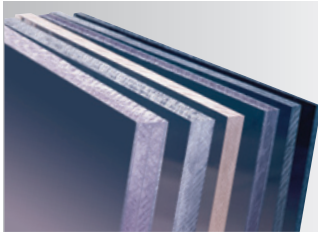




Product Data Sheet, February 2008

Makrolon® AR Abrasion-resistant solid polycarbonate sheet



Your benefits:

- extreme impact strength
- good abrasion resistance
- excellent weathering resistance
- high clarity

Makrolon® AR sheet is an abrasion and enhanced UV resistant polycarbonate sheet that offers glasslike hardness coupled with the impact strength of standard polycarbonate. Additionally, **Makrolon® AR** offers on both surfaces enhanced resistance against yellowing and hazing for an extended service life in high profile architectural glazing. **Makrolon® AR** has a 10-years warranty against breakage and 5-years warranty against delamination and weathering.

Applications:

Typical applications for **Makrolon® AR** sheet include transparent sound barriers, school and hospital shelter glazing. **Makrolon® AR** is also used extensively in correctional and psychiatric facilities. Additionally, the product performs well for view windows and machine guards in harsh chemical environments. Due to its scratch-resistant coating, **Makrolon® AR** cannot be formed like other **Makrolon®** sheets.

	Test Conditions	Typical Values	Unit	Test Method
PHYSICAL				
Density		1.20	g/cm ³	ISO 1183-1
Moisture absorption	after storage in standard climate 23 °C/50 % RH	0.15	%	ISO 62-4
	after storage in water at 23 °C until saturation	0.35	%	ISO 62-1
Refractive index	20 °C	1.586	–	ISO 489
MECHANICAL				
Tensile stress at yield		> 60	MPa	ISO 527-2/1B/50
Elongation at yield		6	%	ISO 527-2/1B/50
Tensile strength		> 60	MPa	ISO 527-2/1B/50
Elongation at break		> 70	%	ISO 527-2/1B/50
Tensile modulus of elasticity		2,400	MPa	ISO 527-2/1B/1
Limiting flexural stress		approx. 90	MPa	ISO 178
Impact strength	Charpy, unnotched	no break	kJ/m ²	ISO 179/1fU
	Charpy, notched	approx. 11	kJ/m ²	ISO 179/1 eA,
	Izod, notched	approx. 10	kJ/m ²	ISO 180/1A
	Izod, notched ¹⁾	approx. 70	kJ/m ²	ISO 180/4A
Taber abrasion resistance	Δ haze after 100 cycles (500 g CS 10F) after 500 cycles	1 – 4 4 – 9	%	ASTM D1044 & ANSI Z26.1
THERMAL				
Vicat softening temperature	Method B50	148	°C	ISO 306
Thermal conductivity		0.2	W/m K	DIN 52612
Coeff. of linear thermal expansion		0.065	mm/m °C	DIN 53752-A
Heat deflection temperature under load	Method A: 1.80 MPa	127	°C	ISO 75-2
	Method B: 0.45 MPa	139	°C	ISO 75-2

The mechanical properties were measured on sheets of 4 mm or 3 mm¹⁾ thickness.

Product Liability Clause: This information and our technical advice – whether verbal, in writing or by way of trials – are given in good faith but without warranty, and this also applies where proprietary rights of third parties are involved. Our advice does not release you from the obligation to verify the information currently provided – especially that contained in our safety data and technical information sheets – and to test products as to their suitability for the intended processes and uses. The application, use and processing of our products and the products manufactured by you on the basis of our technical advice are beyond our control and, therefore, entirely your own responsibility. Our products are sold in accordance with the current version of our General Conditions of Sale and Delivery.



makrolon®
AR



Product Data Sheet, February 2008

Makrolon® AR

Abrasion-resistant solid polycarbonate sheet



i-line

Ideas, innovative, intelligent, interesting...

Bayer Sheet Europe i-line represents the next generation of quality products. This seal guarantees innovative and intelligent first-class solutions at all times for a multitude of requirements.

Light Transmission:

Test Method according to DIN 5036

The stated thicknesses are not all available as standard. Please ask us for more information. The stated values are typical values only.

Light transmission in %	3	4	5	6	8	10	12	15
Makrolon® AR clear 8099	88	87	87	86	85	83	82	80
Makrolon® AR bronze 8850	50	50	50	50	50			

Available sizes:

Makrolon® AR is available in thicknesses of 3 – 15 mm and in the following sizes; other sizes, colors and sheet thicknesses on request.

Colors:

Makrolon® AR clear 8099
Makrolon® AR bronze 8850

Sizes:

3,000 x 2,000 mm
3,000 x 2,000 mm

Permanent Service Temperature:

The permanent service temperature without load is approx. 120°C.

Fire Rating (*):

Oxygen index (LOI) 28%, ISO 4589-2 Method A

Country	Standard	Rating	thickness	Colour
Germany	DIN 4102	B 2	3 – 12 mm	clear 8099
Germany	DIN 5510	S 3 SR2 ST2	8 – 12 mm	clear 8099
Italy	UNO	copertura	3 mm	clear 8099
Italy	UNO	parete	3 – 4 mm	clear 8099

(* fire certificates are limited in time, always check if the mentioned certificate is still valid)

