

Physical Properties of SUMIPEX[®] Optical Grade

Item	Test Method		Unit	Optical Grade
	ISO	JIS		EXN
Optical Properties				
Reflectic Index	ISO 489	JIS K7142	-	1.49
Total Light Transmission	ISO 13468-1	JIS K7361-1	%	92
Haze	ISO 14782	JIS K7136	%	<0.5
Thermal Properties				
Coeffecient of Linear Expansion	ISO 11359-2	JIS K7197	1/°C	7 X 10 ⁻⁵
Vicat Softening Temperature (VST)	ISO 306	JIS K7206 (B50)	°C	104
Deflection Temp. Under Load 1.82 MPa (annealed)	ISO 75-2	JIS K7191 (Af method)	°C	99
Melt Flow Rate (MFR) 230°C, 37.3N (3.8kgf)	ISO 1133	D-1238	g/10min	1.5
Mechanical Properties				
Tensile Strength at break	ISO 527-2	JIS K7162	MPa	74
Tensile Strain at break	ISO 527-2	JIS K7162	%	5
Flexural Strength	ISO 178	JIS K7171	MPa	120
Flexural Modulus	ISO 178	JIS K7171	MPa	3100
Charpy Impact Strength (notched)	ISO 179-1	JIS K7111	KJ/m ²	1.4
Rockwell Hardness Scale M	ISO 2039-2	JIS K7202	-	100
Electrical Properties				
Surface Resistivity	IEC 60093	JIS K6911	Ω	> 10 ¹⁶
Volume Resistivity	IEC 60093	JIS K6911	Ω cm	> 10 ¹⁵
Insulation Resistance	IEC 60167	JIS K6911	Ω	> 10 ¹⁵
Dielectric Strength	IEC 60243-1	JIS K6911	KV/mm	20
Dielectric Constant (1 MHz)	IEC 60250	JIS K6911	-	3.1
Other Properties				
Specific Gravity	ISO 1183	JIS K7112 (A method)	-	1.2
Mold Shrinkage	ISO 294-4	ASTM D-955	%	0.2-0.6
Water Absorption	ISO 62	JIS K7209	%	0.3
Flammability	UL 94		-	HB

The above data are typical laboratory values and are intended to serve as guides only.