

# LEXAN™ XHR LIGHT SHEET

## XHRL300

### PRODUCT DATASHEET

#### DESCRIPTION

LEXAN™ XHR LIGHT sheet, XHRL300 offers the lightest thermoplastic sheet option with full compliance for complex thermoformed aircraft interiors parts, with a density of 0.94 g/cm<sup>3</sup>. It offers up to 36% weight savings compared to traditional polyvinyl chloride and acrylic blend (PVC/PMMA) based sheet products for potential applications such as seating parts, panels, partitions, luggage compartments and passenger service units. Available with a variety of textures and colors, LEXAN XHR LIGHT sheet meets stringent industry heat release, flame, smoke density and toxicity requirements.

#### TYPICAL PROPERTY VALUES

PROPERTY	TEST METHOD	SI UNITS	IMPERIAL UNITS
<b>PHYSICAL</b>			
Thickness availability	SABIC Internal	1.2 - 4.0 mm	0.047 - 0.157 inch
Density	SABIC Internal	0.94 g/cm <sup>3</sup>	59 lb/ft <sup>3</sup>
Water absorption, saturation, 23°C	SABIC Internal	0.51%	0.51%
<b>MECHANICAL</b>			
Tensile Strength at Yield, Type I , 50mm/min	ASTM D638	39 MPa	5,655 psi
Tensile Strength at Break, Type I , 50mm/min	ASTM D638	36 MPa	5,220 psi
Tensile Strain at Yield, Type I , 50mm/min	ASTM D638	7%	7%
Tensile Strain at Break, Type I , 50mm/min	ASTM D638	16%	16%
Tensile modulus, 5 mm/min	ASTM D638	1,357 MPa	196,765 psi
Flexural stress @ yield, 1.27mm/min	ASTM D790	72 MPa	10,440 psi
Flexural modulus, 1.27mm/min	ASTM D790	1,815 MPa	263,175 psi
Tensile Strength at Yield, 50mm/min	ISO527	39 MPa	5,655 psi
Tensile Strength at Break, 50mm/min	ISO527	35 MPa	5,075 psi
Tensile Strain at Yield, 50mm/min	ISO527	7%	7%
Tensile Strain at Break, 50mm/min	ISO527	16%	16%
Tensile modulus, 5 mm/min	ISO527	1,338 MPa	194,000 psi
<b>IMPACT</b>			
Izod impact, notched 23°C, 5lb/ft	ASTM D256	268 J/m	5 ft-lb/in
Instrumented Impact Total Energy, 23°C	ASTM D3763	15 J	11 ft-lb/in
<b>THERMAL</b>			
Vicat softening temperature, 50N, 120°C/h	ASTM D 1525	132 °C	270 °F
Heat deflection temperature, 1.82MPa	ASTM D648	119 °C	246 °F
Coefficient of linear thermal expansion, -60-130°C	SABIC Internal	5.7x10 <sup>-5</sup> 1/°C	3.2x10 <sup>-5</sup> 1/°F
<b>OPTICAL</b>			
Light transmission, 3 mm	ASTM D 1003		Opaque

PROPERTY	TEST METHOD	SI UNITS	IMPERIAL UNITS
<b>FIRE RATINGS</b>			
OSU total heat release (2min test)	FAR 25.853	<55 kW-min/m <sup>2</sup>	
OSU total heat release (peak)	FAR 25.853	<55 kW/m <sup>2</sup>	
Vertical burn, 60 s, LBP	FAR 25.853	Pass	
NBS Smoke density, flaming, Dmax	ASTM E662	<100	
Smoke toxicity	ABD0031,BSS7239	Pass	

\* Typical values only. All measurements done at 3 mm thickness. Variations within normal tolerances are possible. ™ Trademarks of SABIC.

## PROCESSING

LEXAN™ XHR LIGHT sheet can be thermoformed into complex 3D shaped parts with very thin walls, offering substantial potential for overall weight savings and fuel efficiency across an airline fleet. It can be formed into complex shapes using standard thermoforming equipment. LEXAN LIGHT sheet has a forming temperature range of 170 - 225 °C. It is recommended that the forming tool be pre-heated at 110 – 120 °C. When forming, a draft angle of at least 3° should be allowed (7 ° for male molds), and post mold shrinkage of 0.9 – 1.1% taken into account, depending on mold temperature.

## PRE-DRYING

It is important to ensure that LEXAN XHR LIGHT sheet is free of moisture prior to thermoforming. A hot air circulating oven set at 120 °C is recommended, with a 25 mm gap between sheets. Pre-drying times vary from 3-12 hours for 1.2 to 4.0 mm thick sheets.

## ASSEMBLING

Parts made from LEXAN XHR LIGHT sheet can be assembled with plastics, metals, rubber and other materials using many types of adhesive bonding, welding and mechanical fastening techniques. Since some of these materials can cause environmental stress cracking, please consult SABIC representative for advice on specific applications.

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