



Product Information Platilon® U

Highly Elastic Polyurethane Films

Typical Properties

| Basic Material | | | Polyurethane (Ester) | | | Polyurethane (Ether) | |
|---------------------------------|--|-------------------|----------------------|--------------------|--------------------|----------------------|--------------------|
| Grade | | | 2102 A | 4100 D | U04/PE | 4201 AU | U073 |
| Property | Standard/ Procedure | Unit | | | | | |
| Density | calculated | g/cm ³ | 1,21 ¹⁾ | 1,21 ¹⁾ | 1,17 ¹⁾ | 1,15 ¹⁾ | 1,12 ¹⁾ |
| Softening range | TMA Onset – Endset internal method | ° C | 150 - 175 | 155 - 175 | — | 155 - 185 | 160 - 200 |
| Hardness | DIN 7619-1, DIN EN ISO 868 or ASTM D2240 | Shore A | 93 ²⁾ | 94 ²⁾ | 86 ²⁾ | 87 ²⁾ | 87 ²⁾ |
| Tensile stress at break | DIN EN ISO 527 | MPa | 75 ³⁾ | 75 ³⁾ | 55 ³⁾ | 65 ³⁾ | 65 ³⁾ |
| Tensile stress at 50% strain | DIN EN ISO 527 | MPa | 6 - 10 | 7 - 10 | 5 - 7 | 5 - 7 | 6 - 7 |
| Tensile strain at break | DIN EN ISO 527 | % | 450 ³⁾ | 450 ³⁾ | 650 ³⁾ | 500 ³⁾ | 650 ³⁾ |
| Tear propagation resistance | DIN ISO 34-1, B | kN/m | 75 ³⁾ | 80 ³⁾ | 70 ³⁾ | 50 ³⁾ | 60 ³⁾ |
| UV-stability | empirical | - | o | o | o | x | o |
| Hydrolysis resistance | empirical | - | o | o | o | xx | xx |
| Microbial resistance | empirical | - | o | o | o | x | x |
| Weldability | empirical | - | xx | xx | x | xx | x |
| Thermoformability | empirical | - | xx | xx | x | xx | x |
| Carrier film (PE) | | | no | no | yes | no | yes |

¹⁾ Density values for 50 µm films. Were calculated based on information by raw material suppliers and the film's composition.

²⁾ Based on data for the TPU resins provided by their suppliers and based on suppliers standard/procedure, not measured for film sample.

³⁾ The values given are averaged values over a longer period of time for 50µm films. The average values for certain product variants may vary up to +/- 30 % depending on width or orientation.

Comparative data:

xx = excelent
x = good
o = limited

Film Formats

| | | |
|-----------|-------------------|---|
| Thickness | (μm) | 25 – 1000 (limitations depending on film grade and width) |
| Width | (mm) | 1000 – 2500 (limitations depending on film grade and thickness) |
| Colours | | natural, black, white (other colours upon request) |

Regarding thickness and width, certain interdependencies may apply. Please consult with your customer service representative. Blown film may show an orientation in either machine or cross direction. MD/CD values may vary depending on thickness and width. Our “General Conditions of Sale” also apply.

Product Description

Platilon® U is the trade name for extruded thermoplastic polyurethane (TPU) films made by Covestro Films GmbH. The range currently includes aromatic TPU based on polyester and polyether.

Properties

Platilon® U films are noted for the following properties:

- high abrasion resistance
- flexibility over a wide temperature range
- high resistance to oils, greases and solvents
- good weathering resistance
- good microbial and hydrolysis resistance of polyether TPU
- good resistance to high-energy radiation
- free of plasticisers
- breathable: watertight, but high water vapour transmission rate
- good adhesion to foams, adhesives, inks and many substrates

Applications

The wide range of properties of Platilon® U films is used in many different applications, such as the following:

- Automotive:
for the production of various interior trim parts e.g. headliners, door panels, seats, parcel shelves, sound insulation parts
- Building & Construction:
roof linings, pipe relining
- Medical:
colostomy bags, inflatable mattresses, anti-decubitus mattresses, wound dressings, extra corporal breast prosthesis
- Industrial:
tank liners, air ducting, conveyor belts etc.
- Sports and Leisure:
sportswear, football outer skins and bladders, air cushions of athletic shoes etc.

Processing

Platilon® U films are suitable for:

- thermoforming and deep drawing
- welding by all standard methods
- heat lamination and flame-bonding
- coating and bonding with adhesives
- printing
- back-foaming
- back injection moulding

The values provided within this Product Information are typical values only. Unless explicitly agreed in written form, they do not constitute a binding material specification or warranted values. Values may be affected by thickness and packaging, the processing conditions, coloring/pigmentation and additives of the product. Unless specified to the contrary, the property values given have been established on standardized test specimens at room temperature. The values represent the data set describing the general property profile of a certain product. They are for example not always part of the batch release procedure and therefore not subject of a regular quality specification underlying a statistical evaluation.

The manner in which you use our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, are beyond our control. Therefore, it is imperative that you test our products to determine suitability for your processing and intended uses. Your analysis must at least include testing to determine suitability from a technical, health, safety, and environmental and regulatory standpoint. Such testing has not necessarily been done by Covestro Films GmbH, and Covestro Films GmbH has not obtained any approvals or licenses for a particular use or application of the product, unless explicitly stated otherwise. If the intended use of the product is for the manufacture of a pharmaceutical / medicinal product, medical device¹⁾ or of pre-cursor products for medical devices or for other specifically regulated applications which leads or may lead to a regulatory obligation of Covestro Films GmbH, Covestro Films GmbH must explicitly agree to such application before the sale.

Any samples provided by Covestro Films GmbH are for testing purposes only and not for commercial use.

Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request.

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1) Please see the "Guidance on Use of Covestro Products in a Medical Application" document. For more information on Covestro products in Medical Applications, please request from your sales support contact our Guidance document: GUIDANCE ON USE OF COVESTRO PRODUCTS IN A MEDICAL APPLICATION.

