Product data sheet, November 2007

Bayblend® FR 3030
PC/ABS blend sheet

Features:

- excellent fire behaviour
- good impact strength
- good thermoforming properties
- halogen free

Bayblend® FR 3030 is a flame retardant PC-ABS blend sheet, which meets stringent regulations for fire behaviour, electrical safety, and resistance to chemicals, hydrolysis and heat. It is halogen-free to DIN/VDE 0472, Part 815 (0.1 % F, 0.2 % Cl, Br, I). **Bayblend® FR 3030** sheet has good impact strength in a wide temperature range (-30°C). The sheet has excellent thermoforming properties and is easy to machine. **Bayblend® FR 3030** sheet is made to customer needs in several colours and with several textures.

Applications

Bayblend® FR 3030 is specially developed and suited to thermoform parts for:

- seats, wall claddings, ceilings and other interior parts in buses, trains and metros
- medical systems
- electro industry

	Test Conditions	Typical Values	Unit	Test Method
PHYSICAL				
Density		1.18	g/cm³	ISO 1183
Moisture absorption	saturated at 23 °C/50 % RH	0.20	%	ISO 62, method 4
	saturated in water of 23 °C	0.50	%	ISO 62, method 1
MECHANICAL				
Tensile stress	at yield	69	MPa	ISO 527-2/1B/50
Elongation	at yield	5	%	ISO 527-2/1B/50
Tensile strength			MPa	ISO 527-2/1B/50
Elongation	at break	› 50	%	ISO 527-2/1B/50
Elastic modulus		2700	MPa	ISO 527-2/1B/1
Limiting flexural stress			MPa	ISO 178
Impact strength	Charpy unnotched		kJ/m²	ISO 179/1fU
	Charpy notched		kJ/m²	ISO 179/1 eA, thickness ≥ 4 mm
	Izod notched @ 23°C	40	kJ/m²	ISO 180/1A
	Izod notched @ -30°C	10	kJ/m²	ISO 180/1A
THERMAL				
Vicat softening temperature	Method B50	115	°C	ISO 306
Thermal conductivity			W/m K	DIN 52612
Coeff. of linear thermal expansion		0.076	mm/m °C	DIN 53752-A
Heat deflection temperature under load	Method A: 1.81 MPa	96	°C	ISO/R75 ISO 75
ELECTRICAL				
Dielectric strength		35	kV/mm	IEC 60243-1
Volume resistivity		10^{15}	Ohm.cm	IEC 60093
Surface resistivity		10^{17}	Ohm	IEC 60093
Dielectric constant	at 10^3 Hz	3.2		IEC 60250
Dielectric constant	at 10^6 Hz	3.1		IEC 60250
Dielectric factor	at 10^3 Hz	0.00037		IEC 60250
Dielectric factor	at 10^6 Hz	0.00075		IEC 60250

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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	Germany	S-4/SR-2/ST-2
	NF P 92-501,-503,-504, -505	France	M1
	NF F 16-101,-102	France	F2
E&E	UL 94	US	V-0 (1,5 mm)
	UL 94-5V	US	5VB (2,0 mm)
	UL 94-5V	US	5VA (3,0 mm)
	IEC 60695-2-12	EU	GWFI = 960 °C
	IEC 60695-2-13	EU	GWIT = 850 °C
	DIN/VDE 0471 part 815	Germany	0.1 % F, 0.2 % Cl, Br, I
Building & Construction	DIN 4102-1	Germany	B1 with burning droplets (2,5 mm)

Availability
Bayblend® FR 3030 is available with different surface patterns. Colour samples can be provided on request.

All grades can be produced with UV protection for outdoor use or with a PVDF top layer to protect against graffiti and cleaning agents.

Maximum production widths

Surface stucture	max. extrusion width	thickness
C* & G	1650 mm	2 - 6 mm
Smooth both sides	2050 mm	2 - 6 mm

*as of January 2008

Machining
Bayblend® FR 3030 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® FR 3030** sheet 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® FR 3030 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® FR 3030** can be assembled with other plastics, metals and other materials by means of glueing, welding and several mechanical fastening techniques.

Painting and printing
Bayblend® FR 3030 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® FR 3030** 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® FR 3030 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 dichloride are good solvents). Strong alkaline substances such as ammonia and amines decompose it. **Bayblend® FR 3030** sheets will resist most detergent-based household cleaners.

Bayblend® FR 3030 sheet can be protected against chemicals on one side with a PVDF layer.

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