

# Tuffak® OPTICAL GRADE

HIGH-IMPACT POLYCARBONATE SHEET

When you need a clear, rugged sheet for the toughest applications, nothing outperforms Tuffak® Optical Grade polycarbonate sheet. It is excellent for uses including transit shelters, protective laminations, window glazing and more. Tuffak® OG polycarbonate sheet has all the properties and features you demand, including:

- High optical clarity
- Highest light transmission of the Altuglas International line
- UV stability
- Low distortion



# Tuffak®

## TYPICAL STANDARD PROPERTIES

PROPERTY	TEST METHOD	UNITS	TUFFAK®
<b>PHYSICAL</b>			
Specific gravity	ASTM D792	-	1.2
Refractive index @ 72°F	ASTM D542	-	1.586
Light transmission, clear 1/8"	ASTM D1003	%	87
Haze	ASTM D1003	%	1
Rockwell hardness	ASTM D785	M scale	70
Water absorption, equilibrium, 24 hrs	ASTM D570	%	0.15

## TYPICAL STANDARD PROPERTIES

PROPERTY	TEST METHOD	UNITS	TUFFAK®
<b>MECHANICAL</b>			
Tensile strength, yield	ASTM D638	psi	9,000
Tensile strength, ultimate	ASTM D638	psi	9,500
Tensile modulus	ASTM D638	psi	340,000
Tensile elongation	ASTM D638	%	110
Flexural strength	ASTM D790	psi	14,000
Flexural modulus	ASTM D790	psi	340,000
Compressive strength	ASTM D695	psi	12,500
Compressive modulus	ASTM D695	psi	340,000
Poisson's ratio	-	-	0.38
Izod impact strength, notched @ 1/8"	ASTM D256	ft-lbs/inch	16
Charpy impact	ASTM D256	ft-lbs/inch	no break
Instrumental drop dart, 1/8"	ASTM D3763	ft-lbs	>50
Shear strength, @ yield	ASTM D732	psi	5,800
<b>THERMAL</b>			
Coefficient of thermal expansion	ASTM D696	in/in/F	0.0000380
Coefficient of thermal conductivity	ASTM C177	BTU-in/hr-sq. ft-F	1.35
DTUFL @ 264 psi	ASTM D648	F	275
U Value (summer gain, winter loss)	-	BTU-in/hr-sq. ft-F	0.98, 1.06
<b>ELECTRICAL</b>			
Dielectric constant, test @ 0.125" thick	ASTM D149	volts/mil	380 @ 25°C 450 @ 100°C
Dielectric constant	ASTM D150		
60 Hz		-	2.9
1,000,000 Hz		-	2.9
Volume resistivity @ 23°C	ASTM D257	ohm/cm	10 <sup>16</sup>
<b>FLAMMABILITY</b>			
Horizontal burn rate	ASTM D635	inches	<1 (CC-1)
Ignition temperature	ASTM D1929	F	1,090
Smoke developed	ASTM D2843	-	70

### Altuglas International

Arkema Inc.  
2000 Market Street  
Philadelphia, PA 19103-3222  
Tel: 215-419-7000  
Fax 215-419-5512  
www.altuglasint.com  
www.plexiglas.com

James M. (Jim) Touchette  
President

MJR Enterprises Corp.  
4707 Enterprise Ave. - Unit 5  
Naples, Florida 34104 USA  
Tel: 239-263-0438  
Tel2: 239-263-9886  
Fax: 239-262-6353

jim@mjenterprisescorp.com  
sales@mjenterprisescorp.com  
IM: balisticjim(AOLIM)jim@mjenterprisescorp.com(MSNMessenger)  
jtouchette0711(Skype)  
www.mjrenterprisescorp.com

Tuffak® polycarbonate sheet is a combustible thermoplastic. Observe fire precautions appropriate for comparable forms of wood and paper. For building uses, check code approvals. Impact resistance is a factor of thickness. Avoid exposure to heat or aromatic solvents. Clean with soap and water. Avoid abrasives.

The statements, technical information and recommendations contained herein are believed to be accurate as of the date hereof. Since the conditions and methods of use of the product and of the information referred to herein are beyond our control, Arkema expressly disclaims any and all liability as to any results obtained or arising from any use of the product or reliance on such information; NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE CONCERNING THE GOODS DESCRIBED OR THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specific product designated and may not be applicable when such product is used in combination with other materials or in any process. The user should thoroughly test any application before commercialization. Nothing contained herein constitutes a license to practice under any patent and it should not be construed as an inducement to infringe any patent and the user is advised to take appropriate steps to be sure that any proposed use of the product will not result in patent infringement.

See MSDS for Health & Safety Considerations.

Altuglas® and Tuffak® are registered trademarks of Arkema.  
©2006 Arkema Inc. All rights reserved.  
ADV# 05-064M/APL/05-06