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ACRYLIC RESIN

## Physical Properties of SUMIPEX Acrylic Molding Compound

Item	Test method	Unit	High flow grade				Heat resistant grade				Optical grade		Impact resistant grade						
			LG35	LG21	LG2	LG	EX	MM	MH	MHF	MGSS	MG5	HT20Y	HT25X	HT50Y	HT55Y	HT03Y	HT01X	HT013E
Specific gravity	JIS K7112 (A method)	-	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.19	1.18	1.18	1.17	1.17	1.15	1.15	1.13
Optical Properties																			
Refractive index	JIS K7105	-	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	1.49	1.49	1.49	1.49
Total light transmisson (Tt)	JIS K7105 (A method)	%	93	93	93	93	93	93	93	93	93	93	93	93	92	92	91	91	91
Haze	JIS K7105	%	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	1.0	1.5	1.5	2.0	2.0	2.0
Thermal Properties																			
Coefficient of linear expansion	ASTM D696	cm/cm/	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	7X10 <sup>-5</sup>	8X10 <sup>-5</sup>	8X10 <sup>-5</sup>	9X10 <sup>-5</sup>	9X10 <sup>-5</sup>	8X10 <sup>-5</sup>
Vicat softening point	JIS K7206		89	98	95	96	104	108	109	111	106	107	89	108	92	103	93	97	99
Deflection temperature under load (after annealing, VST (25±3), 4Hrs.) 181.3N/cm <sup>2</sup> (18.5kgf/cm <sup>2</sup> )	JIS K7207 (A method)		82	92	90	91	99	100	101	102	96	99	80	99	84	94	85	87	95
Melt flow rate 230 37.3N (3.80kgf)	JIS K7210	g/10min	35	21	15	10	1.5	0.6	2	2	2	5	24	2	14	2	4	1.9	4
Mechanical Properties																			
Tensile strength	JIS K7113	MPa	64	55	68	72	74	76	76	76	63	72	57	67	49	56	37	38	56
Tensile elongation	JIS K7113	%	6	5	7	10	14	18	13	12	5	10	22	27	47	50	90	90	40
Bending strength	JIS K7203	MPa	103	100	110	115	120	120	120	120	94	115	92	107	80	90	61	64	95
Young's modulus in flexure	JIS K7203	MPa	2900	3000	3100	3100	3200	3200	3200	3200	3200	3200	2600	2800	2300	2500	1700	1800	2300
Flexural rigidity	JIS K7203	%	3	4	5	6	8	8	7	7	4	7	>8	>8	>8	>8	>8	>8	>8
Charpy impact strength (with notch)	JIS K7110	KJ/m <sup>2</sup>	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.3	1.4	1.6	1.8	3.5	3.8	5.2	5.6	7.0
Rockwell hardness	JIS K7202	M scale	86	88	94	94	100	100	100	100	95	95	80	90	65	75	50	50	65
Electrical Properties																			
Surface resistivity	JIS K6911	Ω	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>	>10 <sup>16</sup>
Volume resistivity	JIS K6911	Ω·cm	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>
Insulation resistance	JIS K6911	Ω	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>	>10 <sup>15</sup>
Voltage resistance 20 60% 1kHz	JIS K6911	KV/min	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dielectric constant	JIS K6911		3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Dielectric loss tangent	JIS K6911		0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
Other Properties																			
Molding shrinkage	ASTM D955	%	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	0.2~0.6	0.2~0.6	0.2~0.6	0.4~0.7	0.4~0.7	0.4~0.7	0.4~0.7	0.4~0.7	0.4~0.7	0.4~0.7
Water absorption	JIS K7209	%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.2
Burning rate	ASTM D63	cm/min	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3