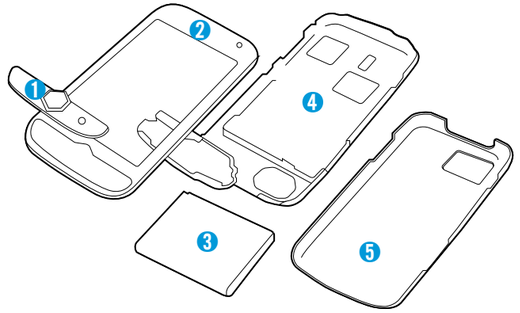
PC CF-1011T

PC/GF CF-3104HF

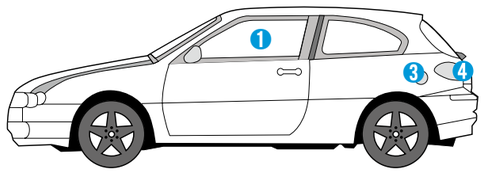
PC/ABS ST-1009

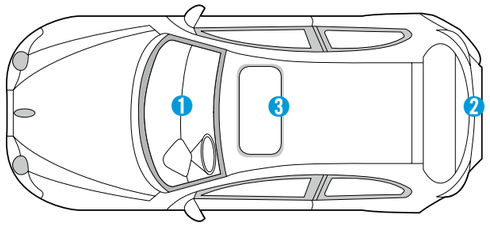
PC/ABS HI-1001BN

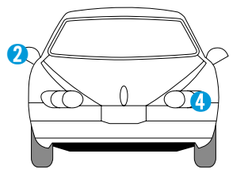
PC/ABS HP-1011



Automotive







1. Interior

Power Window Switch Cover:
Heat Resistance ABS

Air Vent: PC/PBT, PC/ABS

Center Fascia: PC, PC/ABS

Overhead Console: PC/ASA

Console: Heat Resistance ABS

2. Exterior

Tailgate Garnish:
PC/ABS, MP ABS MP-0670

Rear Spoiler:
Blow Molding ABS BM-0320 J

Wheel Cover: MP PC/ABS, PC/ABS

Outside Door Handle: MP PC/ABS

Side Mirror: ASA, PBT/PET/GF

Radiator Grill:
MP ABS MP-0670, ASA WX-9310UV

3. Structure

Panorama Sunroof Frame: PBT/ASA/GF

Fuel Filler Door: PA/PPE/CNT

Fender: PA/PPE/CNT

4. Lighting

Head Lamp Bezel: PBT/PET, PBT

Rear Lamp Housing: PC/ABS

LED Lighting

1. Lens Cover

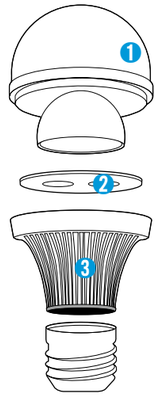
Diffusion PC FD-1510D,
FD-1122, FD-1010, FD-1112

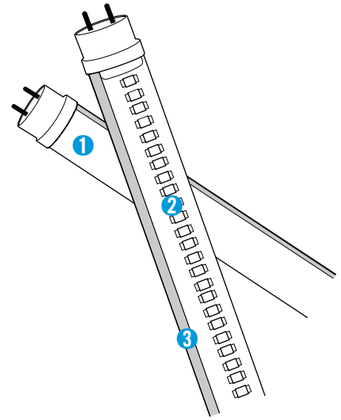
2. Reflector

PA6T TK-4046H , TK-4047H
PA10T TK-6036H PCT TK-2046H

3. Heat Sink

Thermally conductive polymer (PPS based)
XI-2008F





Smart Meter

(IEC) Smart Meter

1. Meter Cover

PC (V2) SC-1220UR

2. Terminal Block

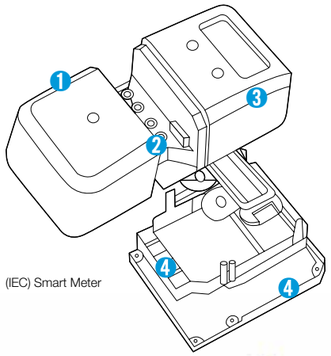
Flame Retardant PC/GF 10% HN-3104

3. Cover Meter

Flame Retardant PC/GF 10% HN-3104

4. Base Meter/Base Frame

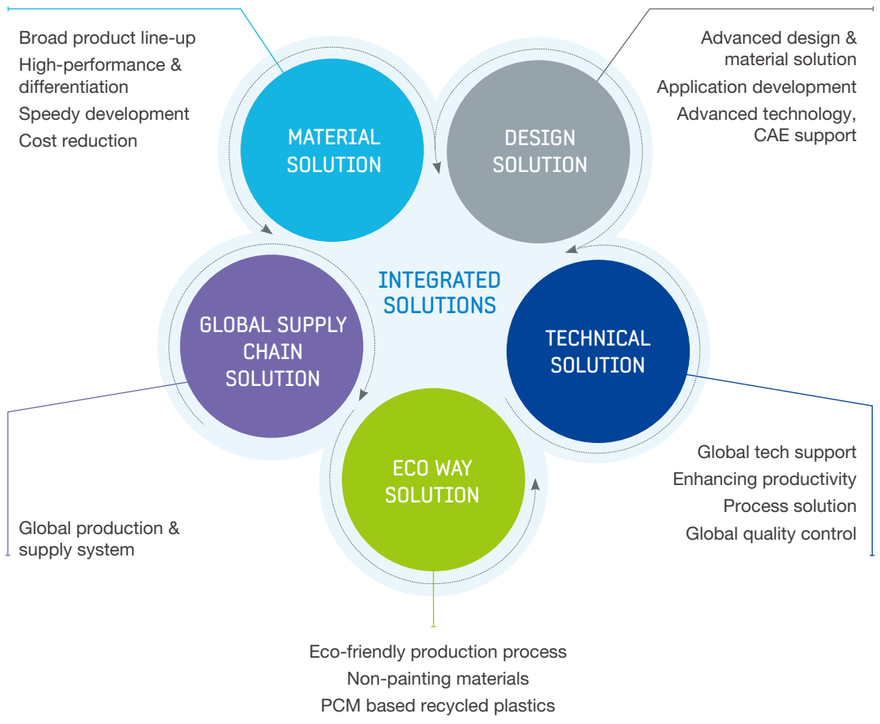
Flame Retardant PC/GF 10% HN-3104



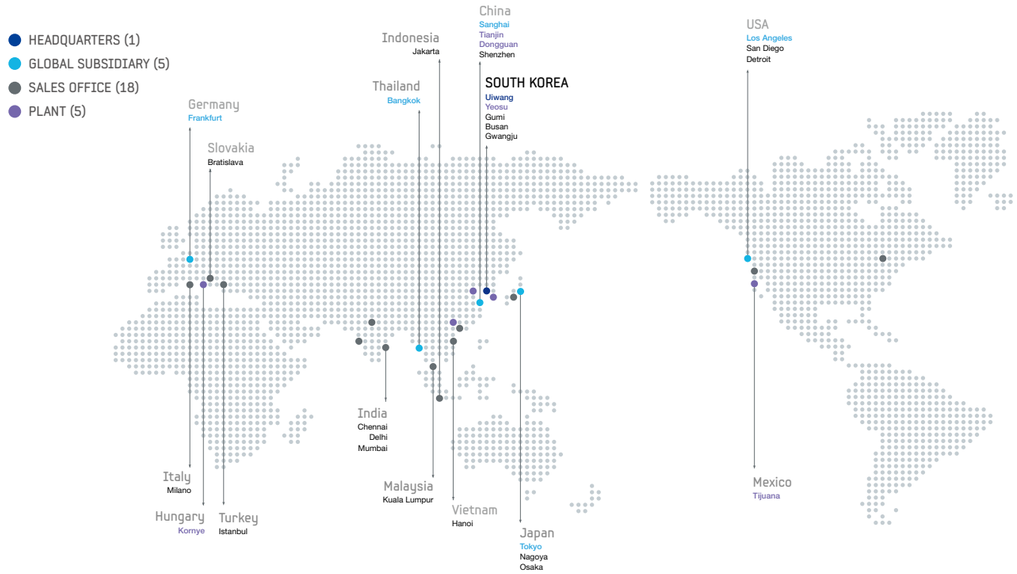
(IEC) Smart Meter

Integrated Solutions

We provide integrated solutions to help you to be more innovative and more efficient. To enhance long-term success of our customers and partners we have developed sustainable and advanced products and solutions.



Global Network



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