



Product data sheet, december 2008

Vivak® UV Solid Copolyester Sheets



Your benefits:

- good weather resistance
- excellent thermoformability
- good impact strength
- good fire rating

Solid **Vivak® UV** sheets are made of thermoplastic copolyester. They offer high impact strength, a good fire rating and good weather resistance. These properties are demonstrated by our 10-year guarantee on mechanical strength and optical properties.

Vivak® UV sheets can be rapidly thermoformed at low energy consumption, short production times, extreme degrees of stretching and accurate mold surface reproduction, without predrying. The sheets are easy to screen print and machine.

Vivak® UV clear 2099 is a grade of clear transparent sheet with extremely high light transmission and high gloss.

Vivak® UV white 2130 sheets are translucent white sheets with good light diffusion and a pleasant hue.

Applications:

Ideal fields of application for **Vivak® UV** are: Outdoor P.O.S., displays, poster pillars, vending machines, poster boards and outdoor posters, advertising boards.

	Test Conditions	Typical Values	Unit	Test Method
PHYSICAL				
Density		1.27	g/cm ³	ISO 1183-1
Moisture absorption	after storage in standard climate 23 °C/ 50 % RH	0.2	%	ISO 62-4
	after storage in water at 23 °C until saturation	0.6	%	ISO 62-1
Refractive index	20 °C	1,567	–	ISO 489
MECHANICAL				
Tensile stress at yield		> 45	MPa	ISO 527-2/1B/50
Elongation at yield		4	%	ISO 527-2/1B/50
Tensile strength		> 45	MPa	ISO 527-2/1B/50
Elongation at break		> 35	%	ISO 527-2/1B/50
Elastic modulus		2,000	MPa	ISO 527-2/1B/1
Limiting flexural stress		ca. 80	MPa	ISO 178
Impact strength	Charpy, unnotched	no break	kJ/m ²	ISO 179/1fU
	Charpy, notched	ca. 7	kJ/m ²	ISO 179/1eA
	Izod, notched	ca. 6	kJ/m ²	ISO 180/1A
THERMAL				
Vicat softening temperature	Method B50	80	°C	ISO 306
Thermal conductivity		0.2	W/m K	DIN 52612
Coeff. of linear thermal expansion		0.05	mm/m K	DIN 53752-A
Heat deflection temperature under load	Method A: 1.80 MPa	63	°C	ISO 75-2
	Method B: 0.45 MPa	70	°C	ISO 75-2
ELECTRICAL				
Dielectric strength		16.1	kV/mm	IEC 60243-1
Volume resistivity		10 ¹⁵	Ohm·cm	IEC 60093
Surface resistivity		10 ¹⁶	Ohm	IEC 60093
Dielectric constant	at 10 ² Hz	2.6		IEC 60250
	at 10 ⁶ Hz	2.4		IEC 60250
Dissipation factor	at 10 ² Hz	0.005		IEC 60250
	at 10 ⁶ Hz	0.02		IEC 60250

The mechanical properties were measured on sheets of 4 mm thickness.

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S-Line Bayer Sheet Europe S-Line, the standard product line, represents a range of certified quality products which offer the reliable solution for most applications.

Light Transmission:

Test Method 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 %	2	3	4	5	6	8
Vivak® UV clear 2099	89	88	87	86	85	84
Vivak® UV white 2130	39	30	30	24		
Vivak® UV bronze 2850	68	60	50	45	36	27
Vivak® UV grey 2760		54	46	35	32	

Available sizes:

Vivak® UV is available in thicknesses of 2 – 6 mm and in the following sizes; other sizes, colors and sheet thicknesses on request.

Colors:

Vivak® UV clear 2099
Vivak® UV white 2130

Sizes (Standard):

2,050 x 1,250 mm
3,050 x 2,050 mm

Permanent Service Temperature: The maximum permanent service temperature without load is approx. 65 °C.

Fire Rating: Oxygen index (LOI) 26 % ISO 4589

Country	Standard	Rating	Thickness	Color
Europe	EN13501-1	B-s1, d0 B-s2, d0	2-8 mm 2-6 mm	clear 2099 all colors
Germany	DIN 4102	B1	2-12 mm 5 & 6 mm 5 & 6 mm	clear 2099 bronze 2850 grey 2760
Great Britain	BS 476 Part 7	Class 1Y	2 & 12 mm 2 & 6 mm	clear 2099 white 2130
France	NFP 92-501 & 505	M2	2-5 mm 2-4 mm	clear 2099 white 2130
	NFP 16-101 & 102	F1	2-8 mm 1.5-4 mm 6 mm	clear 2099 white 2130 grey 2760

Glow wire flammability index, IEC 60695-2-12, in °C (*)

	2	3	4
Vivak UV clear 2099	960	960	960
Vivak UV white 2130		960	960

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

Thermoforming:

Owing to their excellent flow and mold surface reproduction, Vivak® UV sheets can be thermoformed at low temperatures without predrying. Because of its low specific heat capacity, Vivak® requires little energy for thermoforming, even for complex 3D-forms.

Bayer Sheet Europe also produces multiwall sheets in polycarbonate (Makrolon® multi UV), and solid sheets in polycarbonate (Makrolon® GP) and in polyester (Vivak® and Axpert®). For more information, take a look at www.bayersheeteurope.com.

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A  Bayer MaterialScience Company



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UV