INSQIN® new partially bio-based and mass balanced polyurethane dispersions for textile coatings.

Impranil® CQ

bluesign SYSTEM PARTNER

ROADMAP TO ZERO By ZDHC

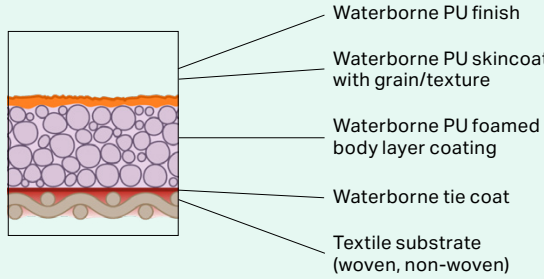
covestro

High performance enabled by nature: New partially bio-based and mass balanced polyurethane dispersions for textile coatings

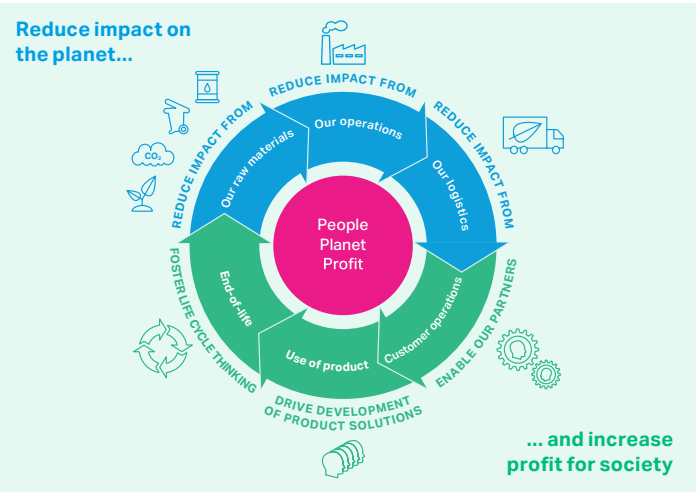
Increasingly, sustainability is affecting the product and raw material purchasing decisions of customers, brand owners, and consumers. Biomass is already the raw material basis for around 10% of all chemical products. New technologies, cooperative agreements and product developments will enable the textile coating industry to move forward in using more products based on renewable resources.

Covestro has developed a technology to significantly raise the content of alternative resources in polyurethane dispersions (PUDs). This makes new levels of sustainability possible for PU-coated textile materials. Thanks to this development, it is now possible for manufacturers to produce coated fabrics with a lower content of fossil-based raw materials. These partially bio-based or mass balanced products offer the same level of properties as products based on traditional raw materials.

Synthetic coated textile structure



Sustainability targets



Key benefits of **Impranil® CQ** PUDs:

- 34%-67% alternative carbon content derived from non-fossil-based inputs for partially bio-based PUDs.
- Up to 78 wt.-% alternative raw material share for mass-balance certified PUDs containing recycled bio-circular attributed content.
- Good light fastness, excellent resistance to abrasion.
- Excellent perceptual quality.
- More sustainable thanks to reduced CO_2 footprint.
- Better water and energy utilization during production.
- Suitable to be used for a variety of textile coating applications.
- Excellent compatibility with conventional PUDs.
- Mass-balance products are chemically and physically identical to the conventional products and can be easily implemented within your production process, with no technical risk and no further approvals.

Product	Type	Verification process*	Alternative carbon content share [%] / alternative raw material share [wt.-%]**	Solid content [%] (DIN EN ISO 3251)	100% Modulus [MPa] (DIN 53504)***	Tensile Strength [MPa] (DIN 53504)***	Elongation at Break [%] (DIN 53504)***
Impranil® CQ 2566	Partially bio-based polyether	Segregation approach	~67	29-31	5	52	760
Impranil® CQ 2578	Partially bio-based polyester	Segregation approach	~56	50	1.7	12	800
Impranil® CQ 2519	Partially bio-based polyester	Segregation approach	~38	40	9	40	450
Impranil® CQ 2510	Partially bio-based polyester	Segregation approach	~50	50	2.5	30	800
Impranil® CQ DLU	Partially bio-based polyether/ polycarbonate	Segregation approach	~34	54-56	2.5	25	700
Impranil® CQ DLP-R	Polyester	Mass balance approach	~78	48-52	0.9	10	1100
Impranil® CQ DLU MS	Polyether/Polycarbonate	Mass balance approach	~48	58-62	2-3	30	700

*Segregated process allows traceability of renewable feedstock in end products; ISCC PLUS certification to secure transparency, trustworthiness of the Mass Balance method
**Segregation approach: bio-based carbon content share [%], expressed as fraction of total carbon content, calculated internally and analytically verified through external C14 measurement; Mass balance approach: Alternative raw material share [wt.-%] (on solids, without water). The percentage refers to the proportion of bio-circular attributed content relative to the total mass of the product in its delivery form, calculated using the ISCC PLUS certified mass balance.
***These values provide general information and are not part of the product specification.

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[1] Please see the "Guidance on Use of Covestro Products in a Medical Application" document.
Edition: 2026