

Lexan* Resin EXL1036

Americas: COMMERCIAL

Lexan* EXL1036 polycarbonate (PC) siloxane copolymer resin is a UV stabilized high viscosity grade designed for (co-)extrusion. This resin offers extreme low temperature (-60 C) ductility and good hiding power as caplayer in combination with excellent extrusion processing characteristics. Lexan EXL1036 resin is available in limited opaque colors only and is an excellent candidate for a broad range of (co-)extrusion/thermoforming applications.

Property

TYPICAL PROPERTIES ⁽¹⁾			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	130	%	ASTM D 638
Tensile Modulus, 50 mm/min	2120	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	88	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2100	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	57	MPa	ISO 527
Tensile Stress, break, 50 mm/min	66	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	120	%	ISO 527
Tensile Modulus, 1 mm/min	2070	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	80	MPa	ISO 178
Flexural Modulus, 2 mm/min	1960	MPa	ISO 178
IMPACT	Value	Unit	Standard
Izod Impact, notched, 23°C	820	J/m	ASTM D 256
Izod Impact, notched, -30°C	680	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	52	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	70	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	55	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	75	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	60	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	143	°C	ASTM D 1525
HDT, 1.82 MPa, 3.2mm, unannealed	121	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.66E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.66E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.2E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	143	°C	ISO 306
Vicat Softening Temp, Rate B/120	141	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	125	°C	ISO 75/Af

PHYSICAL	Value	Unit	Standard
Specific Gravity	1.2	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 - 0.8	%	SABIC Method
Melt Flow Rate, 300°C/1.2 kgf	5.5	g/10 min	ASTM D 1238
Density	1.2	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.35	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	5	cm ³ /10 min	ISO 1133

Source GMD, last updated:11/08/2006

Processing

Parameter	Value	Unit
Sheet Extrusion		
Drying Temperature	110 - 120	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	48	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	245 - 260	°C
Barrel - Zone 1 Temperature	250 - 290	°C
Barrel - Zone 2 Temperature	245 - 270	°C
Barrel - Zone 3 Temperature	225 - 255	°C
Adapter Temperature	225 - 255	°C
Die Temperature	240 - 260	°C
Roll Stack Temp - Top	75 - 115	°C
Roll Stack Temp - Middle	80 - 125	°C
Roll Stack Temp - Bottom	120 - 145	°C

Source GMD, last updated:11/08/2006

Regrind: Levels of regrind up to about 25% do not adversely affect extrusion or thermoforming in small scale tests. Regrind may be used as long as acceptable sheet aesthetics and performance can be obtained. If regrind is to be used, parts formed from sheet should be tested to assure that they will perform adequately in their intended end-use environment. Efforts should be made to avoid using contaminated regrind.

- PLEASE NOTE: Conditions were established using a down stack configuration for roll stack.
- Drying: LEXAN EXL resin must be dried before processing, even if vented barrels are used, in order to avoid material degradation during the sheet extrusion process.
- Screw Design: LEXAN EXL resins have been successfully extruded using either general purpose or barrier type screws with compression ratios in the range of 2.5 - 3.0. Transition between feed and metering sections should be gradual, occurring over 6 - 8 screw diameters if possible. Screws with L/D ratios of 24:1 or greater are suggested.
- Temperature Profile: A reverse temperature profile (higher temperature settings at the feed section and decreasing toward the die) has been used successfully with this material to improve melt strength of the web between the die and rolls.

THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR [\(LOCAL SALES OFFICE\)](#) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

Disclaimer : THE MATERIALS AND PRODUCTS OF THE BUSINESSES MAKING UP THE SABIC INNOVATIVE PLASTICS COMPANY, ITS SUBSIDIARIES AND AFFILIATES ("SABIC IP"), ARE SOLD SUBJECT TO SABIC IP' S STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED

HEREIN IS GIVEN IN GOOD FAITH, SABIC IP MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (I) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (II) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING SABIC IP MATERIALS, PRODUCTS, RECOMMENDATIONS OR ADVICE. EXCEPT AS PROVIDED IN SABIC IP' S STANDARD CONDITIONS OF SALE, SABIC IP AND ITS REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS OR PRODUCTS DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of SABIC IP' s materials, products, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating SABIC IP materials or products will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of SABIC IP' s Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by SABIC IP. No statement contained herein concerning a possible or suggested use of any material, product or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of SABIC Innovative Plastics Company or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product or design in the infringement of any patent or other intellectual property right

* Lexan is a trademark of the SABIC Innovative Plastics Company

© 1997-2008 SABIC Innovative Plastics Company.All rights reserved