



Bayloy® and Bayblend® Two brands, countless possibilities

Bayloy® and Bayblend® sheets are coloured sheets based on polycarbonate or polycarbonate blends. The range has been specifically developed for thermoforming applications, which have to fulfill the highest conditions. Bayloy® and Bayblend® sheets can be manufactured in almost every colour according to the individual customer wishes.

What benefits do Bayloy® and Bayblend® sheets offer?

Bayloy® and Bayblend® sheets are:

- extremely break-resistant. Due to their high impact resistances, they are excellently suited for technical parts.
- easy to thermoform. Good flowing properties, in combination with short cycle times, provide optimum thermoforming conditions.
- fire resistant. Depending on the type, they are flame retardant and halogen-free, complying with the most stringent fire standards.
- available with a wide range of properties. Whatever your requirements, we will offer a solution.

Where are Bayloy® and Bayblend® sheets employed?

Applications are based on high impact resistance, high heat deflection temperature and halogen free fire behaviour of several Bayloy® and Bayblend® grades. Bayloy® and Bayblend® sheets are used in E&E, body panels and exterior accessories for heavy duty vehicles, interior cladding in public transport, light weight trolleys and luggage, medical systems, door skins a.o. For outside use, Bayloy and Bayblend sheets can be produced with UV-protection.

What special properties do the different grades offer?

Bayloy® 10 is an opaque polycarbonate sheet. Bayloy® 10 combines good fire behaviour and extreme impact strength in a wide temperature range (-100°C up to +120°C).

Bayloy® 21 is an opaque sheet based on a polycarbonate blend. It offers properties close to polycarbonate, combined with improved thermoforming behaviour. Bayloy® 21 combines excellent impact strength in a wide temperature range.

Bayloy® 50 is an opaque sheet made of thermoplastic polyester. It has been specifically developed for thermoforming applications. It can be rapidly thermoformed at low energy consumption, without pre-drying.

Bayblend® T65 sheet is made of the PC/ABS blend resin offering an alternative for other technical plastics or metals. Bayblend® T65 combines good fire behaviour and extreme notched impact strength in a wide temperature range.

Bayblend® FR 3030 is a flame retardant thermoplastic polymer blend based on PC and ABS. It is noted, in particular, for its favorable combination of mechanical and thermal properties as well as its excellent thermoforming behaviour. With a chlorine, bromine and iodine content of < 0.2 % and a fluorine content of < 0.1 % by weight, it is classified as “halogen-free” under the terms of DIN/VDE 0472, part 815.



| Test conditions | Bayloy 10 | Bayloy 21 | Bayloy 50 | Bayblend T65 | Bayblend FR3030 | Unit | Test Method |
|---|----------------------------------|---|-----------------------------|-----------------------------|--|-------------------------|--------------------------------------|
| Physical | | | | | | | |
| Density | 1.20 | 1.24 | 1.27 | 1.13 | 1.18 | g/m ³ | ISO 1183 |
| <i>Moisture absorption:</i> | | | | | | | |
| Equilibrium at 23°C/50%RF | 0.15 | 0.17 | 0.20 | 0.20 | 0.20 | % | ISO 62, method 4 |
| Saturation in water at 23°C | 0.35 | 0.45 | 0.60 | 0.70 | 0.50 | % | ISO 62, method 1 |
| Mechanical | | | | | | | |
| Tensile modules | 1mm/min 2400 | 2200 | 2020 | 2200 | 2700 | MPa | ISO 527-2/1B/1 |
| Tensile stress | at yield 65 | >60 | >45 | 52 | 69 | MPa | ISO 527-2/1B/50 |
| Elongation | at yield 6 | 5 | 4 | 4.2 | 5 | % | ISO 527-2/1B/50 |
| Elongation | at break > 50 | > 50 | > 35 | > 50 | > 50 | % | ISO 527-2/1B/50 |
| <i>Impact strength:</i> | | | | | | | |
| Charpy unnotched @ 23° C | no break | no break | no break | | | kJ/m ² | ISO 179/1 fU |
| Charpy unnotched @ -30°C | no break | | | | | kJ/m ² | ISO 179/1 fU |
| Charpy notched @ 23°C; 3 mm | 75P | | | | | kJ/m ² | ISO 179/1 eA |
| Charpy notched @ -30°C; 3 mm | 14C | | | | | kJ/m ² | |
| Izod notched @ 23°C; 3.2 mm | 90P | ca. 6 | ca. 6 | 45 | 40 | kJ/m ² | ISO 180/1A |
| Izod notched @ -30°C; 3.2 mm | 14C | | | 41 | 10 | kJ/m ² | ISO 180/1A |
| Thermal | | | | | | | |
| Vicat softening temperature, 50N; 120°C/h | 148 | 101 | 80 | 120 | 115 | °C | ISO 306 |
| Thermal conductivity 23°C | 0.20 | 0.25 | 0.2 | | | W/mK | ISO 8302 |
| Coeff. of linear thermal expansion | 0.065 | 0.057 | 0.05 | 0.080 | 0.076 | mm/m°C | ISO 11359-1,-2 |
| <i>Heat deflection temperature under load:</i> | | | | | | | |
| method A: 1.81 MPa | 127 | 87 | 63 | 100 | 96 | °C | ISO/R75 ISO 75 |
| Electrical: | | | | | | | |
| Dielectric strength | 1 mm 35 | 25 | 20 | 35 | 35 | kV/mm | IEC 60243-1 |
| Volume resistivity | 10 ¹⁶ | 10 ¹⁶ | >10 ¹⁵ | 10 ¹⁴ | 10 ¹⁵ | Ohm/cm | IEC 60093 |
| Surface resistivity | 10 ¹⁴ | 10 ¹⁴ | >10 ¹⁶ | 10 ¹⁶ | 10 ¹⁷ | Ohm | IEC 60093 |
| Dielectric constant | at 10 ³ Hz 3.1 | 2.8 | 2.6 | 3.1 | 3.2 | | IEC 60250 |
| Dielectric constant | at 10 ⁶ Hz 3.0 | 2.7 | 2.4 | 3.0 | 3.1 | | IEC 60250 |
| Dissipation factor | at 10 ³ Hz 0.0005 | 0.002 | 0.005 | 0.0003 | 0.00037 | | IEC 60250 |
| Dissipation factor | at 10 ⁶ Hz 0.009 | 0.015 | 0.02 | 0.00085 | 0.00075 | | IEC 60250 |
| Burning Behaviour | | | | | | | |
| UL 94 | Thickness HB | | | HB | V-0 (1.5 mm) 5VB (2.0 mm) 5VA (3.0 mm) | Class Class Class | |
| UL 94-5V | | | | | | | |
| UL 94-5V | | | | | | | |
| Glow wire test (GWFI) | 1-2 mm 800 | | 850 | | 960 (2 mm) | °C | IEC 60695-2-12 |
| Glow wire test (GWFI) | 3 mm 900 | | 850 | | | °C | EC 60695-2-12 |
| <i>Fire test for materials in railway applications</i> | | | S-4, SR-2, ST-2 | | S-4, SR-2,ST-2 | Class | DIN 5510-2 |
| <i>Fire test for materials in building & construction</i> | | B2 all colors B1 3 mm grey burning droplets | B1 with burning droplets | | | Class | DIN 4102-1 |
| European fire classification | EN ISO 11925-2+ EN 13823:2002 | | | Bs1d0 for grey | | Class | EN 13501-1 |
| European fire classification | EN ISO 11925-2+ EN 13823:2002 | | | Bs2d0, 2-6 mm all colors | | Class | EN 13501-1 |
| French Building & Construction | | | | | M1 F2 | Class Class | NF P 92-501/-505 NF F 16-101/-102 |

Availability

Depending on type and surface patterns, the Bayloy® and Bayblend® sheets are available with maximum width of 2050 mm in thickness from 1 to 12 mm. Bayloy® and Bayblend® sheets can be manufactured with UV protection for exterior applications.

The company

Bayer Sheet Europe belongs to Bayer MaterialScience, one of the major global players in the polycarbonate industry. The strategic integration of the company combines decades of experience, competence and know-how in the production of high-quality polycarbonate and polyester sheets.

Bayer Sheet Europe offers transparent Makrolon® polycarbonate-, Axpert® polyester- and Vivak® copolyester sheet. Its position towards the thermoforming market has been strengthened with the introduction of opaque sheets made of PC (Bayloy®) and PC/ABS (Bayblend®). Based on our ISO 9001 certified Production System, we are able to offer sheets which meet the highest requirements and which create added value for our customers.

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bayloy®



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