

# ULTEM™ R16SG00 SHEET

## PRODUCT DATASHEET

### DESCRIPTION

ULTEM™ R16SG00 sheet is an extruded polyetherimide (PEI) alloy sheet material used for rail interior applications. ULTEM R16SG00 sheet is an amorphous thermoplastic offering outstanding high heat resistance, high strength, modulus and broad chemical resistance. ULTEM R16SG00 sheet is inherently flame resistant with low smoke emission. ULTEM R16SG00 sheet meets United States Federal Rail Administration (FRA 49 CFR Part 238, Appendix B) flammability and smoke emission characteristics for passenger cars and locomotive cabs. In addition, ULTEM R16SG00 sheet complies with toxicity standard Bombardier SMP 800-C. The material may be thermoformed, pressure formed, twin sheet formed, or used in flat or cold formed applications. Information on stain and chemical resistance, processing, and secondary operations is available upon request.

### TYPICAL PROPERTY VALUES ♦ (Imperial)

PROPERTY	TEST METHOD	UNITS	VALUE
<b>Physical</b>			
Specific Gravity (Color Dependent)	ASTM D792	g/cm <sup>3</sup>	78.6-83
Water Absorption, Equilibrium, 24 hrs	ASTM D 570	%	0.70
<b>Mechanical</b>			
Tensile strength			
@ yield	ASTM D638	psi	13,100
@ ultimate	ASTM D638	psi	11,000
Tensile modulus	ASTM D638	psi	335,000
Tensile elongation @ ultimate	ASTM D638	%	35
Flexural strength (gauge dependent) #	ASTM D790	psi	20,400
Flexural modulus (gauge dependent) #	ASTM D790	psi	460,000
Dynatup impact strength, ½" diameter dart (gauge dependent) #			
	ASTM D3763	Ft-lbs @ 75 °F	50
Izod impact strength (gauge dependent) #			
	ASTM D256A	Ft-lbs/in	
notched @ 24 °C			
			1,4
unnotched @ 24 °C			
			no break
Gardner Impact strength, Round Tup (gauge Dependent) #			
	ASTM D 3029	In-lbs @ 75 °C	>320
Rockwell Hardness	ASTM D 785		123
<b>Thermal</b>			
Coeff. of Thermal Expansion	ASTM D696	in/in/°F	2.75 x10 <sup>-5</sup>
Heat Deflection Temperature ###			
@ 1.82 MPa	ASTM D648	°F	373
@ .45 MPa		°F	395
<b>Flammability</b>			
FRA 49 CFR Part 238, Appendix B			
Flame Spread Index, Is (<35 max) ##	ASTM E-162		Pass. Is = <5
Smoke Density			
Ds - 1.5mins. (<100max) ##	ASTM E-662		Pass, ds, 1.5 = 1
Ds - 4.0mins (<200 max) ##			Pass, Ds, 4 = 7
Heat & Visible Smoke Release Rate	ASTM E-1354/ ISO-5660		
Average Heat of Combustion		MJ/kg	30.96
Average Extinction Area		m <sup>2</sup> /kg	85.10

♦ These are typical properties and are not intended for specification purposes. If minimum certifiable properties are required, please contact your local SABIC Functional Forms representative or the Quality Services Department.

™ Trademark of SABIC.

## PROCESSING

ULTEM™ R16SG00 sheet is an excellent candidate for 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. ULTEM R16SG00 sheet has a forming temperature range of 260 - 288°C or 500 - 550°F. When forming, please reference our ULTEM forming guide.

## CHEMICAL RESISTANCE

ULTEM R16SG00 sheet has an excellent resistance to most mineral oils, greases, and aliphatic hydrocarbons. In applications where the ULTEM R16SG00 sheet will come into contact with aggressive chemicals or solvent, specific (application related) testing is always advised.

## PRE - DRYING

It is important to ensure that ULTEM R16SG00 sheets are free of moisture prior to thermoforming. A hot air circulating oven set at 182°C or 360°F is recommended. Pre-drying times are:

Sheet thickness (inch)	Drying time (hrs.)
.060	6
.080	8
.093	10
.125	12

## ASSEMBLING

Parts made from ULTEM R16SG00 sheet can be assembled with plastics, metals, rubber and other materials using many types of adhesive bonding, welding and mechanical fastening techniques. Further information and advice is available on request.

## PRODUCT AVAILABILITY

**Product code:** ULTEM R16SG00 sheet

**Textures:** ULTEM R16SG29 sheet deep matte

**Gauges:** .060 inch / 1.5mm  
.080 inch / 2mm  
.093 inch / 2.36mm  
.125 inch / 3.175mm

**Standard widths:**  
.060-.080" 48 inch web width  
.093-.125" 48 and 60 inch web width

**Standard length:** 96 inch / 2438mm

**Colors Standard:** 8156 Ivory, 71024 light gray, 71025 dark gray

Other custom colors/custom lengths are available by special request

## CONTACT US:

### Middle East and Africa

SABIC Global Headquarters  
PO Box 5101  
Riyadh 11422  
Saudi Arabia  
T +966 (0) 1 225 8000  
F +966 (0) 1 225 9000  
E info@sabic.com

### Americas

Functional Forms  
2500 City West Boulevard  
Suite 100  
Houston, TX 77042  
USA  
Toll-free (800) 323 3783  
F (888) 443 2033  
E spinside.sales@sabic.com

### Europe

Functional Forms  
Plasticslaan 1  
4612 PX Bergen op Zoom  
The Netherlands  
T +31 164 293678  
F +31 164 293272  
E sfs.info@sabic.com

### Asia Pacific

Functional Forms  
2550 Xiupu Road  
Pudong  
201319 Shanghai  
China  
T +86 21 2037 8188  
F +86 21 2037 8288  
E sfs.info@sabic.com

DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF SAUDI BASIC INDUSTRIES CORPORATION (SABIC) OR ITS SUBSIDIARIES OR AFFILIATES ("SELLER") ARE SOLD SUBJECT TO SELLER'S STANDARD CONDITIONS OF SALE, WHICH ARE AVAILABLE UPON REQUEST. INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS DOCUMENT ARE GIVEN IN GOOD FAITH. HOWEVER, SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION, WARRANTY OR GUARANTEE (I) THAT ANY RESULTS DESCRIBED IN THIS DOCUMENT WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (II) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN OR APPLICATION INCORPORATING SELLER'S MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS. UNLESS OTHERWISE PROVIDED IN SELLER'S STANDARD CONDITIONS OF SALE, SELLER SHALL NOT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS DESCRIBED IN THIS DOCUMENT. Each user is responsible for making its own determination as to the suitability of Seller's materials, products, services or recommendations for the user's particular use through appropriate end-use and other testing and analysis. Nothing in any document or oral statement shall be deemed to alter or waive any provision of Seller's Standard Conditions of Sale or this Disclaimer, unless it is specifically agreed to in a writing signed by Seller. Statements by Seller concerning a possible use of any material, product, service or design do not, are not intended to, and should not be construed to grant any license under any patent or other intellectual property right of Seller or as a recommendation for the use of any material, product, service or design in a manner that infringes any patent or other intellectual property right.

SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates.  
© 2019 Saudi Basic Industries Corporation (SABIC). All Rights Reserved.

† Any brands, products or services of other companies referenced in this document are the trademarks, service marks and/or trade names of their respective holders.