

SUSTEEL® PPS Characteristics (General grade)



Type	Grade	Code ¹⁾	ISO identification Mark	Grade Descriptions	Mechanical property										Thermal property				Electrical property			Flammability	Moldability		
					Density g/cm ³	Water absorption 24h %	Mold shrinkage		Tensile strength MPa	Tensile strain at break %	Tensile weld strength MPa	Flexural strength MPa	Flexural modulus GPa	Charpy impact strength (notched) kJ/m ²	Rockwell hardness -	Temperature of deflection under load		Coefficient of linear thermal expansion		Electric strength MV/m	Arc resistance s	Relative permittivity (1MHz)	Flammability class /mm thickness	Melt Flow Rate g/10min	Bar flow length (t=1mm) mm
							MD %	TD %								0.45MPa °C	1.82MPa °C	MD *1E ⁻⁵ /K	TD *1E ⁻⁵ /K						
					ISO 1183	ISO 62	TOSOH	TOSOH	ISO 527-1,2	ISO 527-1,2	ASTM D638	ISO 178	ISO 178	ISO 179-1	ISO 2039-2	ISO 75-1,2	ISO 75-1,2	ISO 11359-2	ISO 11359-2	IEC 60243-1	ASTM D495	IEC 60250	UL 94	ISO 1133	TOSOH
Glass Fiber Reinforced																									
	P-13	1 1	>PPS-GF15<	toughness	1.46	0.02	0.5	1.0	105	1.5	73	155	7	3	R122	> 260	225	3.5	5.1	16	95	3.1	Equivalent V-0/0.38	23	190
	GS-20	3 2	>PPS-GF20<	toughness	1.49	0.02	0.4	0.9	125	1.7	70	195	8.5	6.5	R123	> 260	240	3.0	4.8	16	120	3.7	Equivalent V-0/0.38	15	160
	GS-30	3 1 0 2 3 2 0 2	>PPS-GF30<	toughness, standard	1.58	0.02	0.3	0.8	170	1.7	73	255	12	8.5	R123	> 260	> 260	2.6	3.5	16	35	3.9	V-0/0.75	14	140
	GS-30	3 1 A 5 3 2 A 5	>PPS-GF30<	toughness, low flash	1.58	0.02	0.3	0.8	170	1.6	65	255	12	7.5	R123	> 260	> 260	2.6	3.5	16	35	3.9	V-0/0.75	30	200
	GS-30	3 1 4 4 3 2 4 4	>PPS-GF30<	toughness, low flash, high flow, superior molding	1.58	0.02	0.3	0.8	170	1.8	63	255	12	7.5	R123	> 260	> 260	2.6	3.5	16	35	3.9	V-0/0.75	30	180
	GS-40	1 1 1 2	>PPS-GF40<	standard	1.66	0.02	0.3	0.7	165	1.5	45	250	14.5	10	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	45	180
	GS-40	1 1 A 3 1 2 A 3	>PPS-GF40<	standard, low flash	1.66	0.02	0.3	0.7	170	1.5	53	270	14.5	9.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	22	170
	GS-40	2 1 A 5 2 2 A 5	>PPS-GF40<	high flow, low flash	1.66	0.02	0.3	0.7	155	1.2	38	235	14	10	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	45	220
	GS-40	2 2 0 8	>PPS-GF40<	ultrahigh flow	1.66	0.02	0.3	0.7	115	0.9	30	200	14	9.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	300	380
	GS-40	3 1 0 2 3 2 0 2	>PPS-GF40<	toughness, standard	1.66	0.02	0.3	0.7	180	1.7	70	265	14.5	9.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	22	140
	GS-40	3 1 0 3	>PPS-GF40<	toughness, superior molding	1.66	0.02	0.3	0.7	180	1.6	70	270	14.5	8.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	30	160
	GS-40	3 1 A 4 3 2 A 4	>PPS-GF40<	toughness, low flash	1.66	0.02	0.3	0.7	185	1.6	53	270	14.5	8.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	25	170
	GS-40	3 1 6 5	>PPS-GF40<	toughness, high flow, superior molding	1.66	0.02	0.3	0.7	175	1.4	50	260	14.5	8.5	R123	> 260	> 260	2.2	3.1	16	35	3.9	V-0/0.38	75	200
	P-28	1 1 1 2	>PPS-GF50<	toughness, stiffness	1.76	0.02	0.3	0.7	170	1.3	55	285	18	9.5	R123	> 260	> 260	2.1	2.9	15	45	4.2	V-0/0.75	20	140
Glass Fiber and Mineral Reinforced																									
	G-10	1 1 1 2	>PPS-(GF+MD)65<	standard	1.96	0.02	0.3	0.6	125	0.9	35	215	19	7	R121	> 260	> 260	2.0	3.4	14	120	4.9	V-0/0.75	95	130
	G-10	1 1K 1 2K	>PPS-(GF+MD)65<	standard, high strength	1.96	0.02	0.3	0.6	150	1.1	40	230	18.5	7.5	R121	> 260	> 260	2.0	3.5	14	120	4.9	V-0/0.75	90	130
	G-10	1 2 F 1 2 FN	>PPS-(GF+MD)65<	standard, moldable at low temperature	1.96	0.02	0.3	0.6	100	0.8	40	190	19	6.5	R121	> 260	> 260	2.0	3.5	14	120	4.9	V-0/0.75	100	120
	P-01	1 1 1 2	>PPS-(GF+MD)55<	toughness	1.83	0.02	0.3	0.7	135	1.4	50	240	16	7.5	R122	> 260	> 260	2.1	3.1	14	95	4.7	V-0/0.75	60	130
	P-30	1 1 1 2	>PPS-(GF+MD)50<	toughness	1.76	0.02	0.3	0.6	170	1.5	55	260	16	7.5	R122	> 260	> 260	2.2	3.3	14	45	3.8	V-0/0.86	25	120
	P-42	1 1 1 2	>PPS-(GF+MD)60<	dimensional stability, for capacitor cap	1.86	0.02	0.3	0.6	85	1.5	53	170	12	3.5	R122	> 260	255	2.6	2.9	14	60	4.3	V-0/0.75	25	80
	GM-70	1 2	>PPS-(GF+MD)70<	low stress relaxation	2.02	0.02	0.3	0.6	100	0.8	40	210	19.5	6	R122	> 260	> 260	2.0	2.6	12	180	5.4	V-0/0.75	60	100
	GE-60	1 2	>PPS-(GF+MD)65<	arc-resistance, Comparative tracking Index(CTI)	1.99	0.02	0.3	0.6	95	0.5	23	180	22	6.5	R118	> 260	> 260	2.2	3.2	14	180	4.5	V-0/0.75	30	110

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The figures are listed in the table, based on a variety of standard test to measure the value or even typical, is not guaranteed value.

Tosoh Corporation Polymers Division

Address : Shiba-Koen First Bldg. 3-8-2, Shiba, Minato-Ku, Tokyo 105-8623, Japan

Phone : +81-3-5427-5147 Fax : +81-3-5427-5210

E-mail : info@tosoh.co.jp

SUSTEEL® PPS Characteristics (Special grade)



Type	Grade	Code ¹⁾	ISO identification Mark	Grade Descriptions	Mechanical property									Thermal property				Electrical property			Flammability	Moldability			
					Density g/cm3	Water absorption 24h %	Mold shrinkage		Tensile strength MPa	Tensile strain at break %	Tensile weld strength MPa	Flexural strength MPa	Flexural modulus GPa	Charpy impact strength (notched) kJ/m2	Rockwell hardness	Temperature of deflection under load		Coefficient of linear thermal expansion		Electric strength MV/m	Arc resistance s	Relative permittivity (1MHz)	Flammability class /mm thickness	Melt Flow Rate g/10min	Bar flow length (t=1mm) mm
							MD %	TD %								0.45MPa °C	1.82MPa °C	MD *1E ⁻⁵ /K	TD *1E ⁻⁵ /K						
ISO	ISO	TOSOH	TOSOH	ISO	ISO	ASTM	ISO	ISO	ISO	ISO	ISO	ISO	ISO	ISO	ISO	ISO	IEC	ASTM	IEC	UL	ISO	TOSOH			
Superior Metal Bonding																									
	SGX-115	5 2 A	>PPS-I-GF15<	superior metal bonding, impact strength	1.36	0.05	0.6	0.9	95	2.7	50	150	5	16	R118	>260	235	6.1	7.1	16	60	3.5	HB/0.4	25	240
	SGX-120	1 2	>PPS-I-GF20<	superior metal bonding, high flow, heat cycle resistance	1.40	0.06	0.3	0.9	120	2.1	55	170	6.5	8.5	R112	>260	220	3.1	5.0	16	120	3.6	V-2/1.0	90	310
	SGX-140	5 2	>PPS-I-GF40<	superior metal bonding, high strength	1.60	0.02	0.3	0.7	170	1.8	50	240	12	13.5	R117	>260	>260	2.3	3.5	15	120	3.9	HB/0.4 V-1/2.0	25	165
	SGX-150	1 2 B	>PPS-I-GF50<	superior metal bonding, dimensional stability, stiffness	1.71	0.04	0.2	0.3	180	1.3	35	270	16	15	R118	>260	>260	1.8	2.1	13	120	4.3	-	60	255
Tracking Resistance																									
	TR-65	1 2	>PPS-(GF+MD)65<	CTI rank 0	1.89	0.02	0.3	0.4	90	0.5	30	150	18.5	5.5	R123	>260	>260	2.1	3.1	16	180	5.8	Equivalent V-0/0.75	60	110
	TR-60	E 2	>PPS-I-(GF+MD)60<	CTI rank 0, toughness	1.69	0.03	0.3	0.6	95	2.2	25	160	8.5	8.6	R119	>260	240	2.3	3.7	16	165	5.1	Equivalent V-0/0.75	3	105
Thermal Conductivity																									
	TC-70	1 2	>PPS-(GF+MD)70<	thermal conductivity, high strength, Insulation	2.06	0.01	0.25	0.3	80	0.3	19	160	24	5.5	-	>260	>260	1.7	1.9	18.5	200	5.4	-	23	135
	TCX-150	1 2		thermal conductivity, high strength, Electrical conductivity	1.70	0.03	0.05	0.6	100	0.2	24	145	36	2.2	R115	>260	>260	0.5	1.8	-	-	-	5VA/2.0, V-0/1.5	30	135
	TCX-250	1 2		thermal conductivity, Electrical conductivity	1.82	0.01	0.03	0.5	75	0.1	17	130	42	2	R120	>260	>260	0.4	1.3	-	-	-	Equivalent V-0/2.0	0.5	65
Super Toughness																									
	BGX-130	1 2	>PPS-I-GF30<	super toughness, superior metal bonding	1.50	0.05	0.3	0.9	140	2.2	60	210	9	12	R118	>260	253	2.7	4.6	16	120	3.6	V-0/1.5	40	210
	BGX-545	1 2	>PPS-I-(GF+MD)45<	heat cycle resistance, high flow, low warpage	1.65	0.03	0.2	0.4	135	1.7	48	210	13	8	R119	>260	255	2.0	2.6	15	100	3.9	V-0/1.5	80	210
Superior Epoxy Bonding																									
	P-60	1 2	>PPS-(GF+MD)55<	Epoxy adhesion improved	1.82	0.02	0.3	0.7	135	0.9	30	220	17	8	R121	>260	255	2.0	3.4	12	62	4.8	V-0/0.87	60	150
	P-68	1 2	>PPS-GF45<	Epoxy adhesion improved, high strength	1.72	0.02	0.3	0.8	150	1.0	43	240	16.5	10	R123	>260	>260	2.2	2.8	15	35	3.8	V-0/0.75	60	180
Low Wear																									
	F	1 1	>PPS+PTFE<	low wear	1.53	0.02	1.2	1.4	30	1.0	35	70	3	1.2	R111	190	110	5.5	5.8	17	35	2.8	V-0/1.5	90	320
	F-2	1 1	>PPS+PTFE-GF10<	low wear	1.58	0.01	0.5	1.1	65	1.3	30	105	5	4	R120	>260	220	4.0	4.6	18	40	3.1	V-0/0.75	45	270
	F G	1 1	>PPS+PTFE-GF30<	low wear	1.68	0.02	0.3	0.9	125	1.2	30	190	11	7.5	R120	>260	>260	2.3	3.5	16	100	3.3	V-0/0.75	40	230
	F G	2 1	>PPS+PTFE-GF30<	low wear, high strength	1.68	0.02	0.3	0.9	150	1.8	40	240	11.5	8.5	R120	>260	>260	2.3	3.2	16	100	3.3	V-0/0.75	30	190
	FC-30	1 2	>PPS+PTFE-(CF+MD)30<	low wear, high flow	1.52	0.02	0.4	0.9	130	0.7	32	235	17	5.2	R119	>260	>260	1.5	2.6	-	-	-	Equivalent V-0/1.0	225	300
Electric Conductivity																									
	CH-30	3 2	>PPS-CF30<	electric conductivity, stiffness, toughness	1.44	0.02	0.2	0.5	205	0.9	65	300	22.5	4.5	R123	>260	>260	1.3	2.0	-	-	-	V-0/0.75	30	160
	P-62	1 2	>PPS-(CF+GF)30<	antistatic	1.45	0.14	0.3	0.7	115	1.4	55	165	9	2.6	R123	>260	245	2.7	4.6	-	-	-	Equivalent V-0/0.75	40	170

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Address : Shiba-Koen First Bldg. 3-8-2, Shiba, Minato-Ku, Tokyo 105-8623, Japan
 Phone : +81-3-5427-5147 Fax : +81-3-5427-5210
 E-mail : info@tosoh.co.jp