

LUPOY

PC, PC Compound, PC Alloy

LUPOY resins are the trade name of LG Chemical's high performance engineering resins based on polycarbonate. A number of specific grades are available, including general grades, reinforced grades, and flame retardant grades. Among the highly desirable characteristics of LUPOY resins are excellent mechanical properties, high heat resistance, high impact strength, and dimensional stability.

Properties	Unit	Test Method (ASTM)	PC											
			Unreinforced (General)											
			GP 1000M	GP 1000ML	GP 1000L	GP 1000SW	GP 1000LG	GP 1000LP	HI 1002ML	SC 1004A	SC 1004AU	SC 1004ML	SR 3108L	
Physical														
Specific gravity	-	D792	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.25
Mold shrinkage	%	D955	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.7	0.5 ~ 0.8	0.4 ~ 0.6	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.7	0.5 ~ 0.8	0.5 ~ 0.8
Mechanical														
Tensile strength	kg/cm ²	D638	630	630	630	620	740	630	580	560	550	570	550	
Tensile elongation	%		130	130	100	130	50	70	120	130	130	130	130	100
Flexural strength	kg/cm ²	D790	1,000	1,000	1,050	1,050	1,200	980	900	900	910	900	900	
Flexural modulus	kg/cm ²		23,000	23,000	24,000	23,000	27,000	21,500	23,000	21,000	21,500	22,000	23,000	
Impact (Notched)	23°C	D256	75	75	65	76	4.3	60	70	68	55	67	60	
	(-30°C)		-	-	-	-	-	-	20	50	25	30	-	
Rockwell hardness	M(R)	D785	118	115	118	118	-	-	117	117	118	117	117	
Thermal														
Melt flow	250°C, 2.16Kgf	D1238	-	-	-	-	-	-	-	-	-	-	-	
	260°C, 5.0Kgf		-	-	-	-	-	-	-	-	-	-	-	
	300°C, 1.2Kgf		11	17	22	13	32	30	13	12	19	12	25	
HDT	18.6Kg/cm ²	D648	130	132	130	132	-	130	130	130	125	130	124	
	4.6Kg/cm ²		-	-	-	-	105	-	-	-	-	-	-	
Flammability														
UL94	class (mm)	UL94	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB (1.5mm, 3.2mm)	HB(1.5mm) V2(3.0mm)	HB (0.7mm)	HB (0.7mm)	HB (0.7mm)	-
Characteristic														
			General Medium viscosity Transparent	General Medium viscosity Transparent	High flow Transparent	High flow	Low Tg High flow	Transparent	Chemical resistance High impact	Chemical/ Impact (at low temp.) resistance	Impact resistance Weatherability	Chemical/ Impact resistance Coloring	Light reflection	

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LUPOY_ PC, PC Compound, PC Alloy

Properties	Unit	Test Method (ASTM)	PC											
			Unreinforced (Flame Retardant)											
			GN 1001F	GN 1002FC	GN 1002FH	GN 1002FL	GN 1006FM	GN 1006FL	GN 1006FT	GN 1008RF	GP 1006FM	GP 1006FL	EF 1006F	
Physical														
Specific gravity	-	D792	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	
Mold shrinkage	%	D955	0.4 – 0.6	0.5 – 0.8	0.5 – 0.8	0.5 – 0.8	0.5 – 0.7	0.5 – 0.7	0.5 – 0.8	0.5 – 0.7	0.5 – 0.7	0.5 – 0.7	0.5 – 0.7	
Mechanical														
Tensile strength	kg/cm ²	D638	730	600	630	620	630	630	630	630	610	630	630	630
Tensile elongation	%		50	80	100	100	100	100	100	100	100	150	150	100
Flexural strength	kg/cm ²	D790	1,190	950	980	940	930	930	930	930	930	930	930	970
Flexural modulus	kg/cm ²		27,000	22,000	22,000	23,400	23,000	23,000	23,000	24,000	23,000	23,000	23,000	
Impact (Notched)	23°C	D256	4	67	72	60	73	65	60	80	73	65	70	
	(-30°C)		-	-	-	-	-	-	-	-	-	-	-	
Rockwell hardness	M(R)	D785	-	-	-	117	118	118	118	-	118	118	118	
Thermal														
Melt flow	250°C, 2.16Kgf	D1238	-	-	-	-	-	-	-	-	-	-	-	
	260°C, 5.0Kgf		-	-	-	-	-	-	-	-	-	-	-	
	300°C, 1.2Kgf		32	16	13	25	10	22	30	18	11	22	12	
HDT	18.6Kg/cm ²	D648	97	115	118	115	130	130	130	101	130	130	130	
	4.6Kg/cm ²		-	-	-	-	-	-	-	-	-	-	-	
Flammability														
UL94	class (mm)	UL94	V-0 (1.0mm, 3.0mm)	V-0 (1.5mm, 2.0mm) 5VB (2.0mm)	V-0 (1.5mm, 2.0mm) 5VB (2.0mm)	V-0 (1.5mm, 2.0mm) 5VB (2.0mm)	V-2 (1.5mm) V-1 (2.0mm) V-0 (2.5mm, 3.0mm)	V-2 (1.5mm) V-1 (2.0mm) V-0 (2.5mm, 3.0mm)	V-2 (1.5mm) V-1 (2.0mm) V-0 (2.5mm, 3.0mm)	V-2 (0.4mm) V-0 (0.6mm, 0.8mm, 3.0mm) 5VA (2.5mm, 3.0mm)	V-0 (1.0mm, 1.5mm, 2.5mm, 3.0mm) 5VA (2.5mm, 3.0mm)	V-0 (1.0mm, 1.5mm, 2.5mm, 3.0mm) 5VA (2.5mm, 3.0mm)	V-0 (1.0mm, 1.5mm, 1.7mm, 3.0mm) 5VB (1.7mm) 5VA (2.5mm)	
Characteristic														
			Translucent	Halogen free	Heat/ Impact resistance Halogen free	High flow Halogen free	Transparent Non-P,Br,Cl	Transparent Non-P,Br,Cl	High flow Transparent Non-P,Br,Cl	High flame retardant Heat resistance	Translucent	Translucent Low viscosity	Translucent Non-P,Br,Cl	

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Application

- **Automotive** Automotive Front Ends, Cluster Pad Main Panel (Instrument Panel), Lower Cluster Pad Main, Console Box, Glove Box Cover, Door, Wheel Cover & Cap, Defroster Grille, Back Mirror HSG
- **Electrical/Electronic** Monitor HSG, Fax HSG, Notebook PC HSG, Cellular Phone Case, Fax & Copy Machine Frame, CD ROM Drive Tray and Main Frame, Relay Case, Connector, Switch
- **Industrial/Mechanical** Helmet, Terminal Box, Electrical Tool HSG, Industrial Bobbin, Distributing Board Box, Power Tool Component, Gears and Cams, Water Meter HSG

PC

Reinforced (General/ Flame Retardant)

SR 3108FC	SR 3108FM	RF 3208F	GP 2100	GP 2200	GP 2300	GP 2102	SC 2152	SC 2202	SC 2302	LS 2302	SC 3154	GN 2101F	GN 2201FM	GN 2301F
1.25	1.25	1.37	1.25	1.35	1.43	1.25	1.29	1.35	1.43	1.46	1.30	1.25	1.35	1.43
0.5~0.8	0.5~0.8	0.5~0.8	0.2~0.4	0.2~0.4	0.1~0.3	0.2~0.4	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	0.4~0.5	0.2~0.4	0.1~0.3	0.1~0.3
550	590	550	800	1,000	1,200	550	550	925	1,100	900	480	780	1,100	1,200
90	120	70	-	-	-	20	10	-	-	-	20	-	-	-
900	950	950	1,200	1,600	1,800	1,100	970	1,500	1,700	1,400	880	1,250	1,700	1,800
23,000	25,000	26,000	36,000	55,000	75,000	33,000	42,000	46,000	70,000	62,000	31,000	36,000	55,000	75,000
50	65	35	7	10	11	28	22	19	18	9	18	8	11	11
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117	117	-	124	122	120	124	122	122	120	-	123	124	122	120
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	15	38	13	9	12	9	5	5	12 (2.16kg)	16	11	8	7	5
120	127	120	140	140	140	137	137	144	140	125	137	138	142	145
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
V-1 (0.85mm) V-0 (1.5mm, 3.0mm)	V-1 (0.85mm) V-0 (1.5mm, 3.0mm)	V-0 (1.6mm)	-	V-2 (1.5mm, NC, BK)	-	HB (0.75mm)	HB (0.75mm, 3.0mm)	HB (0.75mm, 3.0mm)	HB (0.75mm, 3.0mm)	-	HB (1.7mm)	V-0 (1.5mm, 3.0mm) 5VA (3.0mm)	V-0 (1.5mm, 3.0mm) 5VA (3.0mm)	V-0 (1.5mm, 3.0mm) 5VA (3.0mm)
Light reflection Halogen free	Light reflection Halogen free	High reflection Halogen free	General	General	General	Chemical/ Impact resistance Toughness	Chemical/ Impact resistance Toughness	Chemical/ Impact resistance	Chemical/ Impact resistance	Laser active	Low warpage Chemical/ Impact resistance	Halogen free	Halogen free	Halogen free

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Properties	Unit	Test Method (ASTM)	PC			PC/ ABS Alloy								
			Reinforced (General/ Flame Retardant)			Unreinforced (General)								
			GN 2351F	GN 2253F	GN 2403F	EC 5000A	GP 5006B	GP 5006BH	GP 5008A	HG 5000B	HI 5002A	HP 5004	HP 5004A	
Physical														
Specific gravity	-	D792	1.47	1.39	1.53	1.18	1.14	1.14	1.10	1.14	1.11	1.14	1.14	
Mold shrinkage	%	D955	0.2 ~ 0.4	0.1 ~ 0.3	0.1 ~ 0.2	0.4 ~ 0.6	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.5 ~ 0.8	0.4 ~ 0.6	0.5 ~ 0.7	
Mechanical														
Tensile strength	kg/cm ²	D638	1,300	1,100	1,400	500	570	580	400	610	560	560	600	
Tensile elongation	%		-	-	-	40	100	100	-	100	70	100	130	
Flexural strength	kg/cm ²	D790	1,800	1,600	2,200	840	920	930	610	930	860	900	900	
Flexural modulus	kg/cm ²		87,000	75,000	120,000	22,000	23,000	23,000	17,000	23,000	21,000	23,000	21,000	
Impact (Notched)	23°C	kg.cm/cm	D256	8	10	10	45	58	72	46	56	57	60	65
	(-30°C)			-	-	-	-	30	55	-	-	-	45	50
Rockwell hardness	M(R)	D785	-	-	-	-	114	116	-	116	-	111	113	
Thermal														
Melt flow	250°C, 2.16Kgf	g/10min	D1238	-	-	-	9	6	3.3	2	7.5	8	5	4
	260°C, 5.0Kgf			-	-	-	-	-	-	-	-	-	-	-
	300°C, 1.2Kgf			-	-	-	-	-	-	-	-	-	-	-
HDT	18.6Kg/cm ²	°C	D648	140	94	100	-	114	116	91	114	104	112	118
	4.6Kg/cm ²			-	-	-	97	-	-	-	-	-	-	-
Flammability														
UL94	class (mm)	UL94	V-0 (1.5mm, 3.0mm) 5VA (3.0mm)	V-0 (0.8mm, 1.0mm, 3.0mm)	V-0 (0.8mm, 1.0mm, 3.0mm)	HB (1.5mm)	-	-	-	HB (1.5mm)	HB (1.5mm)	HB (0.7mm)	HB (0.7mm)	
Characteristic														
			High stiffness Halogen free	High stiffness Low warpage Good surface	High stiffness Low warpage Good surface	Anti-static	General	High impact Good toughness	General	High gloss High flow	General	High flow Impact resistance	Good weld property Impact resistance	

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PC/ ABS Alloy													
Unreinforced (General)										Unreinforced (Non-Halogen Flame Retardant)			
HR 5006A	HR 5007A	HR 5007AE	HR 5007AS	MP 5000AM	NS 5000	NS 5000C	NS 5000CU	EU 5000G	EU 5000GA	GN 5001RF	GN 5001RFD	GN 5001RFG	GN 5001RFH
1.13	1.14	1.13	1.14	1.10	1.14	1.14	1.15	1.14	1.16	1.18	1.18	1.18	1.19
0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.8	0.5 - 0.7	0.5 - 0.7	0.4 - 0.6	0.4 - 0.6	0.4 - 0.5	0.4 - 0.6
550	580	550	610	470	580	540	540	550	550	600	600	670	640
100	100	100	100	100	100	100	90	100	100	50	50	30	80
850	840	880	940	730	880	870	870	805	800	900	950	970	950
22,500	22,000	23,000	23,000	19,500	23,000	22,000	22,000	21,000	21,500	25,000	26,000	26,000	27,000
65	65	63	60	50	73	70	60	55	60	40	60	45	62
50	50	45	-	-	55	55	20	15	17	-	-	-	-
111	114	115	116	-	-	-	-	-	-	113	-	-	113
4.3	5.3	5.5	6.7	5.5	5.5	4.8	5.1	5	4.4	16	18	20	15
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	113	108	116	98	114	114	115	110	118	-	-	-	-
-	-	-	-	-	-	-	-	-	-	92	94	95	103
HB (1.6mm)	HB (1.6mm)	HB (1.6mm)	-	HB (1.5mm)	-	-	-	-	-	V-0 (1.2mm)	V-0 (1.0mm) V-2 (0.85mm)	V-0 (1.2mm)	V-0 (1.2mm)
High impact High heat resistance	High impact High heat resistance	High impact High heat resistance	High gloss High flow	Metal plating	High flow Heat/ Impact resistance	High flow Heat/ Impact resistance	Lightfast	Lightfast Low gloss	Lightfast Low gloss	General	Impact resistance Good flame retardant	High gloss	High heat resistance Impact resistance

LUPOY_ PC, PC Compound, PC Alloy

Properties	Unit	Test Method (ASTM)	PC/ ABS Alloy												
			Unreinforced (Non-Halogen Flame Retardant)							Unreinforced (Flame Retardant)					
			GN 5001RFJ	GN 5001RFP	GN 5001RFT	EF 5001RFT	GN 5007FL	GN 5008HF	SG 5009F	SG 5009FA	EC 5000AF	GP 5006AF	GP 5008BF		
Physical															
Specific gravity	-	D792	1.18	1.18	1.19	1.19	1.19	1.18	1.18	1.18	1.18	1.17	1.18		
Mold shrinkage	%	D955	0.4 ~ 0.6	0.5 ~ 0.7	0.5 ~ 0.7	0.4 ~ 0.8	0.5 ~ 0.8	0.4 ~ 0.6	0.4 ~ 0.6	0.3 ~ 0.5	0.4 ~ 0.6	0.5 ~ 0.8	0.4 ~ 0.6		
Mechanical															
Tensile strength	kg/cm ²	D638	600	670	580	580	630	600	680	680	530	520	550		
Tensile elongation	%		80	80	20	30	100	50	-	-	50	-	50		
Flexural strength	kg/cm ²	D790	950	1,000	970	950	1,020	860	1,050	1,050	870	800	840		
Flexural modulus	kg/cm ²		27,000	28,000	26,000	25,000	23,500	25,000	28,500	28,500	25,000	22,000	24,000		
Impact (Notched)	23°C	kg.cm/cm	D256	35	12	53	50	75	35	5	8.5	50	45	60	
	(-30°C)			-	-	-	-	-	-	-	-	-	-	-	
Rockwell hardness	M(R)	D785	113	-	-	-	-	113	-	-	-	108	113		
Thermal															
Melt flow	250°C, 2.16Kg _f	g/10min	D1238	14	20	28	20	-	18	15	20	11	6	5	
	260°C, 5.0Kg _f			-	-	-	-	30	-	-	-	-	-	-	-
	300°C, 1.2Kg _f			-	-	-	-	-	-	-	-	-	-	-	-
HDT	18.6Kg/cm ²	°C	D648	-	-	-	-	-	-	-	-	-	104	112	
	4.6Kg/cm ²			92	110	85	94	119	88	90	94	98	-	-	
Flammability															
UL94	class (mm)	UL94	V-0 (1.2mm)	V-0 (1.2mm)	V-0 (1.2mm)	V-0 (1.6mm, 3.2mm)	V-0 (1.5mm)	V-0 (2.5mm)	V-0 (1.6mm)	V-0 (1.2mm)	V-2 (1.6mm)	V-0 (1.7mm) 5VA (3.0mm)	V-0 (1.5mm) 5VA (3.0mm)		
Characteristic															
			High heat resistance Impact resistance	High heat resistance High gloss	High flow High impact High gloss	Eco-label	High heat resistance High impact High flow	Ultra high flow	Scratch resistance High gloss	Scratch resistance High gloss	Anti-static Flame retardant	High flow	Impact resistance		

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PC/ ABS Alloy										Eco Friendly			
Unreinforced (Flame Retardant)	Reinforced (General/ Flame Retardant)									PC		PC/ ABS	
GP 5008BFH	GP 5100	GP 5200	GP 5300	GN 5101RF	GN 5151RFA	GN 5201F	GP 5056F	GP 5106F	GP 5206F	ER 1004A	ER 1008RF	ER 5001RF	ER 5001RFA
1.18	1.20	1.30	1.38	1.21	1.27	1.36	1.20	1.25	1.35	1.20	1.19	1.18	1.18
0.4 ~ 0.6	0.3 ~ 0.4	0.1 ~ 0.3	0.1 ~ 0.3	0.3 ~ 0.5	0.2 ~ 0.4	0.2 ~ 0.4	0.35 ~ 0.55	0.2 ~ 0.4	0.3	0.5 ~ 0.7	0.5 ~ 0.7	0.4 ~ 0.6	0.4 ~ 0.6
560	900	950	1,050	590	600	1,050	715	670	950	540	610	600	620
80	-	-	-	-	-	-	-	-	-	100	100	-	-
910	1,400	1,400	1,700	980	1,050	1,500	1,150	1,100	1,400	850	950	950	990
24,500	49,000	54,000	75,000	31,000	44,000	60,000	34,000	40,000	58,000	21,000	25,000	26,000	26,000
55	10	10	10	25	6.5	11	5.5	7	7	65	80	50	50
-	-	-	-	-	-	-	-	-	-	45	-	-	-
113	-	116	115	-	-	-	-	-	117	-	-	-	-
-	-	-	-	7	8	11	-	4	7	-	-	18	18
22	-	3	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	12	20	-	-
123	121	116	118	-	89	105	110	113	120	130	101	-	-
-	-	-	-	96	-	-	-	-	-	-	-	92	94
V-0 (2.5mm)	-	-	-	V-0 (0.75mm)	V-0 (1.0mm)	V-0 (1.5mm) 5VB (2.0mm)	V-0 (2.5mm)	V-0 (1.7mm)	V-0 (1.7mm)	HB (1.5mm)	V-0 (0.6mm) V-2 (0.4mm)	V-0 (1.2mm)	V-0 (1.2mm)
Impact resistance High heat resistance	Dimensional stability	Dimensional stability High stiffness	High stiffness	High flame retardant Stiffness	High stiffness Halogen free Flame retardant	Halogen free Flame retardant	Flame retardant	Flame retardant	Flame retardant	PCR 30% High impact	EPEAT High flame retardant Impact resistance	EPEAT	EPEAT