

PARAPET® Property Comparison Table

Test Information						Standard Grades				Optical Grades			Impact-Modified Grades					
Category	Property	ISO No.	JIS No.	Test Conditions	Unit	GF	G	EH-DS	HR-L	GH S	GH-K	HR-S	GR04940	GR04970	GR00100	GR01240	GR01270	GR-H60
						High Flow	General Purpose	Extrusion	Heat Resistant	Light Guide	High Flow	Heat Resistant	General	General	General	Heat Resistant	Heat Resistant	Good Flow
Optical Properties	Total Light Transmittance	ISO 13468-1	JIS K 7361-1	3mm	%	≥92	≥92	≥92	≥92	≥92	≥92	≥92	≥92	≥91	≥91	≥92	≥91	≥91
Optical Properties	Haze	ISO 14782	JIS K 7136	3mm	%	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤1.0	≤1.5	≤1.8	≤1.0	≤1.5	≤1.5
Optical Properties	Refractive Index	ISO 5725-2	JIS K 7142	nd	-	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Mechanical Properties	Tensile Modulus	ISO 527-2	JIS K 7161-2	1A/1	MPa	3300	3300	3300	3300	3300	3300	3300	2500	2100	1700	2500	2100	1600
Mechanical Properties	Tensile Strength	ISO 527-2	JIS K 7161-2	1A/5	MPa	67	70	75	77	62	60	77	59	48	40	62	50	38
Mechanical Properties	Elongation at Break	ISO 527-2	JIS K 7161-2	1A/5	%	3	4	6	5	2	2	5	17	50	60	15	40	61
Mechanical Properties	Flexural Modulus	ISO 178	JIS K 7171	-	MPa	3300	3300	3100	3300	3300	3300	3300	2600	2200	1800	2600	2200	1700
Mechanical Properties	Flexural Stress at Break	ISO 178	JIS K 7171	-	MPa	108	110	125	114	90	80	114	95	78	62	96	79	61
Mechanical Properties	Charpy Impact Strength / Unnotched	ISO 179	JIS K 7111	1eU	kJ/m ²	19	20	23	22	20	19	22	56	71	91	50	73	101
Mechanical Properties	Charpy Impact Strength / Notched	ISO 179	JIS K 7111	1eA	kJ/m ²	1.3	1.3	1.4	1.4	1.3	1.2	1.4	3	4.5	6.5	3	4.5	5
Mechanical Properties	Rockwell Hardness	ISO 2039-2	JIS K 7202-2	M Scale	-	94	98	98	103	100	97	103	84	68	44	85	68	39
Thermal Properties	Heat Deflection Temperature / Annealed	ISO 75-2	JIS K 7191-2	1.80MPa	° C	86	93	95	101	95	95	101	91	86	83	95	90	77
Thermal Properties	Vicat Softening Temperature	ISO 306	JIS K 7206	B50	° C	92	99	100	110	104	103	110	97	93	90	102	97	88
Thermal Properties	MFR	ISO 1133-1	JIS K 7210-1	230°C 37.3N	g/10min	15	8	1.3	2.4	10	22	2.4	5	3	1.5	1.8	1.7	3
Thermal Properties	Specific Heat Capacity	-	JIS K 7123	-	J/(g·°C)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Thermal Properties	Coefficient of Linear Thermal Expansion	-	JIS K 7197	-	1/°C	6×10 ⁻⁵	6×10 ⁻⁵	6×10 ⁻⁵	6×10 ⁻⁵	6×10 ⁻⁵	6×10 ⁻⁵	6×10 ⁻⁵	9×10 ⁻⁵	10×10 ⁻⁵	11×10 ⁻⁵	9×10 ⁻⁵	10×10 ⁻⁵	11×10 ⁻⁵
Thermal Properties	Thermal Conductivity	ISO 8302	JIS A 1412-1	-	W/(m·°C)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Electrical Properties	Surface Resistivity	-	JIS K 6911	-	Ω	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶	>10 ¹⁶
Electrical Properties	Volume Resistivity	-	JIS K 6911	-	Ωm	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹³
Electrical Properties	Dielectric Strength	-	JIS K 6911	4kV/sec	MV/m	20	20	20	20	20	20	20	20	20	20	20	20	20
Electrical Properties	Relative Permittivity	-	JIS K 6911	60Hz	-	4	4	4	4	4	4	4	4	4	4	4	4	4
Other Properties	Density	ISO 1183-1	JIS K 7112-1	-	g/cm ³	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.18	1.17	1.16	1.18	1.17	1.16
Other Properties	Water Absorption (23° C)	ISO 1183-1	JIS K 7209	24 hr	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Properties	Molding Shrinkage	ISO 294-4	JIS K 7152-4	-	%	0.2~0.6	0.2~0.6	0.2~0.6	0.2~0.6	0.2~0.6	0.2~0.6	0.2~0.6	0.4~0.8	0.4~0.8	0.4~0.8	0.4~0.8	0.4~0.8	0.4~0.8
Other Properties	Flammability Classification	UL94	-	-	class	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB	HB
Other Properties	Burning Rate	UL94	-	-	cm/min	3	3	3	3	3	3	3	3	3	3	3	3	3

* Typical value for Clear