



Product data sheet, November 2007

Bayblend® MTR

PC/ABS blend sheet



Features:

- excellent fire behaviour
- high stiffness
- excellent thermoforming properties
- halogen free

Bayblend® MTR is a flame retardant PC-ABS blend sheet, developed for mass transportation on land in general and the Railway Interiors Industry in particular. It meets stringent regulations for fire behaviour, electrical safety and resistance to chemicals, hydrolysis and heat. **Bayblend® MTR** is halogen-free to DIN/VDE 0472, Part 815 (0.1 % F, 0.2 % Cl, Br, I). **Bayblend® MTR** also has good impact strength in a wide temperature range (-30°C). The sheet has excellent thermoforming properties and is easy to machine. **Bayblend® MTR** is made to customer needs in several colours and with several textures.

Applications

Bayblend® MTR sheet is specially developed and suited to thermoform medium or large parts for:

- seats
- wall claddings
- ceilings and other interior parts in buses
- trains and metros

	Test Conditions	Typical Values*	Unit	Test Method
PHYSICAL				
Density		1.3	g/cm ³	ISO 1183
Moisture absorption	saturated at 23 °C/50 % RF	0.1	%	ISO 62-4
	saturated in water of 23 °C	0.5	%	ISO 62-1
MECHANICAL				
Tensile stress	at yield	63	MPa	ISO 527-2/1B/50
Elongation	at yield	4	%	ISO 527-2/1B/50
Elongation	at break	> 20	%	ISO 527-2/1B/50
Elastic modulus		3800	MPa	ISO 527-2/1B/1
Impact strength	Charpy unnotched @ 23°C	no break	kJ/m ²	ISO 179/1fU
	Charpy unnotched @ -30°C	no break	kJ/m ²	ISO 179/1fU
	Izod notched @ 23°C	10	kJ/m ²	ISO 180/1A
	Izod notched @ -30°C	7	kJ/m ²	ISO 180/4A
THERMAL				
Vicat softening temperature	Method B50	109	°C	ISO 306
Thermal conductivity			W/m K	DIN 52612
Coeff. of linear thermal expansion		0.052	mm/m° K	DIN 53752-A
Heat deflection temperature under load	Method A: 1.81 MPa	94	°C	ISO/R75 ISO 75
ELECTRICAL				
Dielectric strength		36	kV/mm	IEC 60243-1
Volume resistivity		10 ¹⁵	Ohm-cm	IEC 60093
Surface resistivity			Ohm	IEC 60093
Dielectric constant	at 10 ³ Hz	3.1		IEC 60250
	at 10 ⁶ Hz	3		IEC 60250
				IEC 60250
Dissipation factor	at 10 ³ Hz	0.0046		IEC 60250
	at 10 ⁶ Hz	0.0070		IEC 60250

* own measurements

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BAYBLEND®



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**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.

Fire rating

Application domain	Standard	Country	Rating*
Rail coaches	DIN 5510-2 NF P 92-501,504,-505	Germany France France	S-4/SR-2/ST-2 M1 F1
E&E	UL 94 UL 94-5V UL 94-5V IEC 60695-2-12 IEC 60695-2-13 DIN/VDE 0471 part 815	US US US EU EU Germany	V-0 (1,5 mm) 5VB (2,0 mm) 5VA (3,0 mm) GWFI = 960 °C GWIT = 850 °C 0.1 % F, 0.2 % Cl, Br, I
Building & Construction	DIN 4102-1	Germany	B1 with burning droplets (2,5 mm)
Docket 90 A	ASTM E 162: Flame spread index Is burning droplets		< 35 (2 mm, 3mm) no (2 mm, 3 mm)
Docket 90 A	ASTM E 662: Ds 1.5 ' Ds 4.0 '		< 100 (1,5 mm, 2 mm, 3 mm) < 150 (1,5mm, 2 mm, 3 mm)

*own measurements

Availability

Bayblend® MTR is available with different surface patterns. Colour samples can be provided on request. All grades can be produced with UV protection for outdoor use.

Maximum production widths

Surface structure	extrusion width	thickness
C	1250 mm	2 - 6 mm
Smooth both sides	2050 mm	2 - 6 mm

Machining

Bayblend® MTR sheet is easy to machine with everyday tools. Sawing, drilling, routing, shearing and punching can all be done. Always use sharp tools suited for machining plastics.

Thermoforming

Thorough pre-drying of **Bayblend® MTR** sheets is essential for all thermoforming techniques where the sheet temperature will rise above 160°C. The recommended procedure is to use an air circulating oven set at 110°C for 4 to 24 hours, depending on sheet thickness. **Bayblend® MTR** sheet can be vacuum-formed at temperatures of 185 - 195°C. Use temperature controlled (120°C) aluminium or steel moulds. A good release from the mould can be obtained by providing a draft angle of 4 to 6°.

Assembling

Parts made of **Bayblend® MTR** can be assembled with other plastics, metals and other materials by means of glueing, welding and several mechanical fastening techniques.

Painting and printing

Bayblend® MTR sheets can be painted or printed using various standard techniques. No preliminary surface treatment is necessary, except for cleaning. To avoid compromising the impact strength of **Bayblend® MTR** sheets, paints must be suitable for use on polycarbonate. Products can be obtained from several manufactures of inks and paints. Their instructions must be carefully followed.

Chemical resistance

Bayblend® MTR sheets have good resistance to highly concentrated mineral acids, many organic acids, oxidising and reducing agents, mineral and animal greases and oil, neutral and acid salt solutions, saturated aliphatic and cycloaliphatic hydrocarbons and alcohols (except methyl alcohol). They are partially soluble in aromatic hydrocarbons and soluble in many halogenated hydrocarbons (methylene chloride and ethylene di-chloride are good solvents). Strong alkaline substances such as ammonia and amines decompose it. **Bayblend® MTR** sheets will resist most detergent-based household cleaners.

Bayer Sheet Europe GmbH
Otto-Hesse-Straße 19/T9, 64293 Darmstadt, Germany
Tel. +49 6151 13 03-0
Fax +49 6151 13 03-500
www.bayersheeteurope.com
sales@bayersheeteurope.com

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 **BAYBLEND®**