



Property Table (Glass fiber reinforced polycarbonate)



Features	Basic			Basic			Basic			Flame-retardant		Flame-retardant		Flame-retardant		High Stiffness Flame-retardant		GF reinforced High Stiffness High flow				
	G1910			G1920			G1930			GZ2510		GZ2520		GZ2530		GZ2540		GGK1740				
Properties	Units	Test Method	condition	>PC-GF10<	>PC-GF20<	>PC-GF30<	>PC-GF10<	>PC-GF20<	>PC-GF30<	>PC-GF40<	>PC-GF50<	>PC-GF60<	>PC-GF70<	>PC-GF80<	>PC-GF90<	>PC-GF100<	>PC-GF110<	>PC-GF120<	>PC-GF130<			
Density	g/cm ³	ISO 1183 (JIS K7112)		1.27	1.33	1.42	1.27	1.33	1.42	1.51	1.52	1.53	1.54	1.55	1.56	1.57	1.58	1.59	1.60	1.61		
Water Absorption	%	ISO 62 (JIS K7209)	24h 50%RH	0.15	0.13	0.11	0.15	0.13	0.11	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1		
Fluidity																						
Melt Volume-Flow Rate (MVR)	cm ³ /10min	ISO 1133 (JIS K7210)		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	300°C 1.20kg		
Spiral Flow Length	cm	Idemitsu Method		Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa	Thickness:2mm/Width:10mm Cylinder:280°C/Mold:80°C Inj.Pressure:125MPa		
Mechanical properties																						
Tensile Stress at Yield*1	MPa	ISO 527-1,2 (JIS K7161, 7162)		80	110	130	80	110	130	130	136	142	148	154	160	166	172	178	184	190		
Nominal tensile strain at break*2	%			5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	4		
Flexural Strength	MPa	ISO 178 (JIS K7171)		120	160	180	120	160	180	185	200	205	210	215	220	225	230	235	240	245		
Flexural Modulus	GPa			3.5	5.9	7.9	3.5	5.9	7.9	11.3	12.4	13.5	14.6	15.7	16.8	17.9	19.0	20.1	21.2	22.3		
Charpy Impact Strength	kJ/m ²	ISO 179-1 (JIS K7111)	notched at 23°C	8	13	17	8	13	17	11	13	15	17	19	21	23	25	27	29	31		
			notched at 0°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			notched at -30°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			notched at -50°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Izod Impact Strength	J/m	ASTM D256	notched at 23°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
			notched at 0°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
			notched at -30°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			notched at -50°C	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Rockwell Hardness	—	ISO 2039-2 (JIS K7202-2)	R scale/ M scale	M65	M70	M75	M65	M70	M75	M75	—	—	—	—	—	—	—	—	—	—		
Thermal properties																						
Temperature of deflection under load	°C	ISO 75-1,2 (JIS K7191-1,2)	0.45MPa	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	105		
			1.8MPa	142	145	147	142	145	147	147	98	99	100	101	102	103	104	105	106	107		
Linear Thermal Expansion coefficient	×10 ⁻⁵ /°C	ISO 11359-2		4.5	2.5	2.3	4.5	2.5	2.3	1.9	—	—	—	—	—	—	—	—	—	—		
Mould Shrinkage	%	Idemitsu Method	2mm MD	0.4	0.2	0.15	0.4	0.2	0.15	0.12	0.07	—	—	—	—	—	—	—	—	—		
			2mm TD	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.28	—	—	—	—	—	—	—	—	—	
Optical properties																						
Total Luminous Transmittance	%	ISO 13468-1 (JIS K7361-1)	3mm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Flammability																						
Flammability Rating	mm thickness	UL94	class/mini-thickness	HB/0.7	HB/0.7	HB/0.7	HB/0.40 V-0/1.5	HB/0.40 V-0/1.5	HB/0.40 V-0/1.4	V-0/1.5(BK) V-1/2.0(WT) V-0/3.0(ALL)	V-0/1.0	—	—	—	—	—	—	—	—	—		
Comparative tracking index(CTI)	PLC level	UL746A		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Electrical properties																						
Dielectric Strength	kV/mm	IEC 60243-1 (JIS C2110)		>22	>22	>22	>22	>22	>22	>22	—	—	—	—	—	—	—	—	—	—		
Arc Resistance	PLC level	ASTM D495		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Volume Resistivity	Ω·cm	ASTM D257		1E+16<	1E+16<	1E+16<	1E+16<	1E+16<	1E+16<	1E+16<	—	—	—	—	—	—	—	—	—	—		
Dielectric Constant	—		1MHz	2.95	3.15	3.45	2.95	3.15	3.45	—	—	—	—	—	—	—	—	—	—	—		
Dielectric dissipation Factor	—	IEC 60250	1MHz	0.009	0.009	0.009	0.009	0.009	0.009	0.009	—	—	—	—	—	—	—	—	—	—		
Standard Molding Parameters																						
Cylinder Temperature				260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	260~300°C (Maximum320°C)	270~310°C (Maximum320°C)		
Mold Temperature				80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	80~120°C	50~80°C		
Pre-drying condition				120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	120°C, 5~8hours	80~90°C, 5~8hours		

*1 Y:Yield strength
*2 tB : Nominal tensile strain at break

◇Data in this Catalogue shows sample figures measured under certain specific conditions.
◇Usage of the products in this catalogue does not warrant any successful results of applications of the products for specific usage.
◇In case of the products being used for purpose and usage introduced in this Catalogue, please pay attention not to infringe of industrial property rights (patent, utility model, design, etc.) of third party which may relate to such use. (IDEMITSU SHALL NOT BE LIABLE TO SUCH INFRINGEMENTS.)
◇You should not use the products in medical equipment and medical product applications.
◇Flammability rating in this Catalogue was evaluated with small-scale test method and it is not intended to reflect fire proof performance in case of actual fire.

◇Please verify whether the grade of products to be used for food utensils, cookware or packaging applications supplied by idemitsu will meet the requirement of applicable laws (ex. food sanitation law in Japan, etc.) and ordinances in advance.
◇Please verify whether products using raw materials supplied by Idemitsu with applicable laws and ordinances.
◇Please agree to the quality specification in advance if you purchase our products.
◇Figures of physical characteristics of other producer's resins have been referred from their catalogues and information source thereof.
◇Please note that the content of this Catalogue may be altered from time to time according to the improvement of the products without prior notice.
◇In case of exporting the product, please pay attention to the laws and regulations of chemical substances and other substances in the exporting country.
For inquiries regarding the applicability of our products to individual laws and regulations, please consult our HP contact or sales staff.