Advancing Industries with High-performance TPU solutions

covestro

Inventor and a leader in high-tech material solutions

Covestro is among the **world's largest polymer companies.** Business activities are focused on the manufacture of **high-tech polymer materials** and the development of **innovative solutions** for products used in many areas of daily life.

The **main segments** served are the automotive, construction, wood processing and furniture, and electrical and electronics industries. Other sectors include sports and leisure, cosmetics and health.

Together with our partners and customers, we are taking big steps to tackle a fundamental challenge: **Shifting towards a Circular Economy.**

The everything specialist for high-value TPU applications

Thermoplastic polyurethane (TPU) is a melt-processable thermoplastic elastomer and has high wear resistance, flexibility over a wide range of temperatures, and high elasticity over the entire hardness range.

Its properties can be changed by the selection of raw-materials, which give the TPUs a rich variety and versatility as future-oriented products.

- High abrasion resistance
- Flexible over a wide temperature range
- High elongation, tear strength and elasticity
- Resistant to oil and gasoline
- Hydrolytic stability and microbial resistance

TPU product brands

Desmopan® | **Texin®** | **Utechllan®**

Covestro TPU Production in india

Covestro is a leading global producer of advanced and high-performance polymers. Our innovative developments in polyurethanes, polycarbonates, coatings, adhesives, specialty raw materials, and thermoplastic polyurethane elastomers enhance products across diverse markets.

Covestro India's headquarters is located in Navi Mumbai at Empire Tower, Cloud City Campus, Airoli. We are committed to making this world a brighter place through our work and innovations.

We focus on 'Innovation Inspired by Sustainability', contributing to the 'Make in India' initiative. Covestro India develops solutions for infrastructure, mobility, energy, and technology sectors, creating sustainable products for future needs.

Our Cuddalore site specializes in the production of Thermoplastic Polyurethane (TPU), manufacturing both polyester and polyether-based products. It has been an important manufacturing facility in India since 1988.

The facility features modern production equipment and automated manufacturing systems to ensure consistent product quality and efficient operations.

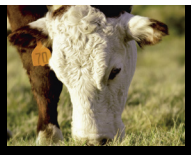
In line with Covestro's global commitment to environmental stewardship, the Cuddalore unit maintains high environmental standards and implements sustainable manufacturing practices.

Key focus industries

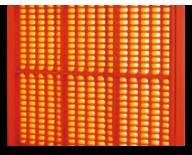
As **a high-performance material,** TPU offers maximum flexibility and reliability with superior properties tailored to specific needs. Our innovative TPU solutions find applications across diverse industries like sport & leisure, industrial, automotive, construction and electronics.

Industrial & Agricultural | Sport & Leisure | Automotive & Transportation | Electronics | Construction

Industrial and Agricultural


Animal identification


Belts & Profiles


Mining


Wheels and Rollers

For demanding applications

In Industrial and Agricultural sector, we serve a range of applications including animal identification, belts, mining, hoses and tubes.

Our products provide puncture and abrasion resistance, along with an excellent microbe and hydrolysis resistance.

For food contact application, we have a dedicated portfolio complies with the European and US regulations.

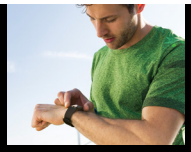
Animal identification tags: A tough material for a demanding application

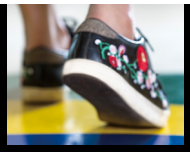
Desmopan® thermoplastic polyurethanes include specialized grades created to meet the high demands of agricultural animal tagging. Selecting the right material for animal identification tags is essential because they typically have to withstand extreme conditions for several years.

Key Benefits

- **Ultra-durable:** Designed for high wear, abrasion and weather resistance.
- **Strong:** The material has outstanding mechanical properties.
- **Long lasting:** Has good microbe and hydrolysis resistance.
- **Short cycle times:** Injection molding ensures ease of manufacture.

Sports and Leisure


Apparel and Outdoor


Fashion and Safety Shoes

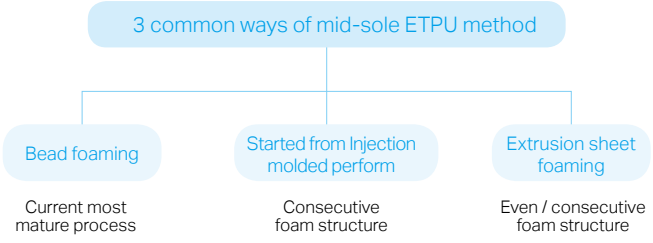

Sport Shoes


Ski Boots

For a more agile life

Sports and leisure activities help increase the quality of life.

Through cutting-edge material science and inspired design thinking, Covestro TPU solutions elevate the performance and design of sports and leisure products like footwear, apparel and outdoor gear. enhance the convenience and experience of modern active living.



SCF Direct Injection Foaming Technology

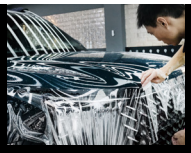
Meeting Market Evolution

Our advanced TPU series with SCF technology delivers ultra-lightweight solutions with superior cushioning and energy return. The material creates high-performance while maintaining production efficiency. Recyclable without chemical blowing agents, it supports circular economy goals while ensuring long-term dimensional stability.

Key Benefits

- **High Performance:** Superior mechanical properties and durability compared to EVA with minimal cost impact.
- **Ultra-Light Weight:** Advanced SCF technology enables low-density foams enhancing comfort and performance.
- **Process Automation:** Streamlined production through integrated injection molding, reducing assembly steps.
- **Sustainable Solution:** Chemical blowing agent-free process enables 100% recyclability with reduced carbon footprint.

Automotive and Transportation


PPF, Body, chassis & structure


Interior


Cables


Rail

Effortless Driving

Comfort isn't just about how hard or soft a vehicle feels. A comfortable ride is culmination of firmness and the way a vehicle's suspension filters out imperfections on road surface. A truly comfortable drive is one that gives an experience of a magic carpet ride, almost if not literally.

Interior & exterior products made from Desmopan®, Utechllan® and Texin® ensures longevity and enables effortless driving.

Key Features:

- Excellent resilience property
- Excellent bondability with metals and plastic
- Excellent dynamic properties & flex fatigue resistance
- Soft feel, vibration dampening
- Low VOC, FOG, zero odour

The E-Mobility Movement

E-Mobility is the future, which signifies efficient design and use of clean and renewable energy. Acceptability of E-Vehicles also depends on the efficient recharging of vehicles, which can be made possible by installing charging stations.

Desmopan®, Texin® and Utechllan® are made keeping this future trend in mind. The fine-grade TPUs are used as sheathing on the charging cables, which makes them high-performance long-lasting products.

Key Features:

- Flame retardant and non-flame retardant grades
- Excellent mechanical properties, wear, tear & abrasion resistance
- Excellent flexibility even at subzero temperatures
- Resistance to external conditions
- Non-halogenated

TPU solution for high-performance Surface Protection (PPF)

TPU-based Paint Protection Film: Performance Meets Protection

As the core layer of Paint Protection Film (PPF) applications, our engineered TPU delivers exceptional durability and protection while maintaining optical clarity. Our formulations achieve the perfect balance of toughness and conformability required for demanding automotive and industrial applications. The customizable nature of our TPU chemistry ensures long-term performance with superior yellowing resistance, while enabling ease of installation to meet diverse market requirements.

Key benefits

Durability

- Prolong surface protection against UV, chemicals, acid rain, and debris
- Superior yellowing resistance proven through UV and QUVA aging tests

Adaptability

- Performs in extreme temperatures
- Easy installation, minimal maintenance
- Compatible with various materials and extrusion processes

Aesthetics

- High optical clarity and color accuracy
- Versatile surface effect options
- Self-healing capability for scratch repair

Electrical and Electronic

A Versatile Solution to stay ahead of the curve for E&E industry

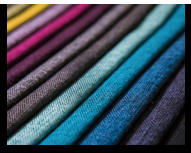
Covestro's thermoplastic polyurethane (TPU) solutions offer a versatile approach for E&E applications, expanding material options in the field. These TPUs provide design flexibility for complex shapes and seamless over-molding, while enhancing product performance and supporting sustainability initiatives.

Phone Cases	UV, scratch, and antimicrobial resistant material with anti-yellowing and high translucency. Excellent bonding enables flexible design customization.
Smart Home Appliances	Chemical resistance, anti-slip properties, and tear resistance for wheels, brushes, and housings in robotic vacuums, air purifiers, and home assistants.
Notebook Components	Impact resistance and soft-touch feel for foot mats, seals, and components, combining protection with premium tactile quality.
Smart Device Components	Superior performance in gaskets, seals, and linkages with impact and abrasion resistance, water/dust protection. Soft-touch feel and over-molding for ergonomic portable chargers, headphones, and audio devices.
Network Equipment	Abrasion resistance, flexibility, and chemical resistance for adapters, chargers, and Wi-Fi routers, ensuring reliable performance in harsh conditions.
Cable Solutions	Reliable signal and power transmission meeting regulations. Bio-based and fire-retardant grades available for sustainable, flexible design solutions.
Wearable Devices	Comfort-focused properties with flexibility, moisture resistance, and antimicrobial protection for smart wearables, watch straps, and health monitors.

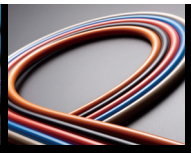
Construction and Extrusion process

Fire Water Strip

Special Films



Technical Fibers and Non-woven



Hoses & Tubes, FR cables

Robust solutions to meet demanding conditions

Our durable TPU materials provide high-performance solutions across various demanding applications. Combining flexibility, durability and halogen-free flame resistance.

Ensure reliable long-lasting performance under demanding conditions. offers robust, tailored TPU systems for the construction industry.

Fire-retardant TPU series for wire & cable application

In today's interconnected world, cables transmit critical power and data across industries. Operating in harsh environments, they face mechanical stress, chemicals, extreme temperatures, and environmental factors. Robust jacketing materials are essential for maintaining cable reliability and longevity.

Through optimized formulation and innovation

Desmopan® FR TPU

- Formulation expertise enables optimized material properties for all levels of stringent flame-retardant applications.
- Customizable solutions for optimal cable performance and design compatibility.
- Comprehensive technical support through value chain partnerships for testing, processing, and qualification.
- Innovation-driven solution to meet evolving industry needs.

Desmopan® CQ

CQ, the next generation Covestro solutions.

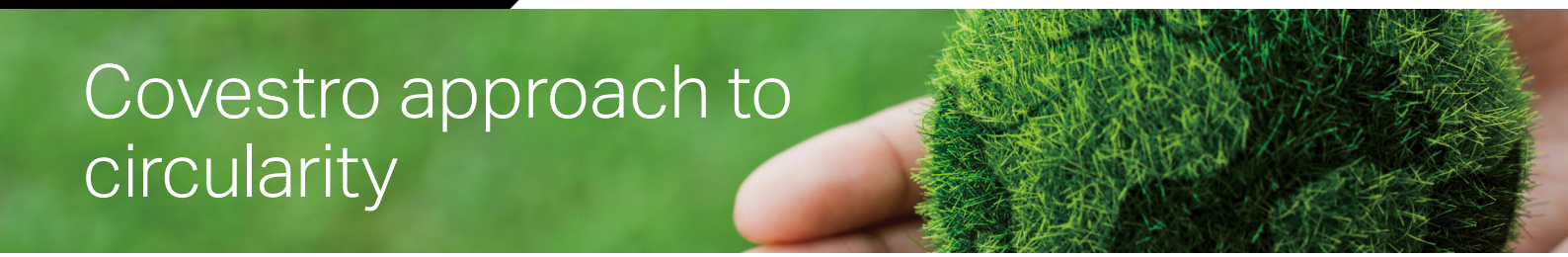
OUR CQ WAY OF WORKING:

Introducing **CQ solutions** for a more circular, climate-neutral world

// MORE SUSTAINABILITY
Offering a growing portfolio of circular intelligence (CQ) applications and solutions

// SMALLER CO_2 FOOTPRINT
Allocate alternative raw materials to reduce the carbon footprint

// EASY TO PROCESS & IMPLEMENT
Incremental change to enable our customers to move towards greater circularity



Covestro approach to circularity

Closing material and carbon loops with proprietary technologies

Covestro is dedicated to being a trusted partner in the E&E industry, offering more than just innovative materials. The company's approach to circularity focuses on closing material and carbon loops with proprietary technologies without compromising performance, ensuring a sustainable future for the industry.

Renewable energy

Board renewable energy sources to reduce its carbon footprint.

Alternative raw materials

Such as biomass and recycled materials, to minimize its reliance on finite resources.

Innovative recycling

For end-of-life recycling solutions.

Cross-industry collaborations

Collaborates with partners across industries to drive innovation and promote sustainable practices throughout the value chain.

Holistic Lifecycle Mindset

Covestro assists designers and developers in adopting a holistic lifecycle mindset for next-generation creations.

Comprehensive TPU solutions for sustainability

BIOMASS

- No direct competition to human ood chain.
- 3rd party test report of bio-carbon fraction.

RECYCLING

- Support both Mechanical and Chemical recycling.
- Proved collaboration mode for post-industrial recycling (PIR) and post-consumer recycling (PCR).

MASS BALANCING

- A globally recognized sustainable material supply chain.
- Alternative raw materials are introduced into he value chain as drop-in solution.
- No compromise on product quality.
- Bio-circular solution reduce more carbon footprint.

Selected product grades

Hardness	Desmopan® Polyester 1XX / 3XX	Desmopan® Polyester 1XX / 2XX / 3XX	Desmopan® Polyester 4XX	Desmopan® Polyester 5XX	Desmopan®/ Texin® / Utechllan® Polyether	Solution Grades	Glass reinforced Desmopan
	Soft Plasticized ester based	General Ester based	High performance	Speciality for sports Shoe Ether & Ester	General Ether Based	Solution / coating	Reinformed Ester based
50 - 60 A		DP 1055AU					
60 - 74 A	DP 3965AW	DP 1065AU			DP 6064A		
	DP 3972AW	DP 1072AU			DP 9068AU		
	UDS 72A				DP 6072A		
	65 INJ						
	72 INJ						
75 - 79A		DP 3079A		DP 5377A			
80 - 84A	DP 3980AW	DP 3379A	DP 481		DP 6080A		
	UDS 80A	DP 3384A			DP 9080AU		
		80 INJ					
85 - 89A		DP 385S	DP 487		DP 9085AU		
		DP 385L			DP 9385AU		
		DP 1085A			UE85AEU10FR		
		U 85A					
		85 INJ					
90 - 94A		DP 192			DP 9095AU		
		DP 1092A			DP 9395AU		
		DP 392LS / LE			UE90AE10FR		
		DP 3392A					
		U 92A					
		92 INJ					
95 - 98A		UT7-98AU				UHM 1025L	
45 - 49D		DP 345	DP 445				
50 - 54D		DP 150					
		DP 3054D					
		DP 3354D					
65 -64D		DP 359	DP 460		DP 9055DU		
65 - 75D		DP 365				DP 8080	DP 3973D
		DP 3075D					

TPU for SCF Technology

Product name	Desmopan® 83090A DPS302	Desmopan® 9380AU DPS621	Desmopan® 9385AU DPS651
Description	Polyester Aliphatic	Polyester Aliphatic	Polyester Aliphatic
Density (g/ml)	0.14	0.18	0.17
Avg Hardness (Asker C)	43±2	40±2	42±2
Compression set (%)	53	61	44
Ball rebound (%)	66	61	49
Split tear (kgf/cm)	3.2	2.6	2.9

TPU for PPF solution

Product name	Standard	Unit	DP.88395AU DPS302	DP.88395AU DPS306
Shore hardness	ISO 868	A	92	89
Itimate Tensile Strength	DIN 53504	MPa	52	53
Strain at break	DIN 53504	%	420	450
Stress at 100% strain	DIN 53504	MPal	9	7
Stress at 300% strain	DIN 53504	MPa	32	28
Abrasion resistance	ISO 4649 - Method B	mm^3	75	70
Tear Strength	ISO 34-1	kN/m	150	130
Haze	ASTM D1003	%	0.8	0.8
Density	ISO 1183-1	g/cm^3	1.126	1.120

Covestro
Deutschland AG
Thermoplastic
Polyurethanes
(TPU)

www.tpu.covestro.com

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