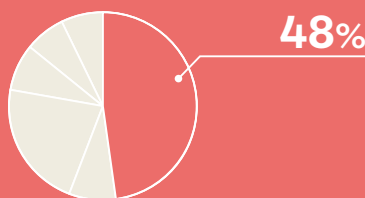


Strategies by Segment

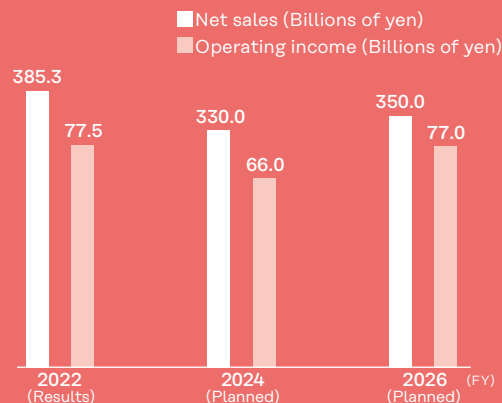
Vinyl Acetate

We manufacture and sell materials ranging from PVOH resin offering properties such as water solubility and high adhesiveness; materials for LCD display applications; PVOH film used in soluble unit dose system for detergent and other products; PVB film used as an interlayer for safety glass; to EVAL™ EVOH resin that offers excellent gas barrier properties.

Net sales composition ratio



Net sales / Operating income



Strengths

- ▶ Integrated production based on advanced technology from raw material monomers to finished products
- ▶ Numerous high-quality, cost-competitive product lines
- ▶ Stable supply framework backed by our global network; strong customer base
- ▶ Capabilities in proposing value to customers and in marketing

Opportunities

- ▶ Increased demand due to a shift toward larger LCDs and accelerated digitalization trends
- ▶ Growing concern about food safety and security amid rising living standards in emerging countries
- ▶ Heightened demand to reduce food loss globally
- ▶ Increased global demand for soluble unit dose system for detergent
- ▶ Expanding demand for barrier paper and paper straws in line with growing environmental awareness

Risks

- ▶ Maturing of the LCD market and expansion of the OLED display market
- ▶ Increased country risks
- ▶ Soaring raw materials and fuel prices and sharp exchange rate fluctuations

Medium-Term Management Plan "PASSION 2026" Key Measures

We will maximize customer value and expand earnings by strengthening our supply framework and optimizing logistics service through our global network and integrated production system starting with raw materials.

As the core business of the Kuraray Group, we will propose to customers new applications and high-value-added products that capitalize on the characteristics of each of our products. We will also reinforce the global supply framework by upgrading production capacity in a timely manner to support expanding volume.

Strategies by Business

PVOH resin	<ul style="list-style-type: none"> ● Maintain a strong supply framework by taking advantage of our strengths backed by our own raw material production capabilities ● Continue to shift from quantity to quality (new applications and high-value-added products)
Optical-use poval film	<ul style="list-style-type: none"> ● Strengthen production and sales frameworks in accurate response to expanding demand and the market shift to China ● Launch and expand lineup of value-added products that meet customer needs, such as high-transparency or thin film
Water-soluble PVOH film	<ul style="list-style-type: none"> ● Timely capacity expansion to cover demand growth and to maintain stable supply to the market ● Promote the development of new applications as well as biodegradable and bio-based raw materials to contribute to a circular economy
Advanced interlayer solutions	<ul style="list-style-type: none"> ● Expand lineup of SentryGlas™ ionoplast interlayers, our unique product ● Leverage the strengths of the global supply system supported by bases in Europe, the United States and South Korea while accelerating the launch of newly developed products
EVAL	<ul style="list-style-type: none"> ● Strengthen the stable supply framework and build a new plant in Asia ● Contribute to reduction in food loss as we strive to meet growing demand for food packaging applications

Review of 2022 and Outlook

Demand for optical-use poval film was affected by inventory adjustments in the supply chain, but performance in other businesses was generally favorable. We will continue to maximize customer value and expand earnings by drawing on our global network to strengthen our stable supply framework and by optimizing logistics.

◆ PVOH resin

The sales volume decreased due to the suspension of some production facilities at a United States subsidiary and a contraction in demand in the latter half of the year. We continued shifting to high-value-added products while revising prices amid soaring raw material and fuel prices. Going forward, we will continue to shift to high-value-added products as we work to achieve sustainable growth.



◆ Optical-use poval film

Shipments declined significantly from the middle of the year due to the impact of LCD panel inventory adjustments. Signs of recovery emerged at the end of the year, however. We will continue to maintain a strong competitive edge by enhancing quality and promoting differentiation. To meet needs for larger TV panel sizes, we decided to invest in expanding production capacity at the Kurashiki Plant.

◆ Water-soluble PVOH film

Sales were firm for use in unit dose laundry detergent packets. We will continue to expand the market by strengthening cooperation with customers and developing new applications.



◆ Advanced interlayer solutions

Sales of PVB film, especially for use in construction applications in North America, held steady year on year. We will continue to expand sales of high-value-added products, including SentryGlas™ ionoplast interlayers.

◆ EVAL

Performance of food packaging applications was steady, and the sales volume increased. Also, in response to soaring raw materials and fuel costs, we revised product prices globally. In response to strong demand, we worked to improve productivity and decided to invest in production capacity expansion in Europe and the United States. Going forward, we will continue to capture steadily expanding demand stemming from the shift toward a circular economy.



Focus

50th Anniversary of EVAL Business

EVAL™, the world's first EVOH resin developed by Kuraray and commercialized in 1972, marked its 50th anniversary in 2022. Originally used to extend the shelf life of foods, this product has garnered renewed interest as a solution that contributes to sustainability as it not only curbs food loss but also reduces logistics load by making containers lighter. Through this business, we will fulfill our social responsibility to improve the natural and living environments while aiming for further growth and development.



First shipment of EVAL™ (at the time)

Decision to Expand Production Facilities for Optical-Use Poval Film

As the base for polarized film, a key material used in LCDs, optical-use poval film is expected to see further growth in demand. Accordingly, we made the decision to expand production capacity at the Kurashiki Plant. We expect to see continued growth in the area of LCD panels due to the shift toward larger LCD TVs. The new line will enable the production of a wide films, and help to improve the production efficiency of large-scale polarized films. It is scheduled to start operations in mid-2024.



Kurashiki Plant

Isoprene

We manufacture and sell isoprene chemical products made with a synthesizing method as well as SEPTON™ thermoplastic elastomer and GENESTAR™ heat-resistant polyamide resin, which are derivatives of isoprene chemical products.

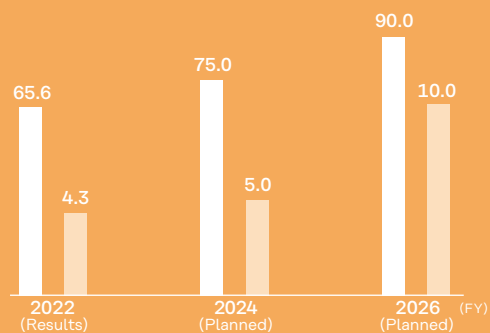
Net sales composition ratio



8%

Net sales / Operating income

■ Net sales (Billions of yen)
■ Operating income (Billions of yen)



Strengths

- ▶ Broad lineup of unique products based on proprietary technology
- ▶ Advanced technological services that meet customer needs
- ▶ Stable supply framework through global network, with newly added base in Thailand
- ▶ Capabilities in proposing value to customers and in marketing

Opportunities

- ▶ Expanding demand for materials development for the weight reduction, electronic control, and electrification of automobiles
- ▶ Growing demand for high-end materials to meet next-generation communication standards
- ▶ Increased demand for environmentally friendly materials and bio-based materials due to growing environmental awareness

Risks

- ▶ Soaring costs of raw materials and fuel, difficulties in procurement, and sharp fluctuations in foreign exchange rates
- ▶ Reduced automobile and electrical and electronic device production due to semiconductor shortages
- ▶ Low-cost strategies of competitors and other factors will undermine markets

Medium-Term Management Plan "PASSION 2026" Key Measures

In each of our businesses, we will strengthen the global supply framework through the startup of operations at the plant in Thailand, seeking to contribute to earnings as soon as possible.

In the Genestar business, we will expand our marketing and technical service frameworks and accelerate development of applications that take advantage of material characteristics. By expanding into global markets, including Europe, the United States, and Asia, we aim to achieve an average annual growth rate of 10%, which will lead to a second round of investment in Thailand.

Strategies by Business

Isoprene Chemicals	<ul style="list-style-type: none"> ● Expand sales of one-of-a-kind products ● Quickly commercialize newly developed products to secure new profit contributors ● Promote sustainability (Reduce GHG emissions via the switchover of raw materials and the improvement of the manufacturing process)
Elastomer	<ul style="list-style-type: none"> ● Strengthen global supply framework for SEPTON™ thermoplastic elastomer ● Build a new liquid rubber plant in the United States ● Promote development and expand sales of products that are high-value-added and made from sustainable raw materials
Genestar	<ul style="list-style-type: none"> ● Expanded use of GENESTAR™ heat-resistant polyamide resin in parts due to the weight reduction, electronic control, and electrification of automobiles ● Penetrate further into global markets, including Europe, the United States and Asia ● Consider the second phase of facility construction in Thailand

Review of 2022 and Outlook

In all businesses, we moved ahead with revising product prices amid soaring raw material and fuel prices. Sales volumes decreased in the first half of the year due to a decline in production stemming from a temporary difficulty in procuring raw materials, and in the second half of the year due to lower demand because of the economic slowdown. In 2023, we forecast growth in sales volume by leveraging the supply capabilities of our base in Thailand, which is now in operation.

◆ Isoprene Chemicals

Amid soaring raw material and fuel prices, we revised the prices of isoprene chemicals. The sales volume decreased due to a temporary difficulty in procuring raw materials and a contraction in demand in the latter half of the year. We will grow the business in 2023 by expanding supply capacity through the operation of our base in Thailand.



◆ Elastomer

Amid soaring raw material and fuel prices, we revised the prices of elastomer. As with the isoprene chemicals business, production was down due to difficulties in procuring raw materials as well as lower demand in the second half of the year. In 2023, we will harness the heightened competitiveness of butadiene base grade products at our base in Thailand to expand the business.



◆ Genestar

The sales volume decreased due in part to inventory adjustments in automotive parts and electric and electronic devices. We expect the market to recover in 2023, and also expect to see growth of new adoption for automotive applications as the shift to electric vehicles continues. The operation of our base in Thailand will enable a stable supply across multiple bases, contributing to the business continuity planning of customers.

Focus

50th Anniversary of Isoprene Business

We commercialized polyisoprene rubber as an alternative to natural rubber in 1972. Starting with this material, we have created a number of product lines with many characteristics, mainly at the Kashima Plant, the main plant of the isoprene business. The isoprene business, which marked its 50th anniversary in 2022, has developed into a diverse business encompassing products that are one-of-a-kind in the world and environmentally friendly high-performance products that draw on Kuraray's unique technologies. We will aim to further develop the isoprene business following the addition of our Thailand base, which recently started operation.



Panorama of Kashima Plant
(photo taken at start of operations)

New Plant Starts Operation in Thailand

In February 2023, we launched a new plant in Thailand for isoprene-related businesses. The new plant manufactures products such as GENESTAR™ heat-resistant polyamide resin, SEPTON™ thermoplastic elastomer, and 3-Methyl-1.5-Pentanediol (MPD). It is our largest overseas base for isoprene-related businesses. Responding to rising global demand for each of these products, the Thailand plant will aim to contribute to earnings as soon as possible, serving as a manufacturing hub that is pivotal to efforts to reinforce our global supply framework.

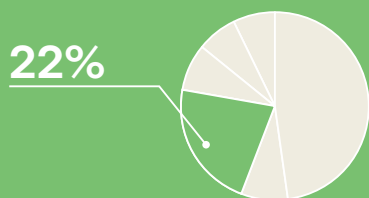


Aerial view of the new plant

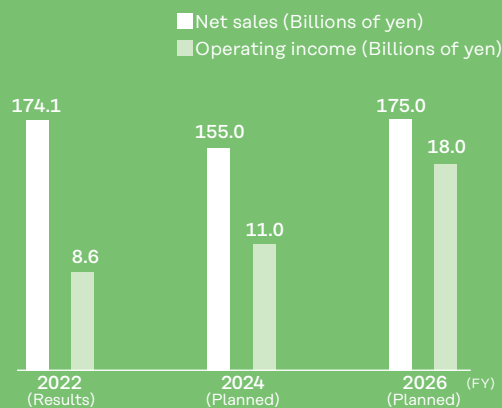
Functional Materials

We manufacture and sell methacrylic resin that offers excellent transparency and weatherability, dental materials enabling restorations that closely resemble natural teeth, activated carbon whose high adsorption performance is used to purify air and water, and water treatment equipment.

Net sales composition ratio



Net sales / Operating income



Strengths

- ▶ Development of high-value-added products with advanced technological capabilities and high quality
- ▶ Supply and sales capabilities using our global network as a comprehensive manufacturer of activated carbon
- ▶ Capabilities in proposing value to customers and in marketing

Opportunities

- ▶ Increased demand for air and water purification under tighter environmental regulations worldwide
- ▶ Global expansion of the circular economy
- ▶ Expansion of energy-related markets
- ▶ Growing demand for cosmetic dentistry in line with rising standards of living
- ▶ Digitalization of dental lab work using CAD/CAM
- ▶ Increased demand to develop materials with transparency and optical properties in line with the increasing sophistication of automobiles

Risks

- ▶ GHG emissions from the activated carbon production process
- ▶ Decreasing cost competitiveness and supply capacity due to inadequate raw materials procurement capabilities
- ▶ Soaring raw materials and fuel prices and sharp exchange rate fluctuations

Medium-Term Management Plan "PASSION 2026" Key Measures

In the Environmental Solutions business, we will leverage our strengths as a general activated carbon manufacturer, strengthening our global supply framework by expanding our virgin activated carbon production base in the United States and our reactivated carbon production base in Europe. In addition to promoting R&D and production technology development based on the control and design of carbon structures, we will capture growing demand and expand into new applications. We aim to generate ¥10 billion in synergies by 2026 from the Calgon Carbon Corporation acquisition.

We will also strive to grow the Aqua business, which was incorporated into the Functional Materials segment in 2022, through tie-ups with the Environmental Solutions business.

In the Methacrylate business, we will develop high-value-added materials and technologies and aim to establish a recycling system with a view to the circular economy.

In the medical business, we will draw on our technological advantages in dental materials to develop products that help reduce the burden on patients and dentists, contributing in this way to improving people's quality of life (QOL). By strengthening sales and marketing and improving our product supply framework, we will target an average annual growth rate of 10%, mainly through greater sales in Europe and the United States.

Strategies by Business

Methacrylate	<ul style="list-style-type: none"> ● Develop and realize high-value-added materials and technologies for the next generation ● Establish a recycling system and achieve production process innovation
Medical (dental materials)	<ul style="list-style-type: none"> ● Constantly introduce a stream of new high-value-added products in the CAD/CAM field ● Strengthen the product supply framework to support global expansion
Environmental Solutions	<ul style="list-style-type: none"> ● Expand profitability leveraging strengths as an activated carbon manufacturer ● Fully realize synergies and growth by enhancing our production capabilities for both virgin and reactivated carbon ● Develop products related to reducing GHG emissions for electrical material and mobility applications
Aqua*	<ul style="list-style-type: none"> ● Strengthen the membrane business by leveraging our unique technologies ● Promote environment-related businesses backed by synergies with the Environmental Solutions business

* Aqua business was transferred to Functional Material segment from FY2022.

Review of 2022 and Outlook

Demand in the methacrylate business decreased and there was also impact from higher raw materials costs and deteriorating market conditions, but demand for other businesses remained steady. Going forward, we will tap into the unique technologies and other strengths of each of our businesses to expand the business. In the Environmental Solutions business, we will generate synergies with Calgon Carbon Corporation and the Aqua business.

◆ Methacrylate

The sales volume decreased due in part to electric and electronic device inventory adjustments. Soaring raw material prices and deteriorating market conditions also had a negative impact. Going forward, we will promote the development of high-value-added materials and technologies.



◆ Medical (dental materials)

Sales of cosmetic dental materials expanded in Japan and overseas. Going forward, as we expand our business, mainly in Europe and the United States, we will develop user-friendly products that leverage our technological advantages that help improve people's quality of life.



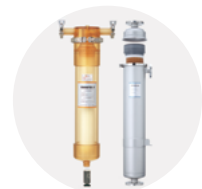
◆ Environmental Solutions

Demand for drinking water and water for industrial applications increased, especially in Europe and the United States, and sales of activated carbon expanded. We revised product prices due to soaring raw material and fuel prices. Going forward, we will step up the pace of efforts to realize synergies from integration, which had been delayed as we expanded production capacity in Europe and the United States, thereby driving further business expansion.



◆ Aqua

Demand for hollow fiber membranes for water treatment remained steady. Going forward, as well as further developing new high-performance membranes, we will expand the business through collaboration with the Environmental Solutions business.



Focus

Started Operation of Reactivated Carbon Production Facilities in Belgium

Facilities to increase production of reactivated carbon in Belgium started operation in October 2022. Activated carbon is widely used in environmental applications such as water and air purification. Demand for activated carbon is growing for industrial applications such as emission gas treatment and wastewater purification. This is being driven by tighter environmental regulations and growing awareness of the importance for the environment of the sustainable use of natural resources and the reduction of carbon dioxide emissions. With this expansion, we will continue working to expand our global stable supply framework for activated carbon and facilitate solutions to environmental issues.



Expanded facilities exterior

GL module—a Hollow-Fiber Membrane Module for Water Treatment Wins 54th JCIA Technology Special Award and 55th Ichimura Prize in Industry for Excellent Achievement

Kuraray was awarded the Technology Special Award at the 54th Japan Chemical Industry Association (JCIA) Technology Award Program in May 2022 in recognition of its development and industrialization of GL module, a hollow-fiber membrane module for water treatment that enables the efficient reuse of wastewater due to its superior water permeability as well as its exceptional ability to treat high-turbidity water.

In March 2023, this product received the 55th Ichimura Prize in Industry for Excellent Achievement for its contributions to the more effective use of water resources across industries, in its role as an efficient treatment technology for high-turbidity water, in securing a stable supply of industrial water, and in boosting water recovery rates.

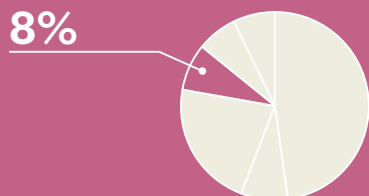


GL module units installed at Kurashiki Plant

Fibers and Textiles

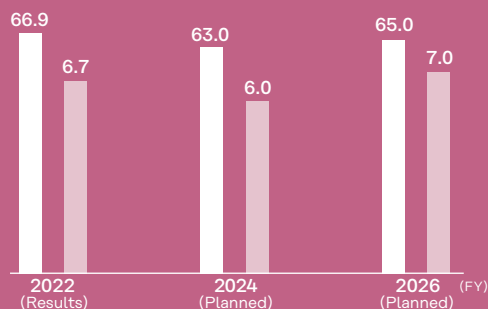
We manufacture and sell KURALON™ PVA fiber, which is mainly used as a material in cement and a reinforcing material for automotive components; CLARINO™ man-made leather, which has a structure and functionality similar to natural leather; VECTRAN™ liquid crystal polymer fiber, mainly used as an industrial material due to characteristics such as high strength and low water absorption; KURAFLEX™ nonwoven fabrics which are used as household and industrial products; and MAGIC TAPE™ hook-and-loop fastener.

Net sales composition ratio



Net sales / Operating income

■ Net sales (Billions of yen)
■ Operating income (Billions of yen)



Medium-Term Management Plan "PASSION 2026" Key Measures

We will work to enhance profitability by shifting to high-value-added products drawing on our unique raw materials and manufacturing methods.

Strategies by Business

Clarino	<ul style="list-style-type: none"> ● Expand sustainable products using recycled raw materials and bio-based raw materials while shifting to environmentally friendly manufacturing and processing processes ● Expand the supply framework in response to the globalization of supply chains
Fibers and Industrial Materials	<ul style="list-style-type: none"> ● Expand sales of VECTRAN™ leveraging the characteristics of materials ● Expand operations by concentrating resources on such strategic applications as rubber reinforcement and concrete reinforcement ● Expand the breadth of product applications in fields requiring compliance with environmental regulations (e.g., asbestos substitutes)
Consumer Goods and Materials	<ul style="list-style-type: none"> ● Expand environmentally friendly products* and sustainable materials ● Expand the lineup of unique products, such as MAGIC TAPE™, to meet labor-saving needs for customers' manufacturing processes

* Products that have acquired FSC® certification, an international forestry certification system

Strengths	<ul style="list-style-type: none"> ▶ Development and proactive deployment of sustainable products ▶ Capabilities in proposing value to customers and in marketing
Opportunities	<ul style="list-style-type: none"> ▶ Strengthening measures that contribute to society, such as meeting asbestos regulations ▶ Expanding demand for environmentally friendly products
Risks	<ul style="list-style-type: none"> ▶ Competition with products from emerging countries and with other materials

Focus

Launched Recycled Type of MAGIC TAPE™ Hook-and-Loop Fastener

In autumn 2022, Kuraray Fastening Co., Ltd. launched a new product. The new environmentally friendly type uses recycled polyester yarn. The world's first recyclable woven hook-and-loop fastener made of 100% polyester which does not use a back coating, this product will be sold for use in sports and outdoor brands going forward.

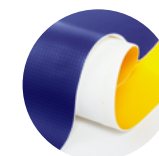


Review of 2022 and Outlook

Higher costs of raw materials, fuel, and logistics were offset by an improved sales mix and product price revisions, resulting in higher sales and profits.

◆ Clarino

Sales expanded in vehicle and luxury applications. We will respond to the increasing environmental awareness of our customers in this area going forward. This will involve expanding sales of sustainable materials, such as products based on recycled raw materials and environmentally friendly manufacturing processes, in various applications including sports shoes.



◆ Fibers and Industrial Materials

KURALON™ PVA fiber was affected by a delayed recovery in the production of automobiles and an economic slowdown, while sales of VECTRAN™ liquid crystal polymer fiber remained favorable, especially for exports. Going forward, we will further deepen our presence in areas that make use of the physical properties of KURALON™ as we further expand the use of VECTRAN™.

◆ Consumer Goods and Materials

While shipments of KURAFLEX™ nonwoven fabric increased for hygienic applications, demand in the restaurant industry was sluggish. Going forward, we will expand sales of KURAFLEX™, which uses functional resins and composite technologies, and of MAGIC TAPE™, our unique hook-and-loop fastener, including promoting an environmentally friendly type.

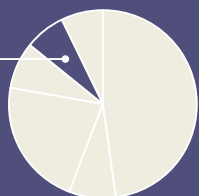


Trading

In addition to the manufacture and sale of polyester and other fiber and textile products, we sell Kuraray Group products in Japan and other parts of Asia.

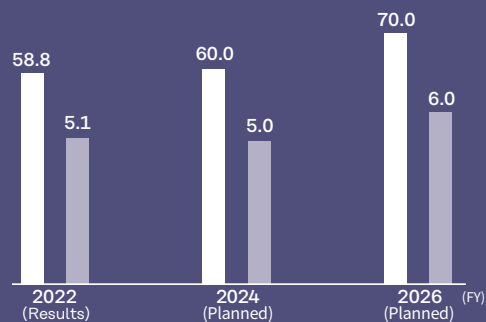
Net sales composition ratio

7%



Net sales / Operating income

■ Net sales (Billions of yen)
■ Operating income (Billions of yen)



Medium-Term Management Plan "PASSION 2026" Key Measures

In addition to boosting profitability by promoting high-value-added products and expanding our processing business, we will expand overseas sales, mainly in Asia. In addition, in cooperation with the Innovation Networking Center (INC), we will promote the creation of businesses that span our organizations.

Review of 2022 and Outlook

Although performance in the resins and chemicals business was affected by the economic slowdown in the second half of the year, overall the business remained steady, resulting in year-on-year increases in both sales and profits.

◆ Fibers and Textiles

In the apparel sector, sales of sports apparel and outdoor wear expanded steadily in Japan and China. In the materials sector, sales of CLARINO™ man-made leather and other products were favorable. We will continue to expand our sewing business, especially for sports and outdoor applications, by deepening our efforts with major business partners.



◆ Resins and Chemicals

Although sales in the Asian market were favorable in the first half of the year, the economic slowdown affected business in the second half. Going forward, we will steadily implement the various measures set forth in "PASSION 2026" and strive to expand the market as demand recovers.

Focus

Expanded Wearable Gear Applications and Launched Online Store

As part of the expansion of the value-added (processing) business, one of our key strategies in "PASSION 2026," we have completed the upgrade of production facilities for wearable gear applications such as electrical muscle stimulation (EMS) devices. We are exploring the expansion of the production lineup at our new Okayama plant. In November 2022, we launched a new online store selling high-performance lifestyle products to consumers. By making the website a venue for communication, we will pursue product development informed by customer feedback as we work to create better products.



Online Store (Japanese)
<https://store.kuraray-trading.co.jp/>

Strategies by Business

Expanding proprietary product businesses

- Shift from raw yarn and fabric sales centered on polyester filaments to product sales including wearable gear
- Expansion of value-added processed products

Expanding overseas businesses

- Overseas expansion adapted to growing Asian markets
- Utilization of Vietnamese production sites