

# リサイクル原料適用 自動車外装・内装向け射出成形材料 ハイパーライト®JP

自動車外装、内装向け射出成形用PC/PET系材料です。  
自動車外装用途で多くの市場実績があるバージンPC/PET系タイプの改質・配合技術を活用し、  
リサイクル原料含有率を60～70%まで高めた環境対応グレードです。  
使用済み自動車(ELV)由来のリサイクル原料を適用した材料開発も進めております。

- ◆ 高いリサイクル原料含有率(LCA対応)と物性を両立
- ◆ 低線膨張率による設計自由度向上(Low CTE type)
- ◆ 優れた流動性により、薄肉設計に対応(High flow type)

Properties	Test Methods	Conditions	Units	Material recycle				Virgin	
				ELV-related			ELV -unrelated	High flow type	
				(Developmental) XJP125	(Developmental) XJP126	(Developmental) XJP127	JP-F3155R	(Serial) JP-F3152	(Serial) JP-F3154
				High flow type				High flow type	
<b>Content of Recycled Plastics</b>	–	–	wt%	<b>60</b>	<b>60</b>	<b>60</b>	<b>60</b>	<b>0</b>	<b>0</b>
<b>Content from ELV<sup>1)</sup></b>	–	–	wt%	<b>75</b>	<b>50</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>
Filler Content	ISO 3451-1	–	wt%	17	17	17	17	15	15
Specific Gravity	ISO 1183	23°C	g/cm <sup>3</sup>	1.37	1.37	1.37	1.37	1.35	1.36
Spiral Flow Length	–	280°C•2mmt	mm	505	495	485	500	510	535
Melt Flow Rate	ISO1183	280°C•21.18N	g/10min	38	35	33	33	44	52
Tensile Strength	ISO 527 -1, 2	23°C	MPa	58	58	59	59	65	62
Tensile Strain, Break			%	8	8	8	8	7	5
Flexural Strength	ISO 178	23°C	MPa	98	97	96	101	110	108
Flexural Modulus			MPa	4250	4300	4250	4350	4850	4700
Charpy Impact Strength	ISO 75	Notched, 23°C	kJ/m <sup>2</sup>	5.9	5.7	5.6	5.5	4.5	5.0
		Notched, -30°C		4.7	4.6	4.8	4.2	2.9	2.8
Distortion Temperature under Load	ISO 75	1.8MPa	°C	96	97	96	95	96	–
		0.45MPa		115	114	114	112	116	115
Coefficients of Thermal Expansion (CTE)	ISO 11359-2	MD / TD -30~80°C	X10 <sup>-5</sup> /°C	4.8 / 6.6	4.8 / 6.4	4.8 / 6.4	4.7 / 6.4	4.6 / 6.0	4.6 / 5.8
Mold Shrinkage	–	MD / TD	%	0.2~0.4 /0.3~0.5	0.2~0.4 /0.3~0.5	0.2~0.4 /0.3~0.5	0.2~0.4 /0.3~0.5	0.2~0.4 /0.3~0.5	0.2~0.4 /0.3~0.5
Estimated CO <sub>2</sub> Emission <sup>2)</sup>	–	–	Kg-CO <sub>2</sub> /kg	2.1	2.1	2.1	2.1	5.7	5.7

1) Content of plastics recycled from end-of-life vehicle (ELV) in total amount of recycled plastics contained in each product.

2) CO<sub>2</sub> emissions are estimated using LCI database IDEA Ver 3.3 (2023/04/15) issued by IEDA Lab., The Research Institute of Science for Safety and Sustainability, AIST with some assumptions. Please consider these values as references.

Properties	Test Methods	Conditions	Units	Material recycle				Virgin	
				ELV-related			ELV -unrelated	Virgin	
				High flow type				Standard type	High flow type
				(Developmental) XJP128	(Developmental) XJP129	(Developmental) XJP130	(Developmental) XJP105	(Serial) JP-51000	(Developmental) XJP109
<b>Content of Recycled Plastics</b>	-	-	wt%	70	70	70	70	0	0
<b>Content from ELV<sup>1)</sup></b>	-	-	wt%	70	50	25	0	0	0
Specific Gravity	ISO 1183	23°C	g/cm <sup>3</sup>	1.22	1.23	1.23	1.23	1.22	1.22
Spiral Flow Length	-	280°C•2mmt	mm	520	515	510	510	365	510
Melt Flow Rate	ISO1183	280°C•21.18N	g/10min	30	28	26	32	18	31
Tensile Strength	ISO 527 -1, 2	23°C	MPa	57	58	59	58	59	58
Tensile Strain, Break			%	111	104	87	70	95	113
Flexural Strength	ISO 178	23°C	MPa	85	86	86	86	86	84
Flexural Modulus			MPa	2250	2250	2250	2300	2250	2250
Charpy Impact Strength	ISO 75	Notched, 23°C	kJ/m <sup>2</sup>	13	13	12	12	52	15
		Notched, -30°C		8	7	7	8	23	13
Distortion Temperature under Load	ISO 75	1.8MPa	°C	92	91	90	89	103	92
		0.45MPa		110	109	108	105	126	110
Coefficients of Thermal Expansion (CTE)	ISO 11359-2	MD / TD -30~80°C	X10 <sup>-5</sup> /°C	7.8 / 8.9	7.8 / 8.8	7.8 / 8.8	7.7 / 8.8	7.2 / 7.7	7.8 / 8.9
Mold Shrinkage	-	MD / TD	%	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6
Estimated CO <sub>2</sub> Emission <sup>2)</sup>	-	-	Kg-CO <sub>2</sub> /kg	2.8	2.8	2.8	2.8	6.9	6.5

1) Content of plastics recycled from end-of-life vehicle (ELV) in total amount of recycled plastics contained in each product.

2) CO<sub>2</sub> emissions are estimated using LCI database IDEA Ver 3.3 (2023/04/15) issued by IEDA Lab., The Research Institute of Science for Safety and Sustainability, AIST with some assumptions. Please consider these values as references.

Properties	Test Methods	Conditions	Units	Material recycle					
				ELV-related			ELV-unrelated		
				Wet-heat resistance			Wet-heat resistance		Standard
				Standard type			High flow Type	Standard type	High flow type
(Developmental) XJP141	(Developmental) XJP142	(Developmental) XJP143	(Developmental) XJP111	(Developmental) XJP112	(Developmental) XJP105				
Content of Recycled Plastics	-	-	wt%	70	70	70	70	70	70
Content from ELV <sup>1)</sup>	-	-	wt%	70	50	25	0	0	0
Specific Gravity	ISO 1183	23°C	g/cm <sup>3</sup>	1.22	1.23	1.23	1.23	1.23	1.23
Spiral Flow Length	-	280°C·2mmt	mm	335	325	325	510	340	510
Melt Flow Rate	ISO1183	280°C·21.18N	g/10min	14	13	13	33	13	32
Tensile Strength	ISO 527	23°C	MPa	57	58	58	59	60	58
Tensile Strain, Break	-1, 2		%	115	117	118	75	125	70
Flexural Strength	ISO 178	23°C	MPa	85	84	84	87	87	86
Flexural Modulus			MPa	2200	2300	2200	2300	2300	2300
Charpy Impact Strength	ISO 75	Notched, 23°C	kJ/m <sup>2</sup>	16	14	14	14	16	12
		Notched, -30°C		12	10	10	12	13	8
Distortion Temperature under Load	ISO 75	1.8MPa	°C	98	98	100	89	97	89
		0.45MPa		123	123	123	105	122	105
Coefficients of Thermal Expansion (CTE)	ISO 11359-2	MD / TD -30~80°C	X10 <sup>-5</sup> /°C	7.3 / 7.9	7.2 / 7.7	7.2 / 7.8	8.0 / 8.8	7.2 / 7.7	7.7 / 8.8
Mold Shrinkage	-	MD / TD	%	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6	0.4~0.6 /0.4~0.6
Retention rate of PC-MW After wet-heat test <sup>1)</sup>	-	-	%	81	83	82	88	100	71
Estimated CO <sub>2</sub> Emission <sup>2)</sup>	-	-	Kg-CO <sub>2</sub> /kg	2.9	2.9	2.9	2.8	2.8	2.8

1) Relative molecular weight (MW) of polycarbonate (PC) after the wet-heat test (80°C x 95%RH x 500hr) to one before the test.

2) CO<sub>2</sub> emissions are estimated using LCI database IDEA Ver 3.3 (2023/04/15) issued by IEDA Lab., The Research Institute of Science for Safety and Sustainability, AIST with some assumptions. Please consider these values as references.

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