

LEXAN™ MARGARD™ HLG5FRA SHEET

PRODUCT DATASHEET

DESCRIPTION

LEXAN™ MARGARD™ HLG5FRA sheet is a flame resistant transparent polycarbonate sheet. In addition to good flammability, smoke and toxicity performance, it offers excellent impact resistance, high optical quality, good stiffness and strength and ease of processing, making it an excellent candidate particular for applications in the aircraft industry, as well as electronic, transportation, building and construction industries.

TYPICAL PROPERTY VALUES

PROPERTY	TEST METHOD	UNITS	VALUE
PHYSICAL			
Density	ISO 1183	g/cm ³	1.21
Water absorption, 50% RH, 23 °C	ISO 62	%	0.15
Water absorption, saturation, 23°C	ISO 62	%	0.35
MECHANICAL			
Yield stress 50 mm/min	ISO 527	MPa	>60
Yield strain 50 mm/min	ISO 527	%	6
Nominal strain at break 50 mm/min	ISO 527	%	>100
Tensile modulus 1 mm/min	ISO 527	MPa	2300
Flexural strength 2 mm/min	ISO 178	MPa	90
Flexural modulus 2 mm/min	ISO 178	MPa	2300
Taber haze - 100 cycles, 500 gram, CS-10F	ASTM D1044	%	1 - 3
Taber haze - 500 cycles, 500 gram, CS-10F	ASTM D1044	%	3 - 8
THERMAL			
Vicat softening temperature, rate B/120	ISO 306	°C	145
Temperature of deflection under load (type A), 1.8 MPa, flat	ISO 75-2	°C	127
Thermal conductivity	ISO 8302	W/m.°C	0.2
Coefficient of linear thermal expansion, 23-55°C	ISO 11359-2	1/°C	7x10 ⁻⁵
Ball pressure test 125 ±2°C	IEC 60695-10-2	-	Pass
ELECTRICAL			
Volume resistivity	IEC 60093	Ohm.cm	>10 ¹⁵
FIRE RATINGS			
Aircraft			
Smoke density	ABD0031	-	Pass Ds(4min) <150 (2-3 mm)
OPTICAL			
Light transmission 2 mm	ASTMD1003	%	92
Light transmission 3 mm	ASTMD1003	%	91

◆ These property values have been derived from LEXAN™ resin data for the material used to produce this sheet product.

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** Taber abrasion conditions at 500 cycles, 500g, CS-10F wheels. Tested for abrasion resistance, LEXAN MARGARD HLG5FRA sheet exhibits significantly less hazing, compared to uncoated polycarbonate sheet.

PROCESSING

LEXAN™ HLG5FRA sheet is ideally suited to thermoforming. It offers high, deep draw ratios, equal wall thickness distribution, and it can be formed into complex shapes using standard thermoforming equipment. Sandwich type heating systems give the best results. LEXAN HLG5FRA sheet has a forming temperature range of 185 - 205°C. When forming, a draft angle of at least 3° should be allowed, and post mold shrinkage of 0.5 - 1.0% taken into account.

PRE-DRYING

It is important to ensure that LEXAN HLG5FRA sheets are free of moisture prior to thermoforming. A hot air circulating oven set at 120°C is recommended. Pre-drying times vary from 3-24 hours, depending on sheet thickness.

ASSEMBLING

Parts made from LEXAN HLG5FRA 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 for advice on specific applications.

COMPLIANCE

Passes FAR25.853, ABD0031 in 3 mm. as well is eco labeled according to VDE.

PAINTING

For either functional or decorative reasons it may be necessary to apply finish to LEXAN HLG5FRA sheets or vacuum formed parts. The product is ideally suited for use with a wide variety of modern decoration techniques. A list of approved paint systems and suppliers is available upon request.

CHEMICAL RESISTANCE

LEXAN HLG5FRA sheet has sufficient resistance to most mineral oils, greases, aliphatic hydrocarbons and acids under low or moderate stress levels. In applications where the LEXAN HLG5FRA sheet will come into contact with aggressive chemicals, specific (application related) testing is always advised. Effective painting systems can improve chemical resistance.

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