

Makrolon® 3105

Polycarbonate

Covestro - Polycarbonates

Message:

MVR (300 °C/1.2 kg) 6.0 cm³/10 min; general purpose; high viscosity; easy release; injection molding - melt temperature 280 - 320 °C; available in transparent, translucent and opaque colors

General Information			
UL YellowCard	E41613-233143		
Features	General Purpose		
	Good Mold Release		
	High Viscosity		
Uses	General Purpose		
RoHS Compliance	RoHS Compliant		
Appearance	Clear/Transparent		
	Colors Available		
	Opaque		
	Translucent		
Processing Method	Injection Molding		
Multi-Point Data	Creep Modulus vs. Time (ISO 11403-1)		
	Isochronous Stress vs. Strain (ISO 11403-1)		
	Isothermal Stress vs. Strain (ISO 11403-1)		
	Secant Modulus vs. Strain (ISO 11403-1)		
	Shear Modulus vs. Temperature (ISO 11403-1)		
	Specific Volume vs Temperature (ISO 11403-2)		
	Viscosity vs. Shear Rate (ISO 11403-2)		
Physical	Nominal Value	Unit	Test Method
Density (23°C)	1.20	g/cm ³	ISO 1183
Apparent Density ¹	0.66	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	6.5	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	6.00	cm ³ /10min	ISO 1133
Molding Shrinkage			
Across Flow	0.60 to 0.80	%	ISO 2577
Flow	0.60 to 0.80	%	ISO 2577
Across Flow : 2.00 mm ²	0.75	%	ISO 294-4
Flow : 2.00 mm ³	0.70	%	ISO 294-4
Water Absorption			ISO 62

Saturation, 23°C	0.30	%	
Equilibrium, 23°C, 50% RH	0.12	%	
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness	113	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus (23°C)	2400	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield, 23°C	66.0	MPa	
Break, 23°C	70.0	MPa	
Tensile Strain			ISO 527-2/50
Yield, 23°C	6.2	%	
Break, 23°C	130	%	
Nominal Tensile Strain at Break (23°C)	> 50	%	ISO 527-2/50
Tensile Creep Modulus			ISO 899-1
1 hr	2200	MPa	
1000 hr	1900	MPa	
Flexural Modulus ⁴ (23°C)	2400	MPa	ISO 178
Flexural Stress ⁵			ISO 178
3.5% Strain, 23°C	73.0	MPa	
23°C	97.0	MPa	
Flexural Strain at Flexural Strength (23°C) ⁶	7.1	%	ISO 178
Gas Permeation			ISO 2556
Carbon Dioxide : 23°C, 25.4 µm	16900	cm ³ /m ² /bar/24 hr	
Carbon Dioxide : 23°C, 100.0 µm	3800	cm ³ /m ² /bar/24 hr	
Nitrogen : 23°C, 25.4 µm	510	cm ³ /m ² /bar/24 hr	
Nitrogen : 23°C, 100.0 µm	120	cm ³ /m ² /bar/24 hr	
Oxygen : 23°C, 25.4 µm	2760	cm ³ /m ² /bar/24 hr	
Oxygen : 23°C, 100.0 µm	650	cm ³ /m ² /bar/24 hr	
Application of Flame from Small Burner - Method K and F (2.00 mm)	K1, F1		DIN 53438-1, -3
Burning Rate - US-FMVSS (> 1.00 mm)	passed		ISO 3795
Flash Ignition Temperature	480	°C	ASTM D1929
Glow Wire Test			EDF HN60 E.02
1.50 mm	850	°C	
3.00 mm	850	°C	
Needle Flame Test			IEC 60695-11-5
Method F : 1.50 mm	1.0	min	
Method F : 2.00 mm	2.0	min	
Method F : 3.00 mm	2.0	min	
Method K : 2.00 mm	0.1	min	
Method K : 3.00 mm	0.2	min	
Self Ignition Temperature	550	°C	ASTM D1929

Electrolytical Corrosion (23°C)	A1		IEC 60426
ISO Shortname	ISO 7391-PC,MR,(,,)-09-9		
Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate (23°C, 85% RH, 100 µm)	15	g/m ² /24 hr	ISO 15106-1
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁷			ISO 7391
-30°C, Complete Break	16	kJ/m ²	
23°C, Partial Break	80	kJ/m ²	
Charpy Unnotched Impact Strength			ISO 179/1eU
-60°C	No Break		
-30°C	No Break		
23°C	No Break		
Notched Izod Impact Strength ⁸			ISO 7391
-30°C, Complete Break	15	kJ/m ²	
23°C, Partial Break	70	kJ/m ²	
Multi-Axial Instrumented Impact Energy			ISO 6603-2
-30°C	70.0	J	
23°C	60.0	J	
Multi-Axial Instrumented Impact Peak Force			ISO 6603-2
-30°C	6500	N	
23°C	5600	N	
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, Unannealed	138	°C	ISO 75-2/B
1.8 MPa, Unannealed	126	°C	ISO 75-2/A
Glass Transition Temperature ⁹	146	°C	ISO 11357-2
Vicat Softening Temperature			
--	145	°C	ISO 306/B50
--	146	°C	ISO 306/B120
Ball Pressure Test (138°C)	Pass		IEC 60695-10-2
CLTE			ISO 11359-2
Flow : 23 to 55°C	6.5E-5	cm/cm/°C	
Transverse : 23 to 55°C	6.5E-5	cm/cm/°C	
Thermal Conductivity ¹⁰ (23°C)	0.20	W/m/K	ISO 8302
RTI Elec (1.50 mm)	125	°C	UL 746
RTI Imp (1.50 mm)	115	°C	UL 746
RTI Str (1.50 mm)	125	°C	UL 746
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	1.0E+16	ohms	IEC 60093
Volume Resistivity (23°C)	1.0E+16	ohms · cm	IEC 60093
Electric Strength (23°C, 1.00 mm)	34	kV/mm	IEC 60243-1

Relative Permittivity		IEC 60250	
23°C, 100 Hz	3.10		
23°C, 1 MHz	3.00		
Dissipation Factor		IEC 60250	
23°C, 100 Hz	5.0E-4		
23°C, 1 MHz	9.5E-3		
Comparative Tracking Index		IEC 60112	
Solution A	250	V	
Solution B	125	V	
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm	HB		
0.750 mm	V-2		
Glow Wire Flammability Index		IEC 60695-2-12	
0.750 mm	875	°C	
1.50 mm	875	°C	
3.00 mm	960	°C	
Glow Wire Ignition Temperature		IEC 60695-2-13	
0.750 mm	875	°C	
1.50 mm	875	°C	
3.00 mm	900	°C	
Oxygen Index ¹¹	27	%	ISO 4589-2
Optical	Nominal Value	Unit	Test Method
Refractive Index ¹²	1.586		ISO 489
Transmittance		ISO 13468-2	
1000 µm	89.0	%	
2000 µm	89.0	%	
3000 µm	88.0	%	
4000 µm	87.0	%	
Haze (3000 µm)	< 0.80	%	ISO 14782
NOTE			
1.	Pellets		
2.	60x60x2 mm, 500 bar		
3.	60x60x2 mm, 500 bar		
4.	2.0 mm/min		
5.	2.0 mm/min		
6.	2 mm/min		
7.	Based on ISO 179-1eA, 3 mm		
8.	Based on ISO 180-A, 3 mm		
9.	10°C/min		
10.	Cross-flow		
11.	Procedure A		

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection. All rights belong to the original authors. If any infringement occurs, please contact us immediately.

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

