



Makrolon® IR sheet

Welding Face Shields

Makrolon® IR is a polycarbonate sheet product developed to meet ANSI Z87.1, EN 169, and CSA Z94.3 standards for face shield applications. Proprietary additive systems block UV and IR light providing protection during gas flame welding and cutting operations and meeting the requirements for welding shades 3 and 5. Polycarbonate's toughness provides outstanding impact performance and state-of-the-art extrusion manufacturing delivers high optical quality needed for face shield applications.

Applications

Face shields for flame welding and cutting and general IR protection

Typical Properties*			
Property	Test Method	Units	Values
PHYSICAL			
Specific Gravity	ASTM D 792	-	1.2
Water Absorption, 24 hrs	ASTM D 570	%	0.15
Poisson's Ratio	ASTM E 132	-	0.35
Light Transmission, Welding shades 3 and 5	ANSI Z87.1	-	Pass
	EN 169	-	Pass
	CSA Z94.3	-	Pass
MECHANICAL			
Tensile Strength, Ultimate	ASTM D 638	psi	9,500
Tensile Strength, Yield	ASTM D 638	psi	9,000
Tensile Modulus	ASTM D 638	psi	340,000
Elongation	ASTM D 638	%	110
Flexural Strength	ASTM D 790	psi	13,500
Flexural Modulus	ASTM D 790	psi	345,000
Compressive Strength	ASTM D 695	psi	12,500
Compressive Modulus	ASTM D 695	psi	345,000
Instrumental Impact, 0.060"	ASTM D 3763	ft-lbs	11
THERMAL			
Coefficient of Thermal Expansion	ASTM D 696	in/in°F	3.75 x 10 ⁻⁵
Heat Deflection Temperature @ 264 psi	ASTM D 648	°F	270
Heat Deflection Temperature @ 66 psi	ASTM D 648	°F	280
ELECTRICAL			
Arc Resistance			
Stainless Steel Strip Electrodes	ASTM D 495	Seconds	10
Tungsten Electrodes	ASTM D 495	Seconds	120
Dielectric Strength, In air @ 0.125"	ASTM D 149	V/mil	380
FLAMMABILITY			
Ignition Temperature, Self	ASTM D 1929	°F	1070
Ignition Temperature, Flash	ASTM D 1929	°F	870

*Typical properties are not intended for specification purposes.



Bayer MaterialScience

Bayer MaterialScience
119 Salisbury Road
Sheffield, MA 01257
Toll Free: 800.254.1707
Fax: 800.457.3553
info@sheffieldplastics.com
www.sheffieldplastics.com

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether our products, technical assistance and information are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent.