Infino SC-1220UR

Polycarbonate

Lotte Chemical Corporation

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Technical Data

Product Description

Infino SC-1220UR is a Polycarbonate (PC) material. It is available in Africa & Middle East, Asia Pacific, Europe, Latin America, or North America. Primary attribute of Infino SC-1220UR: Flame Rated.

General

Material Status	• Commercial: Active
Literature [1]	• Processing (English) • Technical Information - ASTM (English) • Technical Information - ISO (English)
UL Yellow Card [2]	• E115797-100059837
Search for UL Yellow Card	• Lotte Chemical Corporation • Infino
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America

Physical	Nominal Value	Unit	Test Method
Density / Specific Gravity (Natural)	1.20	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	22	g/10 min	ASTM D1238 ISO 1133
Molding Shrinkage			
Flow : 3.20 mm	0.50 to 0.70	%	ASTM D955
Across Flow : 3.20 mm	0.50 to 0.70	%	ASTM D955
Across Flow : 2.00 mm	0.50 to 0.70	%	ISO 294-4
Flow : 2.00 mm	0.50 to 0.70	%	ISO 294-4

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- [4]	2300	MPa	ASTM D638
--	2300	MPa	ISO 527-1/50
Tensile Strength			
Yield [4]	63.0	MPa	ASTM D638
Yield	64.0	MPa	ISO 527-2/50
Break [4]	63.0	MPa	ASTM D638
Break	64.0	MPa	ISO 527-2/50
Tensile Elongation			
Break [4]	110	%	ASTM D638
Break	110	%	ISO 527-2/50
Flexural Modulus			
-- [5]	2300	MPa	ASTM D790
-- [6]	2300	MPa	ISO 178
Flexural Strength			
-- [5]	90.0	MPa	ASTM D790
-- [6]	92.0	MPa	ISO 178

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength [7] (23°C)	60	kJ/m²	ISO 179/1eA
Notched Izod Impact			
23°C, 3.18 mm	740	J/m	ASTM D256
23°C, 6.35 mm	98	J/m	ASTM D256
23°C [7]	65	kJ/m²	ISO 180/1A

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (R-Scale)	120		ASTM D785 ISO 2039-2

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Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed, 6.40 mm	136 °C	ASTM D648
0.45 MPa, Unannealed, 4.00 mm	136 °C	ISO 75-2/B
1.8 MPa, Unannealed, 6.40 mm	125 °C	ASTM D648
1.8 MPa, Unannealed, 4.00 mm	123 °C	ISO 75-2/A
Vicat Softening Temperature	145 °C	ISO 306/B50

Flammability	Nominal Value Unit	Test Method
Flame Rating (0.8 to 3.2 mm)	V-2	UL 94

Injection	Nominal Value Unit
Drying Temperature	120 °C
Drying Time	4.0 hr
Suggested Max Moisture	0.050 %
Rear Temperature	50 to 80 °C
Middle Temperature	250 to 270 °C
Front Temperature	270 to 300 °C
Nozzle Temperature	300 °C
Mold Temperature	80 to 120 °C
Injection Pressure	6.37 MPa
Back Pressure	0.981 to 1.96 MPa
Screw Speed	120 to 130 rpm

Injection Notes

Hot Runner Temperature, Manifolder: 290°C
Hot Runner Temperature, Valve Nozzle: 300°C

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] 50 mm/min

[5] 2.8 mm/min

[6] 2.0 mm/min

[7] 4mm

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Makrolon® 2205

Polycarbonate

Covestro - Polycarbonates

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Technical Data

Product Description

MVR (300°C/1.2 kg) 34 cm³/10 min; general purpose; low viscosity; easy release; injection molding - melt temperature 280 - 320°C; available in transparent, translucent and opaque colors

General

Material Status	• Commercial: Active		
Literature [1]	• Technical Datasheet (English)		
UL Yellow Card [2]	• E41613-233135		
Search for UL Yellow Card	• Covestro - Polycarbonates • Makrolon®		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• General Purpose	• Good Mold Release	• Low 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)	1.19 g/cm³	ISO 1183
Apparent (Bulk) Density [4]	0.66 g/cm³	ISO 60
Melt Mass-Flow Rate (MFR) (300°C/1.2 kg)	37 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (300°C/1.2 kg)	34 cm³/10min	ISO 1133
Molding Shrinkage		
Across Flow	0.50 to 0.70 %	ISO 2577
Flow	0.50 to 0.70 %	ISO 2577
Across Flow : 280°C, 2.00 mm [5]	0.65 %	ISO 294-4
Flow : 2.00 mm [5]	0.65 %	ISO 294-4
Water Absorption		ISO 62
Saturation, 23°C	0.30 %	
Equilibrium, 23°C, 50% RH	0.12 %	

Mechanical	Nominal Value Unit	Test Method
Tensile Modulus (23°C)	2400 MPa	ISO 527-1/1
Tensile Stress		ISO 527-2/50
Yield, 23°C	65.0 MPa	
Break, 23°C	60.0 MPa	
Tensile Strain		ISO 527-2/50
Yield, 23°C	6.0 %	
Break, 23°C	120 %	
Nominal Tensile Strain at Break (23°C)	> 50 %	ISO 527-2/50
Tensile Creep Modulus		ISO 899-1
1 hr	2100 MPa	
1000 hr	1700 MPa	
Flexural Modulus [6] (23°C)	2350 MPa	ISO 178

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Mechanical	Nominal Value Unit	Test Method
Flexural Stress [6]		ISO 178
23°C	97.0 MPa	
3.5% Strain, 23°C	73.0 MPa	
Flexural Strain at Flexural Strength [6] (23°C)	7.1 %	ISO 178

Films	Nominal Value Unit	Test Method
Water Vapor Transmission Rate		ISO 15106-1
23°C, 85% RH, 100 µm	15 g/m²/24 hr	
Carbon Dioxide Permeability (23°C, 25.4 µm)	18900 cm³/m²/bar/24 hr	ISO 2556
Gas Permeation		ISO 2556
Carbon Dioxide : 100.0 µm	4500 cm³/m²/bar/24 hr	
Nitrogen : 25.4 µm	630 cm³/m²/bar/24 hr	
Nitrogen : 100.0 µm	150 cm³/m²/bar/24 hr	
Oxygen : 25.4 µm	3150 cm³/m²/bar/24 hr	
Oxygen : 100.0 µm	750 cm³/m²/bar/24 hr	

Impact	Nominal Value Unit	Test Method
Charpy Notched Impact Strength [7]		ISO 179/1eA
-30°C, Complete Break	12 kJ/m²	
23°C, Partial Break	55 kJ/m²	
Charpy Unnotched Impact Strength		ISO 179/1eU
-60°C	No Break	
-30°C	No Break	
23°C	No Break	
Notched Izod Impact Strength [7]		ISO 180/A
-30°C, Complete Break	12 kJ/m²	
23°C, Partial Break	55 kJ/m²	
Multi-Axial Instrumented Impact Energy		ISO 6603-2
-30°C	60.0 J	
23°C	55.0 J	
Multi-Axial Instrumented Impact Peak Force		ISO 6603-2
-30°C	5900 N	
23°C	4900 N	

Hardness	Nominal Value Unit	Test Method
Ball Indentation Hardness	115 MPa	ISO 2039-1

Thermal	Nominal Value Unit	Test Method
Deflection Temperature Under Load		
0.45 MPa, Unannealed	137 °C	ISO 75-2/B
1.8 MPa, Unannealed	124 °C	ISO 75-2/A
Glass Transition Temperature [8]	145 °C	ISO 11357-2
Vicat Softening Temperature		
--	146 °C	ISO 306/B120
--	145 °C	ISO 306/B50
Ball Pressure Test (136°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 [9] (23°C)	0.20 W/m/K	ISO 8302
RTI Elec (1.5 mm)	125 °C	UL 746B
RTI Imp (1.5 mm)	115 °C	UL 746B
RTI Str (1.5 mm)	125 °C	UL 746B

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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	9.0E-3	
Comparative Tracking Index		IEC 60112
Solution A	250 V	
Solution B	125 V	

Flammability	Nominal Value Unit	Test Method
Flame Rating		UL 94
2.9 mm, CL	HB	
0.75 mm, CL	V-2	
Glow Wire Flammability Index		IEC 60695-2-12
0.75 mm	850 °C	
1.5 mm	875 °C	
3.0 mm	930 °C	
Glow Wire Ignition Temperature		IEC 60695-2-13
0.75 mm	875 °C	
1.0 mm	875 °C	
1.5 mm	875 °C	
3.0 mm	875 °C	
Oxygen Index [10]	28 %	ISO 4589-2
Application of Flame from Small Burner [11]		DIN 53438-1, -3
2.00 mm	K1, F1	
Burning Rate [12] (> 1.00 mm)	passed	ISO 3795
Flash Ignition Temperature	480 °C	ASTM D1929
Needle Flame Test		IEC 60695-11-5
1.50 mm [13]	5.0 sec	
1.50 mm [14]	60.0 sec	
2.00 mm [13]	5.0 sec	
2.00 mm [14]	120.0 sec	
3.00 mm [13]	10.0 sec	
3.00 mm [14]	120.0 sec	
Self Ignition Temperature	550 °C	ASTM D1929

Optical	Nominal Value Unit	Test Method
Refractive Index [15]	1.586	ISO 489
Light Transmittance		ISO 13468-2
1000 µm	89.0 %	
2000 µm	89.0 %	
3000 µm	88.0 %	
4000 µm	87.0 %	
Haze (3000 µm)	< 0.800 %	ISO 14782

Additional Information	Nominal Value Unit	Test Method
Electrolytical Corrosion (23°C)	A1	IEC 60426
ISO Shortname	ISO 7391-PC,MR,(,,)-24-9	

Injection	Nominal Value Unit
Drying Temperature - Dry Air Dryer	120 °C

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Injection	Nominal Value Unit
Drying Time - Dry Air Dryer	2.0 to 3.0 hr
Suggested Max Moisture	< 0.020 %
Suggested Shot Size	30 to 70 %
Rear Temperature	250 to 260 °C
Middle Temperature	270 to 280 °C
Front Temperature	280 to 290 °C
Nozzle Temperature	290 to 300 °C
Processing (Melt) Temp	280 to 320 °C
Mold Temperature	80 to 120 °C
Back Pressure	5.00 to 15.0 MPa
Vent Depth	0.025 to 0.075 mm

Injection Notes

Hold Pressure (% of Injection Pressure): 50 - 75%
Standard Melt Temperature: 300°C
Peripheral Screw Speed: 0.05 - 0.2 m/s

Notes

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

[4] Pellets

[5] 60x60x2mm, 500 bar

[6] 2.0 mm/min

[7] 3 mm

[8] 10°C/min

[9] Across Flow

[10] Procedure A

[11] Method K and F

[12] US-FMVSS

[13] Method K

[14] Method F

[15] Method A

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