



Product data sheet, February 2007

Axpet® Solid polyester sheet



Your benefits:

- good impact strength
- good fire rating
- suitable for food-contact applications

Solid **Axpet®** sheets are made from thermoplastic polyester. They offer high impact strength, a good fire rating and are suitable for food-contact applications. **Axpet®** is resistant to chemicals and fully recyclable.

Axpet® clear 099 is a clear-transparent sheet with high light transmission and gloss.

Axpet® NR clear 099 is a transparent sheet with a matt non-reflective finish on one side.

Axpet® white 100 is a white sheet that is opaque even in small thicknesses.

Axpet® white 130 is a translucent sheet offering good light diffusion combined with a pleasant white color.

Axpet UV clear 2099 is a clear transparent sheet with UV protection on both sides to prevent visible yellowing.

Applications:

Ideal fields of indoor application for **Axpet®** are: P.O.S. (displays, price tag holders, shelf partitions), poster glazing, poster boards (also backlit), direction signs, promotional symbols, food containers and trays, decorative inserts, pharmaceutical products, flat machine guards.

The sheets can be machined and screen printed with ease. Owing to the crystallization properties of polyester, the sheet may turn white during thermoforming. Line-bent **Axpet®** sheets show a hinge effect and are ideal for cold folding. For outdoor applications it is recommended to use **Axpet® UV** sheets.

| | Test Conditions | Typical Values | Unit | Test Method |
|--|--|------------------|-------------------|-----------------|
| PHYSICAL | | | | |
| Density | | 1.33 | 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 | 0.5 | % | ISO 62-1 |
| Refractive index | 20 °C | 1.585 | – | ISO 489 |
| MECHANICAL | | | | |
| Tensile stress at yield | | > 55 | MPa | ISO 527-2/1B/50 |
| Elongation at yield | | 4 | % | ISO 527-2/1B/50 |
| Tensile strength | | > 55 | MPa | ISO 527-2/1B/50 |
| Elongation at break | | > 25 | % | ISO 527-2/1B/50 |
| Elastic modulus | | 2,500 | 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. 4 | kJ/m ² | ISO 179/1eA |
| | Izod, notched | ca. 3 | kJ/m ² | ISO 180/1A |
| THERMAL | | | | |
| Vicat softening temperature | Method B50 | 75 | °C | ISO 306 |
| Thermal conductivity | | 0.25 | 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 | | 60 | kV/mm | IEC 60243-1 |
| Volume resistivity | | 10 ¹⁵ | Ohm-cm | IEC 60093 |
| Surface resistivity | | 10 ¹⁶ | Ohm | IEC 60093 |
| Dielectric constant | at 10 ³ Hz | 3.4 | | IEC 60250 |
| | at 10 ⁶ Hz | 3.1 | | IEC 60250 |
| Dissipation factor | at 10 ³ Hz | 0.015 | | IEC 60250 |
| | at 10 ⁶ Hz | 0.056 | | 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 according 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 % | 0.8 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 |
|-------------------------|-----|-----|-----|-----|-----|----|----|----|
| Axpet® clear 099 | 90 | 89 | 89 | 88 | 87 | 86 | 85 | 84 |
| Axpet® NR clear 099 | 88 | 87 | 87 | 86 | | | | |
| Axpet® white 100 | | < 2 | | < 1 | < 1 | | | |
| Axpet® white 130 | | 28 | 28 | 28 | 30 | | | |
| Axpet® UV clear 2099 | | 89 | | 88 | 87 | 86 | 85 | 84 |

Available sizes:

Axpet® is available in thicknesses of 0.8 - 6 mm and in the following sizes; other sizes, colors and sheet thicknesses on request.

Colors:

Axpet® clear 099 Axpet® white 100 Axpet® UV clear 2099
 Axpet® NR clear 099 Axpet® white 130

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. 60°C.

Fire Rating (*) Oxygen index (LOI) 25 %, ISO 4589

| Country | Standard | Rating | Thickness | Color |
|---------|------------------|----------------------------------|--|---|
| Germany | DIN 4102 | B1 (indoors) burning droplets | 0.8 - 6 mm 0.8 - 2 mm 1 - 4 mm | clear 099 NR clear 099 white 130 |
| UK | BS 476 Part 7 | Class 1Y | 1.5 & 6 mm | clear 099 |
| France | NFP 92-501 & 505 | M1 M2 | 6 mm 0.8 - 5 mm 0.8 - 4 mm 1 - 4 mm | clear 099 clear 099 NR clear 099 white 130 |
| | NFP 16-101 & 102 | F1 | 0.8 - 6 mm 1 - 4 mm | clear 099 white 130 |

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

| | 0.8 | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|---|---|
| Axpet® clear 099 | 960 | 960 | 960 | 960 | | 960 | 960 | | |
| Axpet® NR clear 099 | | 900 | | | | | | | |
| Axpet® white 100 | | 900 | | 960 | | | | | |
| Axpet® white 130 | | 960 | 960 | 960 | | 960 | 960 | | |

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

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

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