Product Comparison

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Technical Data

Product Description	
SUMIPEX® LG2	SUMIPEX general-purpose grades can be classified into two basic categories; good flow and heat resistant types. Each grade is available in pellet form. Bead form is available for some grades
Generic Acrylic (PMMA)	This data represents typical values that have been calculated from all products classified as: Generic Acrylic (PMMA) This information is provided for comparative purposes only.

General	SUMIPEX® LG2	Generic Acrylic (PMMA)
Manufacturer / Supplier	• Sumitomo Chemical Co., Ltd.	• Generic
Generic Symbol	• Acrylic (PMMA)	• Acrylic (PMMA)
Material Status	• Commercial: Active	• Commercial: Active
Literature [1]	• Processing - Injection Molding (English) • Technical Datasheet - Chemical Resistance (English) • Technical Datasheet (English)	--
UL Yellow Card [2]	• E54705-245053 • E202194-227959	--
Search for UL Yellow Card	• Sumitomo Chemical Co., Ltd. • SUMIPEX®	--
Availability	• Asia Pacific • Europe • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Features	• Good Flow	--
Uses	• Industrial Applications • Stationary Supplies	--
UL File Number	• E54705B	--
Forms	• Pellets	--
Processing Method	• Injection Molding	--
Also Available In	--	• Asia Pacific • Latin America • North America

Physical	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Density / Specific Gravity				
-- [4]	1.19	--	g/cm³	JIS K7112
--	--	1.13 to 1.19	g/cm³	ASTM D792
--	--	1.16 to 1.19	g/cm³	ISO 1183
Apparent (Bulk) Density	--	0.65 to 0.71	g/cm³	ASTM D1895
Melt Mass-Flow Rate (MFR)				
230°C/3.8 kg	15	--	g/10 min	JIS K7210
230°C/3.8 kg	--	0.50 to 6.5	g/10 min	ASTM D1238
230°C/3.8 kg	--	0.30 to 6.3	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/3.8 kg)	--	0.80 to 21	cm³/10min	ISO 1133
Spiral Flow	--	12.2 to 38.4	cm	

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Physical	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Molding Shrinkage				
Flow	0.20 to 0.60	0.40 to 0.61	%	ASTM D955
--	--	0.40 to 0.61	%	ISO 294-4
Water Absorption				
24 hr	0.30	--	%	JIS K7209
24 hr	--	0.30 to 0.40	%	ASTM D570
24 hr, 23°C	--	0.30	%	ISO 62
Saturation, 23°C	--	0.30 to 3.0	%	ISO 62
Equilibrium	--	0.30	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	0.30 to 0.37	%	ISO 62

Mechanical	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Tensile Modulus				
--	--	1310 to 3800	MPa	ASTM D638
--	--	3150 to 3330	MPa	ISO 527-1
Tensile Strength				
Yield	--	44.0 to 73.5	MPa	ASTM D638
Yield	--	41.0 to 77.0	MPa	ISO 527-2
Break	--	37.0 to 70.6	MPa	ASTM D638
Break	--	36.5 to 78.5	MPa	ISO 527-2
--	68.0	--	MPa	JIS K7113
--	--	37.1 to 76.8	MPa	ASTM D638
--	--	6.67 to 85.0	MPa	ISO 527-2
Tensile Elongation				
Yield	--	3.0 to 12	%	ASTM D638
Yield	--	3.9 to 5.1	%	ISO 527-2
Break	7.0	--	%	JIS K7113
Break	--	2.4 to 6.8	%	ASTM D638
Break	--	2.0 to 6.7	%	ISO 527-2
Nominal Tensile Strain at Break	--	6.5 to 48	%	ISO 527-2
Flexural Modulus				
--	3100	--	MPa	JIS K7203
--	--	1700 to 3510	MPa	ASTM D790
--	--	1.50 to 4100	MPa	ISO 178
Flexural Strength				
--	110	--	MPa	JIS K7203
--	--	46.7 to 130	MPa	ASTM D790
--	--	51.9 to 130	MPa	ISO 178
Yield	--	57.8 to 136	MPa	ASTM D790
Break	--	70.8 to 104	MPa	ASTM D790
Compressive Stress	--	41.0 to 117	MPa	ISO 604
Flexural Rigidity	5.0	--	%	JIS K7203

Impact	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Charpy Notched Impact Strength				
--	1.4	--	kJ/m²	JIS K7110
--	--	1.2 to 3.0	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	--	16 to 24	kJ/m²	ISO 179
Notched Izod Impact				
--	--	14 to 62	J/m	ASTM D256
--	--	1.7 to 3.3	kJ/m²	ISO 180
Unnotched Izod Impact	--	16 to 1300	J/m	ASTM D4812
Gardner Impact	--	0.339 to 2.88	J	ASTM D3029
Gardner Impact	--	0.226 to 0.390	J	ASTM D5420
Hardness	**SUMIPEX® LG2**	**Generic Acrylic (PMMA)**	**Unit**	**Test Method**
Rockwell Hardness				
--	--	59 to 105		ASTM D785
M-Scale	94	--		JIS K7202
--	--	71 to 102		ISO 2039-2
Ball Indentation Hardness	--	83.0 to 199	MPa	ISO 2039-1
Thermal	**SUMIPEX® LG2**	**Generic Acrylic (PMMA)**	**Unit**	**Test Method**
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	91.8 to 92.6	°C	ASTM D648
0.45 MPa, Unannealed	--	91.4 to 107	°C	ISO 75-2/B
0.45 MPa, Annealed	--	80.6 to 113	°C	ASTM D648
0.45 MPa, Annealed	--	82.0 to 117	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	71.7 to 104	°C	ASTM D648
1.8 MPa, Unannealed	--	73.9 to 103	°C	ISO 75-2/A
1.8 MPa, Annealed [5]	90.0	--	°C	JIS K7207
1.8 MPa, Annealed	--	75.7 to 108	°C	ASTM D648
1.8 MPa, Annealed	--	80.3 to 110	°C	ISO 75-2/A
Glass Transition Temperature				
--	--	57.8 to 122	°C	ISO 11357-2
--	--	88.0 to 118	°C	DSC
Vicat Softening Temperature				
--	95.0	--	°C	JIS K7206
--	--	85.2 to 117	°C	ASTM D1525
--	--	84.7 to 118	°C	ISO 306
CLTE - Flow				
--	7.0E-5	5.9E-5 to 8.0E-5	cm/cm/°C	ASTM D696
--	--	7.1E-5 to 7.2E-5	cm/cm/°C	ASTM E831
--	--	7.0E-5 to 1.1E-4	cm/cm/°C	ISO 11359-2
Specific Heat	--	1500 to 2110	J/kg/°C	ASTM C351
Thermal Conductivity				
--	--	0.19 to 0.20	W/m/K	ASTM C177
--	--	0.18	W/m/K	ISO 8302

Electrical	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Surface Resistivity				
--	> 1.0E+16	--	ohms	JIS K6911
--	--	1.0E+9 to 1.0E+16	ohms	ASTM D257
--	--	1.0E+14 to 1.0E+16	ohms	IEC 60093
Volume Resistivity				
--	> 1.0E+15	--	ohms·cm	JIS K6911
--	--	5.0E+8 to 1.0E+15	ohms·cm	ASTM D257
--	--	1.0E+14 to 1.1E+15	ohms·cm	IEC 60093
Dielectric Strength				
--	--	15 to 30	kV/mm	ASTM D149
--	--	19 to 60	kV/mm	IEC 60243-1
Dielectric Constant				
--	3.10	--		JIS K6911
--	--	3.09 to 3.73		ASTM D150
--	--	2.90 to 4.26		IEC 60250
Dissipation Factor				
--	0.040	--		JIS K6911
--	--	0.040 to 0.050		ASTM D150
--	--	0.029 to 0.051		IEC 60250
Insulation Resistance				
--	> 1.0E+15	--	ohms	JIS K6911
--	--	1.0E+15 to 1.2E+15	ohms	IEC 60167

Flammability	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Burning Rate				
--	30	--	mm/min	ASTM D63
--	--	28 to 34	mm/min	ISO 3795
Flame Rating (1.6 mm, All Colors)	HB	--		UL 94
Glow Wire Flammability Index	--	650 to 700	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	--	650 to 651	°C	IEC 60695-2-13

Optical	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Refractive Index				
--	1.490	--		JIS K7105
--	--	1.484 to 1.499		ASTM D542
--	--	1.490 to 1.491		ISO 489
Light Transmittance				
-- [4]	93.0	--	%	JIS K7105
--	--	90.8 to 93.0	%	ASTM D1003
Haze				
--	< 0.500	--	%	JIS K7105
--	--	0.250 to 2.88	%	ASTM D1003
Yellowness Index	--	-1.0 to 1.1	YI	ASTM D1925

Additional Information	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit	Test Method
Voltage Resistance [6]	20.0	--	kV/min	JIS K6911

Injection	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit
Drying Temperature	70 to 80	75 to 91	°C
Drying Time	4.0 to 6.0	3.4 to 5.1	hr
Suggested Max Moisture	--	0.019 to 0.10	%
Suggested Max Regrind	--	20	%
Hopper Temperature	--	70 to 71	°C
Rear Temperature	200 to 260	204 to 255	°C
Middle Temperature	200 to 260	220 to 255	°C
Front Temperature	200 to 260	225 to 257	°C
Nozzle Temperature	--	220 to 252	°C
Processing (Melt) Temp	--	224 to 271	°C
Mold Temperature	60 to 80	59 to 81	°C
Injection Pressure	58.8 to 118	4.14 to 111	MPa
Back Pressure	--	0.600 to 1.20	MPa
Screw Speed	--	74 to 75	rpm

Injection Notes	
Generic Acrylic (PMMA)	This data represents typical values that have been calculated from all products classified as: Generic Acrylic (PMMA) This information is provided for comparative purposes only.

Extrusion	SUMIPEX® LG2	Generic Acrylic (PMMA)	Unit
Drying Temperature	--	80	°C
Drying Time	--	2.5 to 4.0	hr
Melt Temperature	--	215 to 245	°C
Die Temperature	--	60 to 245	°C

Extrusion Notes	
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Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] Method A

[5] VST 25±3, 4 hrs

[6] 60%, 1kHz

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