

SABIC Innovative Plastics Lexan® 945ASR PC

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® 945ASR Polycarbonate (PC) resin is a non-filled, injection moldable grade. This non-chlorinated, non-brominated flame retardant PC has an UL-94 V0 rating and is available in transparent and tinted color options. Lexan 945ASR is designed with superior mold release performance to meet the needs of various applications. This data was supplied by SABIC-IP for the Americas region.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-945ASR-PC.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D 792
Density	1.20 g/cc	0.0434 lb/in ³	ISO 1183
Moisture Absorption at Equilibrium	0.15 %	0.15 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.35 % @Temperature 23.0 °C	0.35 % @Temperature 73.4 °F	ISO 62
Linear Mold Shrinkage, Flow	0.0050 - 0.0070 cm/cm	0.0050 - 0.0070 in/in	on tensile bar; SABIC Method
	0.0050 - 0.0070 cm/cm @Thickness 3.20 mm	0.0050 - 0.0070 in/in @Thickness 0.126 in	SABIC Method
Melt Flow	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	ASTM D 1238
	10 g/10 min @Load 1.20 kg, Temperature 300 °C	10 g/10 min @Load 2.65 lb, Temperature 572 °F	[cm ³ /10 min] Melt Volume Rate; ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	65.0 MPa	9430 psi	50 mm/min; ISO 527
	68.0 MPa	9860 psi	Type I, 50 mm/min; ASTM D 638
Tensile Strength, Yield	62.0 MPa	8990 psi	Type I, 50 mm/min; ASTM D 638
	63.0 MPa	9140 psi	50 mm/min; ISO 527
Elongation at Break	100 %	100 %	50 mm/min; ISO 527
	125 %	125 %	Type I, 50 mm/min; ASTM D 638
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D 638

Mechanical Properties	Metric	English	Comments, ISO 527
Tensile Modulus	2.28 GPa	331 ksi	50 mm/min; ASTM D 638
	2.35 GPa	341 ksi	1 mm/min; ISO 527
Flexural Yield Strength	90.0 MPa	13100 psi	2 mm/min; ISO 178
	101 MPa	14600 psi	1.3 mm/min, 50 mm span; ASTM D 790
Flexural Modulus	2.30 GPa	334 ksi	2 mm/min; ISO 178
	2.38 GPa	345 ksi	1.3 mm/min, 50 mm span; ASTM D 790
Izod Impact, Notched	1.28 J/cm	2.40 ft-lb/in	ASTM D 256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	8.01 J/cm	15.0 ft-lb/in	ASTM D 256
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	12.0 kJ/m ²	5.71 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	70.0 kJ/m ²	33.3 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	1.40 J/cm ²	6.66 ft-lb/in ²	V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	7.30 J/cm ²	34.7 ft-lb/in ²	V-notch Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Impact Test	79.0 J	58.3 ft-lb	Instrumented Impact Total Energy; ASTM D 3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	68.4 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^\circ\text{C}$	@Temperature 73.4 - 176 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	70.0 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	38.9 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^\circ\text{C}$	@Temperature 73.4 - 176 $^\circ\text{F}$	
	73.8 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	41.0 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^\circ\text{C}$	@Temperature -40.0 - 104 $^\circ\text{F}$	
Thermal Conductivity	0.200 W/m-K	1.39 BTU-in/hr-ft ² - $^\circ\text{F}$	ISO 8302
Deflection Temperature at 0.46 MPa (66 psi)	136 $^\circ\text{C}$	277 $^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
	138 $^\circ\text{C}$	280 $^\circ\text{F}$	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	125 $^\circ\text{C}$	257 $^\circ\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	127 $^\circ\text{C}$	261 $^\circ\text{F}$	unannealed; ASTM D 648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	141 $^\circ\text{C}$	286 $^\circ\text{F}$	Rate B/50; ISO 306
	142 $^\circ\text{C}$	288 $^\circ\text{F}$	Rate B/120; ISO 306
	143 $^\circ\text{C}$	289 $^\circ\text{F}$	Rate B/50; ASTM D 1525
UL RTI, Electrical	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical with Impact	120 $^\circ\text{C}$	248 $^\circ\text{F}$	UL 746B
UL RTI, Mechanical without Impact	130 $^\circ\text{C}$	266 $^\circ\text{F}$	UL 746B
Flammability, UL94	V-2	V-2	UL 94
	@Thickness 1.50 mm	@Thickness 0.0591 in	
	V-0	V-0	UL 94
	@Thickness 3.00 mm	@Thickness 0.118 in	
Oxygen Index	35 %	35 %	LOI; ISO 4589

Thermal Properties	850 °C Metric	1560 °F English	Comments Ignitability Temperature; IEC 60695-2-13
	@Thickness 1.00 mm	@Thickness 0.0394 in	
	960 °C	1760 °F	Glow Wire Flammability Index; IEC 60695-2-12
	@Thickness 1.00 mm	@Thickness 0.0394 in	

Optical Properties	Metric	English	Comments
Haze	<= 2.0 %	<= 2.0 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	
Transmission, Visible	>= 88 %	>= 88 %	ASTM D 1003
	@Thickness 2.54 mm	@Thickness 0.100 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	IEC 60093
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	ROA; IEC 60093
Dielectric Constant	2.7	2.7	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	2.7	2.7	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
Dielectric Strength	17.0 kV/mm	432 kV/in	in oil; IEC 60243-1
	@Thickness 3.20 mm	@Thickness 0.126 in	
Dissipation Factor	0.0010	0.0010	IEC 60250
	@Frequency 50.0 - 60.0 Hz	@Frequency 50.0 - 60.0 Hz	
	0.010	0.010	IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
Arc Resistance	0.00 - 60 sec	0.00 - 60 sec	Tungsten, PLC code 7; ASTM D 495
Comparative Tracking Index	225 V	225 V	IEC 60112
	250 - 400 V	250 - 400 V	PLC code 2; UL 746A
Hot Wire Ignition, HWI	15 - 30 sec	15 - 30 sec	PLC code 3; UL 746A
High Amp Arc Ignition, HAI	15 - 30 arcs	15 - 30 arcs	surface, PLC code 3; UL 746A

High Voltage Arc-Tracking Rate, Electrical Properties	80.0 - 150 mm/min Metric	3.15 - 5.91 in/min English	PLC code 3: UL 746A Comments
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Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	PASSES	IEC 60695-10-2

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