



Product data sheet, February 2008

# Bayloy® 21

## Polycarbonate blend sheet

**Benefits:**

- predrying not necessary
- good impact strength
- good thermoforming properties
- good fire behaviour

**Bayloy® 21** is an opaque coloured sheet based on a polycarbonate blend. It has been specifically developed for thermoforming applications. It offers properties close to polycarbonate, combined with improved thermoforming behaviour and the possibility to avoid predrying. **Bayloy® 21** combines excellent impact strength in a wide temperature range. The sheets are easy to machine. **Bayloy® 21** is available in several colours and with several textures.

**Applications:**

**Bayloy® 21** is particularly suited for vacuum formed parts in a broad range of applications, such as:

- cladding and door panels
- material handling trays
- machine housings and shields

	Test Conditions	Typical Values	Unit	Test Method
<b>PHYSICAL</b>				
Density		1.24	g/cm <sup>3</sup>	ISO 1183-1
Moisture absorption	saturated at 23°C/50% RF	0.17	%	ISO 62-4
	saturated in water of 23°C	0.45	%	ISO 62-1
<b>MECHANICAL</b>				
Tensile stress	at yield	> 60	MPa	ISO 527-2/1B/50
Elongation	at yield	5	%	ISO 527-2/1B/50
Tensile strength		> 60	MPa	ISO 527-2/1B/50
Elongation	at break	> 50	%	ISO 527-2/1B/50
Elastic modulus		2,200	MPa	ISO 527-2/1B/1
Limiting flexural stress		approx. 80	MPa	ISO 178
Impact strength	Charpy, unnotched	no break	kJ/m <sup>2</sup>	ISO 179/1fU
	Charpy, notched	approx. 7	kJ/m <sup>2</sup>	ISO 179/1 eA
	Izod, notched	approx. 6	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL</b>				
Vicat softening temperature	Method B50	101	°C	ISO 306
Thermal conductivity		0.25	W/m °C	DIN 52612
Coeff. of linear thermal expansion		0.057	mm/m °C	DIN 53752-A
Heat deflection temperature under load	Method A: 1.80 MPa	87	°C	ISO 75-2
	Method B: 0.45 MPa	115	°C	ISO 75-2
<b>ELECTRICAL</b>				
Dielectric strength		25	kV/mm	IEC 60243-1
Volume resistivity		10 <sup>16</sup>	Ohm-cm	IEC 60093
Surface resistivity		10 <sup>14</sup>	Ohm	IEC 60093
Dielectric constant	at 10 <sup>3</sup> Hz	2.8		IEC 60250
	at 10 <sup>6</sup> Hz	2.7		IEC 60250
Dissipation factor	at 10 <sup>3</sup> Hz	0.002		IEC 60250
	at 10 <sup>6</sup> Hz	0.015		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.

### Availability:

**Bayloy® 21** is available with 3 different surface finishings and in following sizes:

	surfacing finishing	extrusion width	thickness
Bayloy 21	glossy/glossy	1.250 mm	1 – 2 mm
Bayloy 21 NR	non reflective/glossy	1.250 mm	1 – 2 mm
Bayloy 21 G	patterned/glossy	1.250 mm	1 – 2 mm

All grades can be produced with UV protection for outside use

### Permanent service temperature:

Max. service temperature in air: 85 °C

Min. service temperature: -40 °C

### Standard colours:

light grey 704

dark grey 705

Other colours on request.

### Machining

Due to its excellent properties **Bayloy® 21** sheet is easy to machine with usual tools. Sawing, drilling, routing, shearing and punching can be applied. Always use sharp tools that are suited for machining plastics.

### Thermoforming

Predrying of **Bayloy® 21** sheets before thermoforming can be avoided during the first month after production of the sheets. After that period, the sheets can be predried using an air circulating oven set at 90°C for 4 to 24 hours, depending on sheet thickness. **Bayloy® 21** sheet can be vacuum formed at the temperatures of 150 - 185°C. Use temperature controlled aluminium or steel moulds. A good release of the moulding can be obtained by providing a draft angle of 4 to 6°.

### Assembling

Parts made of **Bayloy® 21** can be assembled with other plastics, metals and other materials by means of glueing, welding and several mechanical fastening techniques.

### Painting and printing

**Bayloy® 21** sheets can be painted or printed with several standard techniques. Except for cleaning, no preliminary surface treatment is necessary. To avoid influence on the impact strength of **Bayloy® 21** sheets, paints must be suitable for use on polycarbonate and thermoplastic polyester. Suitable products are available from several manufactures of inks and paints, whose instructions must be carefully followed.

### Chemical resistance

**Bayloy® 21** sheets have good resistance against mineral acids up to high concentrations, 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. **Bayloy® 21** sheets have good resistance against most detergent based household cleaners.