

Innovation by Chemistry.

Materials can change our lives.

Toray Group firmly believes that "materials, as the foundation of all products, have the power to bring about fundamental transformations in society." Based on this belief, our goal is to become a global top company in advanced materials as an integrated chemical industry group. Since our establishment, we have positioned "contributing to society" as the focus of our existence. Carrying this focus into our corporate philosophy of "contributing to society through the creation of new value with innovative ideas, technologies, and products," we are ramping up efforts to solve a host of issues worldwide together with global partners by providing innovative technologies and advanced materials. With this in mind, we are working to become a corporate group that provides high value to all stakeholders.

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Vision

To enrich society through empowered creativity and materials evolution.

We are committed to our values:

- Ultrasuede® as Toray's leading brand
- Enrich society for the next generation
- Sharing Japanese quality with the world
- Expansion through technological innovation
- Enhancing our customers' value alongside Ultrasuede®



Beautiful Possibilities

Luxury refined through material evolution

Ultrasuede® is a luxurious, highly functional material that has evolved through repeated cycles of technological innovation. It represents Japanese quality and is at the forefront of the world of new materials. The soft texture, touch and outstanding quality of this functional material contribute to its continued adoption in advanced applications worldwide.

Since its launch in 1970, Ultrasuede® has been featured in many iconic and era-defining applications, inspiring creativity in those who adopt it. As Toray's leading brand, Ultrasuede® inspires pride and attachment for all those involved with it.

At Toray, we are actively engaged in social activities including collaborations with industry and academia. We are also reducing our environmental impact with a recycled polymer program and a shift toward plant-based polymers. Toray enriches people's lives and contributes to a sustainable society through responsible manufacturing.

Ultrasuede® keeps evolving toward a future full of "Beautiful Possibilities."

ULTRASUEDE™ AS TORAY'S
LEADING BRAND



Defining Innovation

ultrasuede®

Made possible through Toray's technology

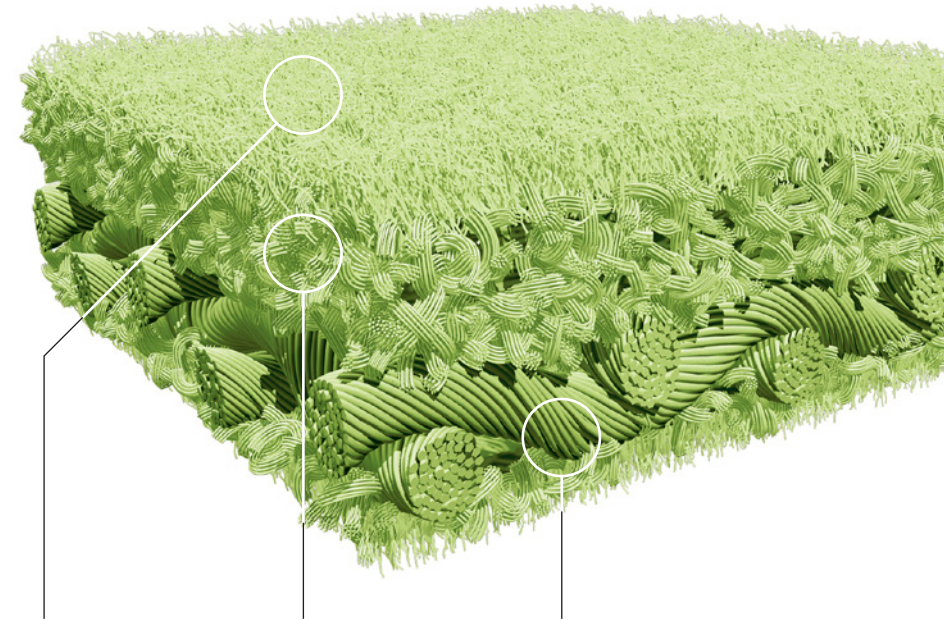
Ultrasuede® is a luxurious yet highly functional non-woven material with a suede texture made possible by leveraging the most advanced fiber technologies at Toray—the inventor of the ultra-fine fiber.

The polyester ultra-fine fibers used to create Ultrasuede® are so light that a strand more than 900 km long would weigh less than one gram. By entwining bundles of ultra-fine fibers and elastic high polymers in a dense three-dimensional configuration, Toray has created a revolutionary material distinct from conventional woven or knitted fabrics.

Thanks to Toray's tireless technological innovation, the characteristics of this generational material mimic yet surpass natural leather suede. As a result, Ultrasuede® has been adopted in countless applications since its launch in 1970.

The Beautiful Possibilities of Ultrasuede®

- Soft touch, with luxurious texture
- A wide range of exquisite colors
- Superior durability
- Breathability and permeability for true comfort
- Comfortable surface temperature regardless of ambient temperature
- Easy to care for and maintain
- Made with advanced technologies using recycled polymers and plant-based polymers
- It's both uniform and lightweight, easily processed for a multitude of products and users
- Widely adaptable to a variety of specifications, functions and applications
- Unlimited creative options like laser cutting, embossing or printing



Surface

The surface, made of intertwined, brushed ultra-fine fibers, creates a uniquely soft and smooth texture, much like natural premium suede.

Non-woven structure

Intertwined ultra-fine fibers and polymers form the internal structure, providing uniformity, durability and breathability.

Scrim

Beneath the exquisitely soft touch lies the sturdy inner body, composed of a rope-like lining called the scrim—the secret behind the tautness and durability that makes Ultrasuede® perfect for furniture, automobile seats and many other applications.

Touch the Future

ultrasuede® nu

A futuristic alternative in material technology

Ultrasuede® nu is a non-woven material created using ultra-fine fibers for a genuine grain leather appearance. This luxurious, innovative material combines advanced design and functionality as a new creation from Toray, the inventors of Ultrasuede® and the ultra-fine fiber. Ultrasuede® nu marks a superlative new option for premium quality material from Japan.

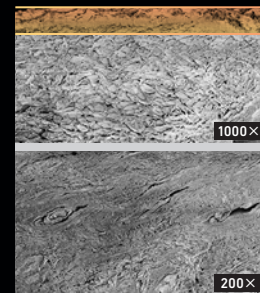
The next generation of lightweight, breathable leather: Ultrasuede® nu provides customers with a new choice superior to conventional natural and synthetic leathers.

Four Characteristics of Ultrasuede® nu

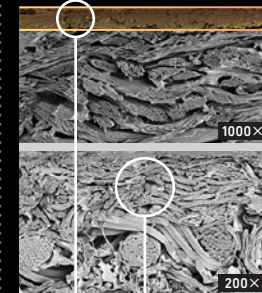
- Delicate texture and suppleness reminiscent of premium aniline leather
- A unique, calming luster
- Light, comfortable breathability
- Environmentally friendly non-animal (vegan) material

Cross-section comparison of Ultrasuede® nu with other leather materials

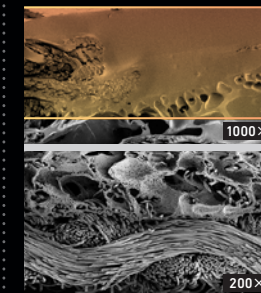
Natural leather
(Aniline cowhide)



Ultrasuede® nu



Standard
synthetic leather

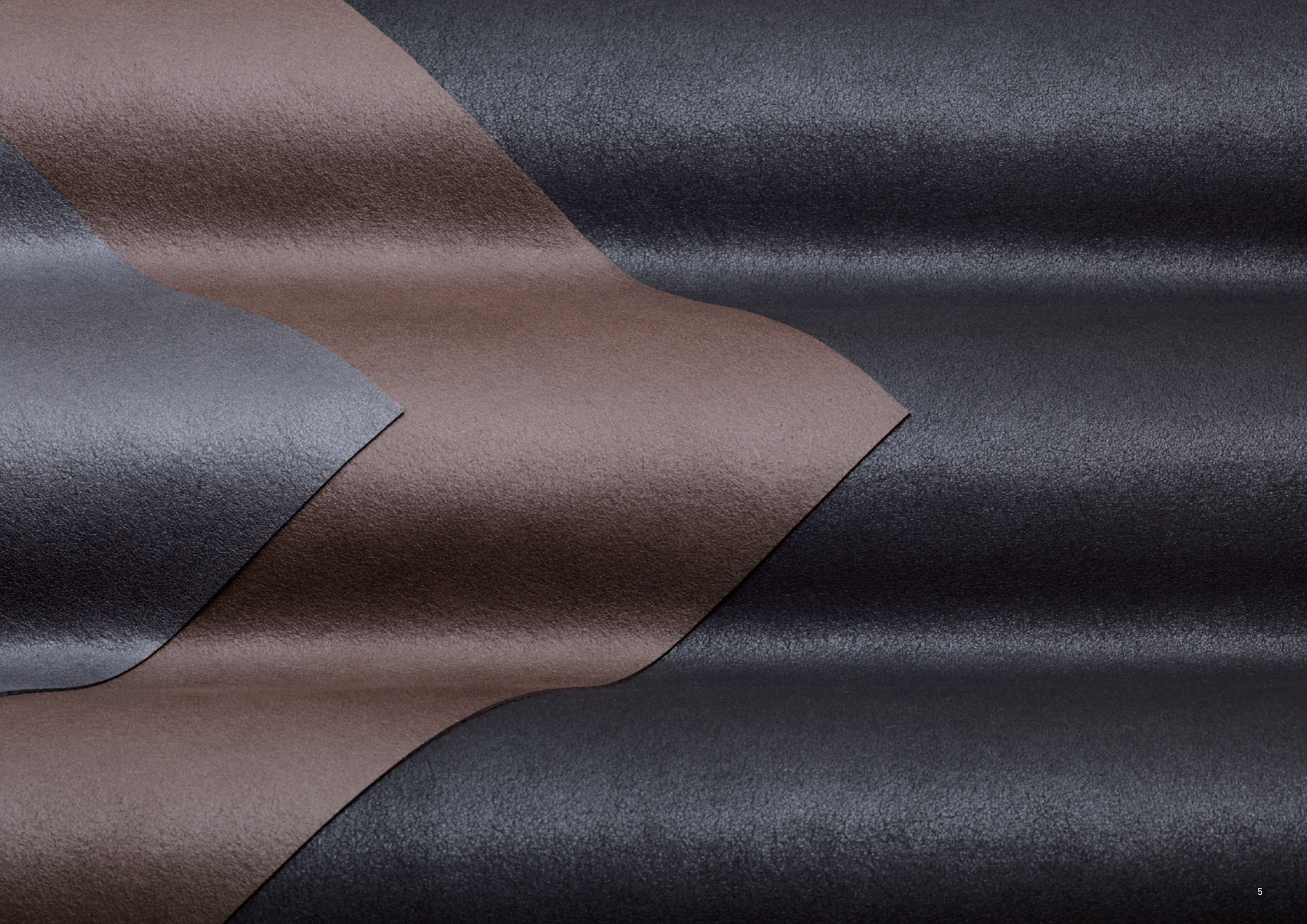


Surface

Ultrasuede® nu differs from standard synthetic leather in that a very thin and delicate layer is formed on the material through a special surface treatment and generous application of resin. This gives Ultrasuede® nu a premium texture, touch and softness.

Internal structure

Unlike standard synthetic leather, which is formed from woven fabric, Ultrasuede® nu is a non-woven material with an intricately entwined structure made of ultra-fine fibers. This faithfully reproduces the texture of premium genuine leather while keeping the material light and breathable.



For the Next Generation

Harmony between science and nature through the Toray Group Sustainability Vision

We believe that sustainability is the most important common global issue of the 21st century.

As the Toray Group grows, we will do everything possible not to hamper the progress of global sustainability. Under our corporate philosophy of "contributing to society through the creation of new value," we will work diligently to eliminate any negative impact on the global environment and sustainability as a result of our growth and development. At the same time, we will engage in Group-wide activities in an effort to resolve a variety of issues and work to achieve global targets including the Paris Agreement and sustainable development goals (SDGs) together with worldwide partners.

GOALS: A BETTER WORLD IN 2050

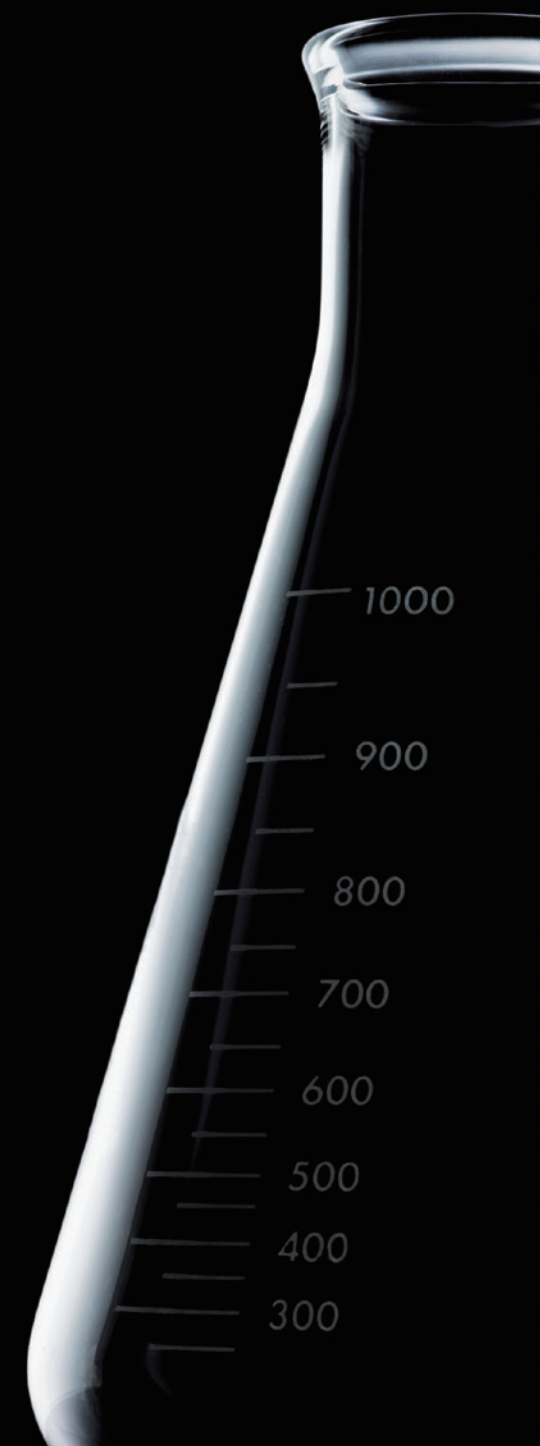
- GOAL 1** A net zero emissions world, where greenhouse gas emissions are completely offset by absorption
- GOAL 2** A world where resources are sustainably managed
- GOAL 3** A world with a restored natural environment, with clean water and air for everyone
- GOAL 4** A world where everyone enjoys good health and hygiene

TAKING ACTION: TODAY'S CHALLENGES

- ACTION 1** Accelerating measures to counter climate change
- ACTION 2** Realizing sustainable, recycling-based use of resources and production
- ACTION 3** Providing clean water and air
- ACTION 4** Contributing to better medical care and hygiene for people worldwide

FIVE COMMITMENTS FOR 2030

Supplying Green Innovation Products	Supplying Life Innovation Products	Annual Water Filtration Throughput <small>*Annual amount of water treated using water treatment membranes</small>
INCREASE 4x	INCREASE 6x	INCREASE 3x
Reducing GHG Emissions	Reducing Water Consumption per Unit of Sales	
30% REDUCTION	30% REDUCTION	



Toward 100% Plant-Based Materials

Plant-based Ultrasuede®

Toray started commercial production of its non-woven material with a suede texture, which uses recycled resources derived from plants as part of its raw materials, for the first time in the world in 2015.

Through Ultrasuede®, Toray helps to realize a carbon-neutral society by employing a recycled polymer as well as by sourcing its raw feedstocks from plant-based polymers. This provides the advantage of stable supply, quality and reliability. We consider these sustainable materials to be better for the Earth and its people as we aim to build a sustainable society through responsible manufacturing.

Effects of using approx. 30% plant-based materials for the raw materials in Ultrasuede®

Leads to a reduction in oil use

↓ 0.66 liters

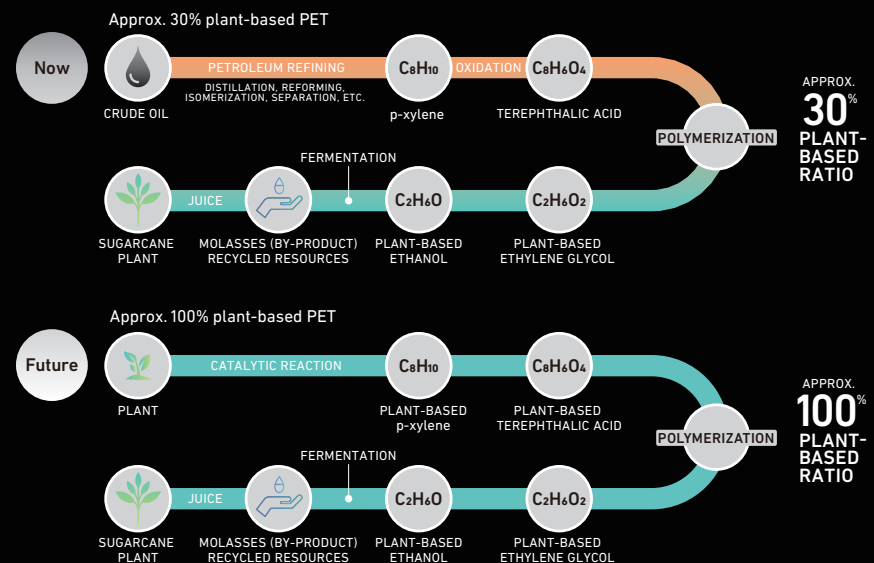
Per 1 m² (375g) of Ultrasuede® BX*
*Calculation performed by Toray based on the "MILCA" of the Sustainable Management Promotion Organization in Japan
*Crude oil consumption: Calculated in consideration of the yield of crude materials refined from crude oil

The advantages of plant-based materials*

- Contribute to a non-oil-dependent society
- Secure supply and stable quality
- Reliable as raw feedstocks (non-edible part, non-GMO, test certificate)

*Ultrasuede® products made from partly plant-based PET

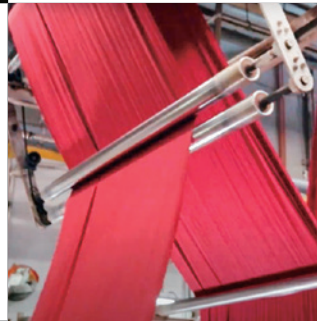
Plant-based PET



SHARING JAPANESE QUALITY
WITH THE WORLD



Japan Quality Delivered



Sharing Japanese quality with the world

With over 50 years of experience and proven quality based on research, technology that meets customers' demands and agile, flexible production capacity, Toray meticulously manages every step of the production process.

Our world-leading track record as a general materials manufacturer allows us to supply innovative materials across the globe, meeting quality standards and regulations for each region, country and customer. Proprietary partnerships with other Japanese manufacturers allow

us to offer a range of manufactured goods that fulfil our customers' needs.

Through our international support and sales system with bases across the globe, we offer our customers detailed proposals to suit their needs, fine-tuned services and after-sales support.

We deliver Japanese quality products to customers worldwide who have placed their trust in our company.



The Ultrasuede® Manufacturing Process

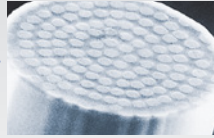
Highly regarded by customers all over the world, Ultrasuede® is carefully manufactured using Toray's latest technology and manufacturing processes.

Certifications:
ISO9001 • ISO14001 • IATF16949



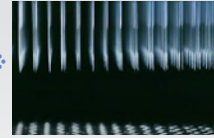
Polymerization

Ultra-fine fiber technology has advanced thanks to the implementation of resource-recovery systems and plant-based polymer materials.



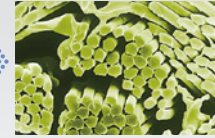
Fiber spinning

Extruded ultra-fine fibers are bundled with polymer, creating what we call an "Islands in the Sea" configuration, with the filaments "afloat" in each strand.



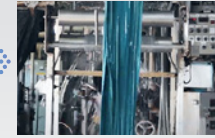
Felt processing

The strands are then transformed into soft, felt-like sheets of material via a complex process that is completed by needle-punching and more.



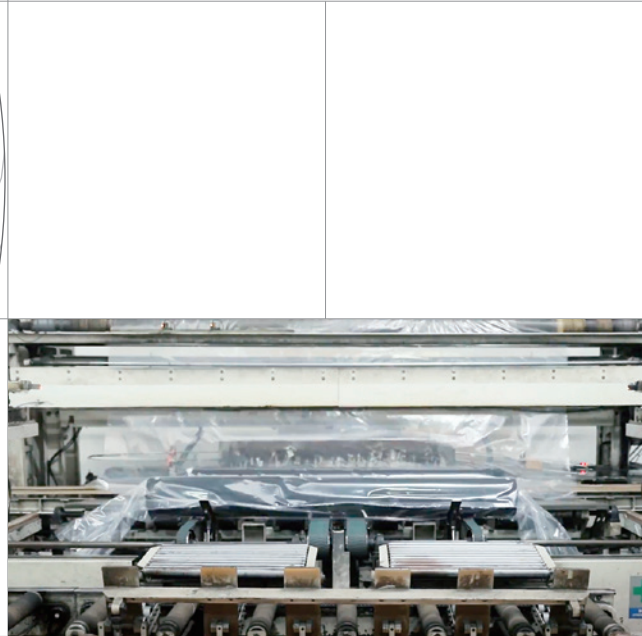
Leathermaking

After being fortified with a polymer binder, the fibers are further processed to create a material that is soft and supple while remaining strong and durable.



Coloring & finishing

Finally, Ultrasuede® is created, made possible through advanced dyeing technology developed for ultra-fine fibers. The remarkable process creates an unparalleled range of light-resistant colors with excellent colorfastness.



- PRIMARY LOCATIONS
New York • San Francisco • Los Angeles • South Carolina • Shanghai • Guangzhou • Frankfurt
- OTHER LOCATIONS
Europe: Milan • London • Istanbul
Asia: Seoul • Taipei • Hong Kong • Bangkok • Jakarta • Mumbai
Americas: São Paulo
- MANUFACTURING BASES
Japan: Shiga Prefecture • Gifu Prefecture • Fukui Prefecture





1970



Continuing Evolution

Ultrasuede® was invented by Toray in 1970, and had a spectacular debut in New York and Paris. At the time, it was described as “the most innovative material since the fig leaves worn by Adam and Eve.” The material generated excitement and impact, and today, Ultrasuede® has been adapted to diverse applications across many different industries and lifestyles.

Ultrasuede® is used not only in fashion and interior design, but also for automobile and airplane upholstery, sports gear, and cases and accessories for smartphones and mobile devices. It continues to be a fabric of choice around the world, with a reach extending from consumer lifestyles to industry and research.



Cutting-edge materials that
complement every era





Now



ENHANCING OUR CUSTOMERS'
VALUE ALONGSIDE ULTRASUEDE™

↑ Inkjet Print
↓ Perforation

↑ Lamination
↓ Over Print

↑ Resin Print
↓ Embossed

↑ Double Face
↓ Laser Etching



Unlimited Possibilities

A highly functional material used all around the world

Ultrasuede® is available in various configurations, each suited to a particular purpose, from thin Ultrasuede®, measuring just 0.5 mm and used for displays, to thick Ultrasuede®, measuring 2.7 mm and used in the outer layer of sandals and bags.

From surface processing techniques rooted in traditional crafts, such as embossing, to printing and laser processing using the latest digital technology, various techniques are used to create Ultrasuede's® natural texture with a soft suede touch and luster that emphasizes contrast.

At Ultrasuede®, we will continue to strive for added value along with our customers by seeking to further evolve the materials used to make Ultrasuede® while expanding creative possibilities and customizing our products according to client needs.

Ultrasuede® Products

Product	Description	Typical Applications	Thickness (mm)	Weight		Width	
				(g/m ²)	(oz./yd ²)	(mm)	(inch)
XL	Extra Light: Very soft and lightweight, perfect for displays	<ul style="list-style-type: none"> • Consumer Electronics • Interiors 	0.5	120	3.5	1,150	45
RL	Recycled Light: Lightweight, durable, and environmentally friendly, featuring over 70% recycled polymer fiber derived from process waste	<ul style="list-style-type: none"> • Bags & Accessories • Consumer Electronics • Interiors 	0.6	170	5.0	1,480	58
LX	Luxury: Stretchability combined with a rich suede touch	<ul style="list-style-type: none"> • Apparel • Footwear • Bags & Accessories • Consumer Electronics 	0.6	220	6.5	1,300	51
ST	Standard: Dependable thickness and softness packed with robust functionality	<ul style="list-style-type: none"> • Apparel • Footwear • Bags & Accessories • Consumer Electronics • Interiors 	0.7	230	6.8	1,480	58
HP	High Performance: A scrim-laced product with exceptional durability, available in multiple color variations	<ul style="list-style-type: none"> • Apparel • Footwear • Bags & Accessories • Interiors 	1.0	375	11.1	1,420	55
ER	Extra Rich: Functional and durable, a go-to product for footwear and accessories	<ul style="list-style-type: none"> • Footwear • Bags & Accessories 	1.2	365	10.5	1,200	48
TS	Thick and Soft: Reassuringly thick, soft and environmentally friendly, featuring recycled raw plant-based materials	<ul style="list-style-type: none"> • Footwear • Bags & Accessories 	1.4	540	15.9	1,420	55
DP	Duplex: Light, yet rich and thick to the touch	<ul style="list-style-type: none"> • Apparel • Bags & Accessories 	1.7	475	14.0	1,150	45
for Wallcovering	for Wallcovering: A bridge between architectural and interior designs that creates calm, refined spaces	<ul style="list-style-type: none"> • Interiors 	0.4	155	4.6	920	36
for Automotive	for Automotive: A product that combines flame resistance and strength, suitable for automobile interiors	<ul style="list-style-type: none"> • Automotive 	1.0	420	12.4	1,420	55
NU 0.6	nu0.6: 0.6 mm-thick stretch type with a delicate texture, smooth touch and grain leather-like luster plus high functionality	<ul style="list-style-type: none"> • Apparel • Footwear • Bags & Accessories • Consumer Electronics 	0.6	230	6.8	1,300	51
NU 1.0	nu1.0: 1.0 mm thick with a soft, supple feel and surface appearance with superior durability	<ul style="list-style-type: none"> • Apparel • Footwear • Bags & Accessories • Interiors 	1.0	375	11.1	1,420	55

