

Property Table (Glass fiber reinforced, flame retardant V-0)

Properties	Test Method	condition	Units	C832	S834	S931	S932	EA 522	EA 533	-	-	-	-
ISO Identification Mark				>PS-ST-GF30FR(17)<	>PS-ST-GF30FR(17)<	>PS-ST-GF30FR(17)<	>PS-ST-GF30FR(17)<	>PS-ST-GF20FR(17)<	>PS-ST-GF30FR(17)<				
Physical													
Density	ISO 1183		g/cm ³	1.41	1.42	1.45	1.45	1.32	1.38				
Glass Content			wt%	30	30	30	30	22	30				
Water Absorption	ISO 62	24h 50%RH	%	0.02	0.02	0.02	0.02	0.01	0.01				
Mechanical properties													
Tensile Strength at Break			MPa	115	115	110	110	100	125				
Tensile Modulus	ISO 527		MPa	10,600	10,600	10,500	10,500	8,000	10,700				
Tensile Elongation at Break			%	1.6	1.6	1.5	1.5	2.3	2				
Flexural Strength			MPa	170	170	170	170	155	195				
Flexural Modulus	ISO 178		MPa	10,000	10,000	10,300	10,300	7,500	10,500				
Izod Impact	ISO 180	Notched at 23°C	kJ/m ²	9	9	8	9	11	10				
		Unnotched at 23°C		29	29	26	24	34	33				
Charpy Impact	ISO 179	Notched at 23°C	kJ/m ²	10	10	9	10	12	12				
		Unnotched at 23°C		28	28	28	31	39	42				
Thermal properties													
Temperature of deflection under load	ISO 75 A	1.8MPa		245	245	230	230	230	245				
	ISO 75 B	0.45MPa		265	265	265	265	265	265				
Linear Thermal Expansion coefficient	TMA	Flow direction, -30~30°C	x10 ⁻⁶ mm/mm/°C	20	20	19	18	24	19				
		Cross flow direction, -30~30°C		40	40	42	38	53	39				
Mould Shrinkage	Idemitsu Method	flow direction	%	0.1 - 0.4	0.1 - 0.4	0.1-0.4	0.1-0.4	0.2-0.4	0.1-0.3				
		cross flow direction		0.5 - 0.8	0.5 - 0.8	0.3-0.7	0.3-0.7	0.5-0.7	0.4-0.7				
Flammability													
Flammability	UL 94	HB minimum thickness	mm	-	-	-	-	-	-				
		V-0 minimum thickness		1.5	1.6	0.75	0.8	1.5	1.5				
		5VA minimum thickness		-	-	-	-	2.2	-				
RTI Electrical (Elec)				50	50	130	50	125	125				
RTI Mechanical with impact (Imp)	UL 746B		°C	50	50	120	50	120	120				
RTI Mechanical without impact (Str)				50	50	130	50	120	120				
Comparative Tracking Index (CTI)	IEC 60112, Solution A		PLC level	1 equivalent	0	1	-	1	2				
High Voltage Arc Tracking Rate (HVTR)	UL 746A		PLC level	-	-	3	-	0	0				
Hot Wire Ignition (HWI)	UL 746A	@ 3.0 mm	PLC level	-	-	-	-	0	0				
		@ 1.5 mm		-	-	2	-	1	1				
		@ 0.75 mm		-	-	3	-	-	-				
High Ampere Arc Resistance (HAI)	UL 746A	@ 3.0 mm	PLC level	-	-	-	-	0	0				
		@ 1.5 mm		-	-	0	-	0	0				
		@ 0.75 mm		-	-	0	-	-	-				
Arc Resistance	ASTM D495		PLC level	6 equivalent	6 equivalent	6	-	5	6				
Electrical properties													
Volume Resistivity	IEC 60093		Ohm-cm	>1E+16	>1E+16	>1E+16	>1E+16	>1E+16	>1E+16				
Dielectric Strength	ASTM D149		kV/mm	35	35	35	35	35	31				
Dielectric Constant	IEC 60250	1MHz		3	3	3	3.1	3	3.2				
Dissipation Factor	IEC 60250	1MHz		0.002	0.002	0.002	0.003	0.001	0.002				
Standard Molding Parameters													
Melt Temperature			°C	280 - 310	280 - 310	280 - 310	280 - 310	280 - 310	280 - 310				
Mold Temperature			°C	130 - 155	130 - 155	130 - 155	130 - 155	130 - 155	130 - 155				
Pre-drying				120°C , 3-5hrs	120°C , 3-5hrs	120°C , 3-5hrs	120°C , 3-5hrs	120°C , 3-5hrs	120°C , 3-5hrs				

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◇Data in this Catalogue shows sample figures measured under certain specific conditions.

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◇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.