

Polycarbonate AR Sheet

Abrasion-resistant Coated Transparent Polycarbonate

Product Description

Polycarbonate AR is a High Optic transparent polycarbonate sheet with a clear, abrasion resistant, proprietary thermal cured coating applied to one or both surfaces. This coating significantly increases abrasion resistance and surface hardness complimenting the polycarbonate's inherent excellent impact strength & clarity. In addition, this coating enhances both weatherability and chemical resistance. Key applications include machine guards, architectural glazing, drive thru menu boards, spill shield in lamination and outdoor lenses on gas pumps.

Characteristics

- Excellent impact resistance
- Graffiti resistant
- Weatherable uv-resistant
- Excellent optical clarity
- Good heat resistance
- one-side & two-side coated sheets

Applications

- Windows
- Site glasses
- Machine guards
- Manifolds
- Instrument components
- Control panels



General

Extruded Sheet: .030 through .787 thick

Sheet sizes: 48x96 • 48x120 • 60x96 • 72x96 • 80x120

Abrasion-resistant Coated Clear paper masked 2-sides

Agency ratings: ASTM D3935 PC0136 ASTM D • UL746C f1 Recognized • CID A-A-59502 Type III Class 1 Grade A

Standard colors: Clear 112 • Gray 7130 • Bronze 5109

Physical	Nominal Value Unit	Nominal Value Unit	Test Method
Density / Specific Gravity	0.043 lb/in ³	1.200 g/cm ³	ASTM D1505
Abrasion Resistance	Nominal Value Unit	Nominal Value Unit	Test Method
Taber Abrasion – Change in Haze		3 %	ASTM D1044
Test conditions – 500 gram load, 100 revolution exposure, CS-10F Calibrase Wheel		none Visual scratch	internal
Weighted Steel Wool Rub Resistance		none Visual scratch	internal
Test conditions – 14 strokes of #0000 steel wool under a 2 pound (908 gram) rounded point load			
Optical	Nominal Value Unit	Nominal Value Unit	Test Method
Refractive Index	1.586	1.586	ASTM D542
Light Transmittance (100.0 mil)	88 %	88 %	ASTM D1003
Haze (100.0 mil)	1 %	1 %	ASTM D1003
Mechanical	Nominal Value Unit	Nominal Value Unit	Test Method
Tensile Strength (Yield)	8990 psi	62 Mpa	ASTM D638
Tensile Strength (Break)	9430 psi	65 Mpa	ASTM D638
Tensile Elongation (Yield)	7.00 %	7.00 %	ASTM D638
Tensile Elongation (Break)	110 %	110.00 %	ASTM D638
Flexural Modulus ⁴ (1.97 in Span)	339000 psi	2339 Mpa	ASTM D790
Flexural Strength ⁴ (Yield, 1.97 in Span)	13500 psi	93 Mpa	ASTM D790
Taber Abrasion Resistance (1000 Cycles, 1000 g,	10 mg		ASTM D1044

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Impact	Nominal Value Unit	Nominal Value Unit	Test Method
Notched Izod Impact (73°F)	17 ft-lb/in	908 J/m	ASTM D256
Unnotched Izod Impact (73°F)	60 ft-lb/in	3204 J/m	ASTM D4812
Gardner Impact (73°F)	1500 in-lb	169 J	ASTM D3029
Tensile Impact Strength ⁵	260 ft-lb/in ²	564 kJ/m ²	ASTM D1822
Hardness	Nominal Value Unit	Nominal Value Unit	Test Method
Rockwell Hardness	118 R scale	118 R scale	ASTM D785
	70 M scale	70 M scale	ASTM D785
Thermal	Nominal Value Unit	Nominal Value Unit	Test Method
Deflection Temperature 66 psi	279 °F	137 °C	ASTM D648
Deflection Temperature 264 psi	270 °F	132 °C	ASTM D648
CLTE - Flow (-40 to 203°F)	3.80E-05 in/in/°F	6.8E-5 cm/cm/°C	ASTM E831
Thermal Conductivity	1.3 Btu•in/(h•ft ² •°F)	0.19 W/m/K	ASTM C177
Flammability	Nominal Value Unit	Nominal Value Unit	Test Method
Flame Rating (0.029 in)	HB		UL94
Flash Ignition Temperature	896 °F	480.38 °C	ASTM D1929

Chemical Resistance ASTM D-1308

Samples immersed in listed chemicals and then examined for visible attack at 15 minutes, 1 hour, and 24 hours

Chemical	Time for visible attack	Chemical	Time for visible attack
Acetone	> 1 hour	Methylene Chloride	> 24 hours
Methyl Alcohol	> 24 hours	Sodium Hydroxide (10%)	> 24 hours
Isopropyl Alcohol	> 24 hours	Hydrochloric Acid (10%)	> 24 hours
Gasoline	> 24 hours	Sulfuric Acid (10%)	> 24 hours
Kerosene	> 24 hours	Nitric Acid (10%)	> 24 hours
Toluene	> 1 hour		

* This information is based on average resin value specifications and is only to assist and advise you on the current technical knowledge, it is given without obligations or liability.

Cleaning and Graffiti Removal

Solvents and Cleaning Liquids Found Effective Under Laboratory Conditions

Aqueous solutions of the following can be applied carefully with a soft cloth or sponge for ordinary dirt and grime.

Joy® Windex®
Formula 409® Sparkle™

Rinse with clean water before drying with a chamois or cellulose sponge.

Never use an abrasive cleaner or scouring pad.

The following solvents can be used to remove graffiti and other stubborn stains.

Isopropyl Alcohol Methanol
Naphtha (VM&P Grade) Kerosene
Butyl Cellosolve (for paints, inks, lipstick, etc.)

Always remove residual solvent with an aqueous cleaner and a final rinse with clean water.

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Standard sizes and approximate weight (lbs) per sheet

Thickness		Lbs / Sq Ft	48 x 96	60 x 96	72 x 96	48 x 120	80 x 120	Thickness Tolerance
inches	mm							
0.030	0.76	0.19	5.99	7.49	8.99	7.49	12.48	+/- 10%
0.040	1.0	0.25	7.99	9.98	11.98	9.98	16.64	+/- 10%
0.060	1.5	0.37	11.98	14.98	17.97	14.98	24.96	+/- 7%
0.080	2.0	0.50	15.97	19.97	23.96	19.97	33.28	+/- 7%
0.090	2.3	0.56	17.97	22.46	26.96	22.46	37.44	+/- 7%
0.118	3.0	0.74	23.56	29.45	35.34	29.45	49.08	+/- 5%
0.177	4.5	1.10	35.34	44.18	53.02	44.18	73.62	+/- 5%
0.220	5.6	1.37	43.93	54.91	65.89	54.91	91.51	+/- 5%
0.236	6.0	1.47	47.12	58.91	70.69	58.91	98.17	+/- 5%
0.276	7.0	1.72	55.11	68.89	82.67	68.89	114.80	+/- 5%
0.315	8.0	1.97	62.90	78.62	94.35	78.62	131.03	+/- 5%
0.354	9.0	2.21	70.69	88.36	106.03	88.36	147.25	+/- 5%
0.375	9.5	2.34	74.88	93.60	112.32	93.60	155.98	+/- 5%
0.472	12.0	2.95	94.25	117.81	141.37	117.81	196.33	+/- 5%
0.500	12.7	3.12	99.84	124.80	149.76	124.80	207.98	+/- 5%
0.625	15.9	3.90	124.80	156.00	187.20	156.00	259.97	+/- 5%
0.787	20	4.91	157.15	196.44	235.72	196.44	327.36	+/- 5%
1.000	25	6.24	199.68	249.60	299.52	249.60	415.96	+/- 5%

