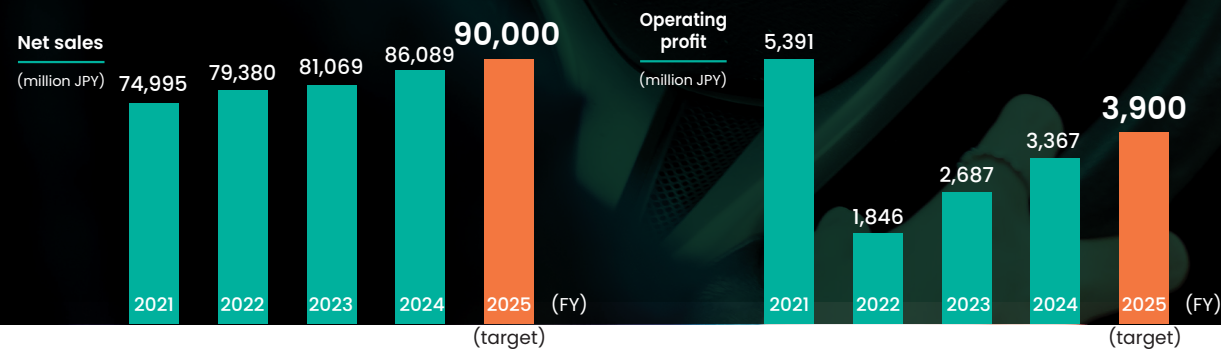


Business

Colorants and Functional Materials Business

Delivering colorants that enrich people's hearts, minds, and lifestyles, and functional materials that help address social issues

Changes in performance (as of February 2025)



SWOT analysis

	《Positive factors》	《Negative factors》
Internal factors	S <Strength> <ul style="list-style-type: none"> Capable of developing products—from material to finished product—based on dispersal technologies, particle and interface control technologies, and synthesis technologies Sustainable, stable supply through an integrated development and production system covering all stages from pigment synthesis to finished product 	W <Weakness> <ul style="list-style-type: none"> Profit structure biased toward certain businesses It is difficult to engage in mass business due to small scale compared to competitors
External factors	O <Opportunity> <ul style="list-style-type: none"> Expansion of the renewable energy Popularization of electric vehicles (EVs) Growing needs for environmentally friendly products Growing needs for value that resonates with the senses in addition to functionality 	T <Threat> <ul style="list-style-type: none"> Decline in demand for pigments for printing inks due to acceleration of digitalization Decline in demand for plastic products, resulting from growing environmental awareness, including awareness of the waste plastic problem

Category	Major products	Major applications
Chemicals	Pigments, pigment dispersions	Printing inks, paints for vehicle, plastic colorants, etc.
High functional chemicals	High functional pigments, pastes for color filter	Resist for color filter of flat panel display (FPD), camera devices for smartphones, inks for digital printing
Display materials	Color resists, OCF resists	Color filters for FPD, imaging sensors, etc.
Plastic colorants	Color / functional masterbatches, functional compounds	Plastic containers, vehicle interior / exterior, OA equipment, electrical appliances, solar cell components, plastic conductive materials for semiconductor equipment, etc.
Developed products and others	CNT dispersions, inkjet inks, paints for data recording materials, CCUS materials	Lithium-ion batteries, signboards, labels, magnetic tape for data storage, CO ₂ capture system, etc.

Message from management

Hideki Okaichi

President and Representative Director
Toyocolor Co., Ltd.



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Review of FY2024

In the Colorants and Functional Materials Business, we combine colorant design technologies and dispersion technologies to provide functional materials for many different sectors.

In FY2024, sales of liquid crystal color filter materials for large panels were impacted by changes in customer capacity utilization and a shrinking domestic market. However, new development projects and sales promotions produced positive results in our main markets of China and Taiwan.

Despite sluggish demand for plastic colorants in the domestic container and building materials markets, we have improved our profitability by reducing costs and focusing our resources. Overseas, we have improved our global performance by successfully launching new products for applications such as automobiles, solar cells, and air conditioners.

We expanded our sales of inkjet inks due to an increase in our market share, as well as growth in both the domestic and overseas digital printing markets.

We also ramped up our supply of CNT dispersions for lithium-ion batteries (LiBs) to be used in electric vehicles (EVs), by creating a stronger structure of five bases in four regions in the United States and Europe. Despite this, we failed to meet our targets due to a slowdown in the EV market.

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Medium-term strategy and priority measures for FY2025

Under the slogan "GROWTH," we will implement reforms necessary to enhance the profitability of our existing businesses while maintaining our market share. At the same time, we will focus on developing our strategic priority businesses, which will serve as key revenue pillars to drive the Group forward.

In liquid crystal display (LCD) color filter resists, we will establish a production system in collaboration with local partner companies to expand our market share in China and maximize profits. In optical semiconductor materials, for which there are now prospects for business expansion, we plan to steadily increase profits while further expanding the scope of the business through the development of next-generation technologies with a diverse range of applications.

In CNT dispersions for LiBs for EVs, we will continue to closely monitor the business environment as we develop our production systems in Europe, the US, China, and Japan, anticipating a continued shift toward EVs in the medium to long term. At the same time, we will diversify our revenue opportunities by securing new business and expanding our product lineup to include conductive additives for negative electrodes and lithium-manganese iron phosphate (LMFP) batteries. At the same time, we will continue working to develop next-generation technologies, including all-solid-state batteries, to respond to future changes in the market environment.

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Development of functional materials to address social issues

We are applying our organic synthesis and dispersion technologies, which we have accumulated over many years, to address social issues for the future. Here are some examples.

The first is a CO₂ absorption material that is effective for achieving carbon neutrality. We aim to achieve global commercialization of this material through the synthesis of our proprietary amine. The second is the development of millimeter-wave absorption materials and CMOS resists for sensors, which are essential for preventing malfunctions and improving the safety of autonomous driving. These have already been adopted by several client companies. The third is a plastic recycling business that utilizes waste plastics as raw materials. We are developing technologies and products centered on the theme of reducing plastic use and enabling reuse. This involves collecting mixed-color plastic waste, sorting it, and then utilizing coloring and processing technologies to align color tones and physical properties, restoring it to a level where it can be reused in containers.

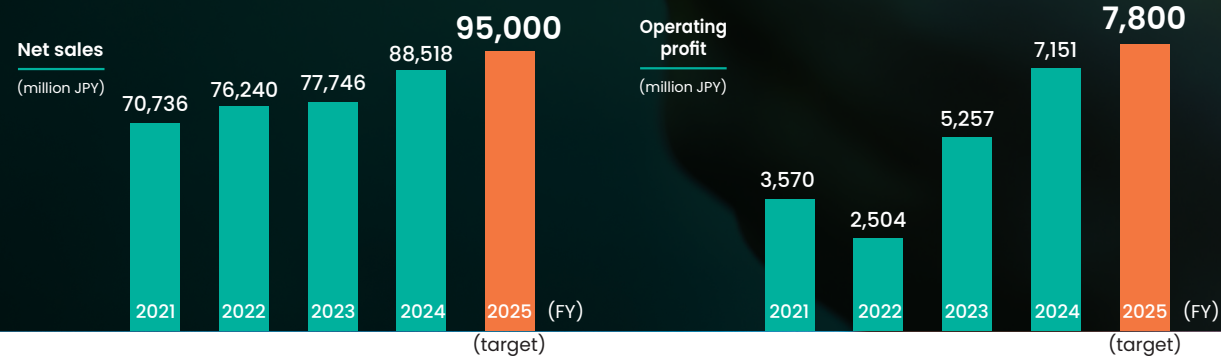
We are also concentrating on developing technologies and products that tackle various social issues, such as carbon electrode materials for perovskite solar cells, semiconductor materials, and materials designed to reduce blue light, which is believed to affect vision and the body's natural clock.

Business

Polymers and Coatings Business

Providing value to diverse markets based on polymers with greater functionality

Changes in performance (as of February 2025)



SWOT analysis

《Positive factors》

《Negative factors》

Internal factors	S <Strength> <ul style="list-style-type: none"> Advanced technological capabilities in precision polymer synthesis, dispersion stabilization, precision coating and processing Integrated production from in-house production of polymers to processing into adhesives and coating 	W <Weakness> <ul style="list-style-type: none"> Business earning structure susceptible to fluctuations in raw material prices Scale of operations and supply capabilities is small compared to that of major global manufacturers
	O <Opportunity> <ul style="list-style-type: none"> Expansion of new markets as a result of changes in industry structure (semiconductors, EVs, secondary batteries and bio) Growth in demand for environmentally friendly products resulting from increasing global environmental awareness 	T <Threat> <ul style="list-style-type: none"> Toughening of environmental regulations and increasing social demands (abandoning the use of plastics, recycling, solvent emission regulations and CO₂ emission regulations) Sharply rising raw material prices and difficulty in procuring raw materials

Category

Major products

Major applications

Adhesives	Pressure sensitive adhesives, laminating adhesives, hot-melt adhesives	Packaging films, flat panel display (FPD), lithium-ion batteries, body-wrapping labels for PET bottle, etc.
Coating materials	Adhesive tapes, functional film for electronics, marking films	Double-sided adhesive tapes, electronic products, signboards and interior / exterior decoration, etc.
Paints and resins	Can coatings, resins, hard coating materials	Beverage cans, food cans, drums, architectural paints, functional films, FPDs, etc.
Developed products and others	Medical products, natural extracts	Transdermal patches, foods, feeds, etc.

Message from management

Yasushi Ariyoshi

President and Representative Director
Toyochem Co., Ltd.



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Review of FY2024

In the Polymers and Coatings Business, we leverage our advantage of being able to develop not only products but also materials, making effective use of our precision polymer synthesis, coating, and dispersion technologies to deliver cutting-edge products.

In functional films and tapes, in FY2024, sales of functional films such as conductive adhesive sheets remained strong, due in part to the effect of the expansion of sales in China, in addition to an increase in mobile device production. In addition, progress was made in the achievement of results in the area of semiconductor-related materials.

Sales of pressure sensitive adhesives for displays and labels were slow in Japan, primarily due to rising raw material prices and costs that exerted downward pressure on profits. Overseas, however, sales increased steadily thanks to the expansion of facilities. Sales of adhesives for packaging were strong in Japan and increased in Southeast Asia and other overseas markets. Among the adhesives for industrial use, sales of adhesives for lithium-ion batteries were strong, reflecting the expansion of customers' operations.

Sales of can coatings for beverage cans remained strong in Japan. In Thailand, the demand for cans for processed seafood and beer increased, and sales expanded partly due to the acquisition of a coating manufacturer in the previous fiscal year.

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Medium-term strategy and priority measures for FY2025

We are developing a range of products that contribute to solving social issues, with the goal of becoming a manufacturer that is chosen both domestically and internationally for its high-quality, high-added-value polymer products.

In pressure-sensitive adhesives and other adhesives, overseas, we will optimize our global supply chain and further increase our production capacity, based on financial strategies that take into account capital investment and M&A in growing markets such as India and China. Meanwhile, in Japan, we will accelerate the transformation of our market portfolio in each business, striving to improve profitability and strengthen our resilience to market changes.

In can coatings, we will enhance our global network between overseas locations to expand the effect of M&A activities in 2023 across the Group as a whole, and generate synergies.

In electronics-related materials, we will drive the development of high-added-value products for strategic priority business areas such as next-generation displays and mobility batteries. We will steadily expand and improve our business performance in semiconductor products while accelerating the development of differentiated products and the acquisition of mass production technologies through the use of the polymer pilot plant at our Kawagoe Factory.

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Development of semiconductor products based on polymer technologies

Our functional films for mobile devices are gaining recognition in the electronics market and experiencing steady growth. This product line combines TOYOICHEM's core precision polymer synthesis technologies with dispersion and coating technologies.

Since the late 2010s, we have been working to enter the rapidly growing semiconductor industry by further refining our technologies. In 2024, we successfully secured the adoption of two products. One of these products is an insulating protection material from the LIOTELAN™ series, which includes both insulating protection and electromagnetic wave shielding materials for encapsulating package substrates. This is an example of a proposal we made for a customer's manufacturing process. Although it was a significant challenge for the customer, they recognized the value of our product and proposal.

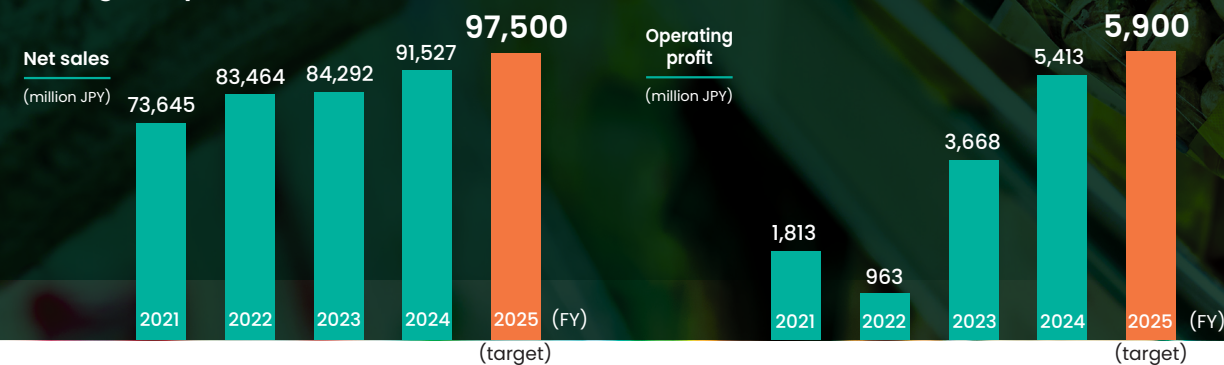
The other adopted product is a new polymer that imparts low dielectric characteristics and dimensional stability in insulating materials used in semiconductor-related components. Its adoption has been informally decided, and the customer is now considering mass production. Low dielectric properties contribute to achieving high-speed communication with minimal transmission loss, and our products are highly valued for their combination of strong adhesion with low dielectric characteristics. While these achievements are modest, we view them as the initial step toward making significant contributions to new technological advances in the semiconductor field.

Business

Packaging Materials Business

Providing eco-conscious packaging materials in view of a product's entire lifecycle

Changes in performance (as of February 2025)



Category	Major products	Major applications
Liquid inks	Gravure inks, flexographic inks	Flexible packaging materials, building materials, corrugated cardboards, labels, paper containers, etc.
Gravure printing systems and prepress	Gravure printing systems, gravure and flexographic plate making	Gravure / flexographic printing, precision plate making for electronics

SWOT analysis

	《Positive factors》	《Negative factors》
Internal factors	S <Strength> <ul style="list-style-type: none"> Technical capabilities to design and develop pigments, resins, inks, platemaking technologies and laminating adhesives Integrated production system and quality control capabilities covering all stages from materials to products Printing equipment necessary for the development of packaging materials and technologies for evaluating their performance 	W <Weakness> <ul style="list-style-type: none"> Easily affected by rising raw material prices, making it difficult to revise prices quickly Low-level market presence in Western markets
External factors	O <Opportunity> <ul style="list-style-type: none"> Population growth in emerging countries and consequent continued growth in overall demand for packaging materials Shift to paper and (recyclable) monomaterials to help achieve the SDGs and establish a circular economy 	T <Threat> <ul style="list-style-type: none"> Trend toward abandoning the use of ink, and adhesives as a response to the SDGs and circular economy

Message from management

Hideki Yasuda

President and Representative Director
Toyo Ink Co., Ltd.



Review of FY2024

In the Packaging Materials Business, we deal chiefly with liquid inks used for printing on food packages. In response to the global increase in environmental awareness, we provide many different environmentally-friendly products, including water-based products, solvent-free products, and biomass products.

In FY2024, we were able to significantly exceed our results in FY2023 by implementing activities aimed at expanding our market share in both domestic and overseas markets. In Japan, sales for use in pet food, frozen food products, and convenience store products continued to indicate solid demand. In the summer, demand for use in frozen desserts and beverages increased due to extreme heat. Sales of products for cardboard boxes increased due to demand associated with chilled drinks during the summer. Overall, however, demand declined due to a fall in exports of processed seafood. Overseas, sales showed sluggish growth due to a decline in consumption in China, but there was solid growth in demand in India and Southeast Asia, and even in South Korea, environmentally friendly water-based inks showed a growth in sales.

In the gravure cylinder platemaking business, demand for new printing plates for packaging started to increase in the second half of the fiscal year. Sales of precision platemaking related to electronics were trending modestly toward a recovery.



Medium-term strategy and priority measures for FY2025

In overseas markets where growth is expected to continue, we will continue to focus on increasing our share with sustainability-enhancing products. In addition, as a medium- to long-term strategy, we will work to create new markets through the creation of recycling systems.

As environmental awareness continues to grow worldwide, we will seek to increase our market share and contribute to environmental sustainability by proposing high-performance products such as barrier coatings and heat-resistant coatings, in addition to other environmentally friendly products. With regard to recycling systems in the field of packaging materials for food and daily necessities, we will advance to a more concrete verification stage, aiming to create a circular society.

In Asia, we will secure market growth in India and Southeast Asia while strengthening our water-based ink business in South Korea. We will also expand and streamline our operations in China by bolstering our sales and technical capabilities.

In Europe, we will leverage the supply capacity of our new plant in Turkey to expand our global business and develop new areas.

We will work with partners beyond the boundaries between industries in different ways to help establish a circular society and to expand our business through the creation of markets.



Peeling and deinking recycling technologies and practical applications

As concerns about marine plastic waste and global warming continue to grow, interest in reducing plastic use and recycling resources is increasing. Reducing the thickness of packaging films and converting laminated films to mono-material films are considered important in achieving this, and we have developed and are proposing functional coating agents that complement the gas barrier and heat-resistance functions of traditional laminated films. We are working to improve the quality of recycled plastic materials, such as by developing deinking coatings that effectively remove printing ink and laminated films, as well as peelable laminating adhesives. We are also building recycling systems that incorporate deinking and peeling processes. This has enabled the collection of near-transparent recycled plastics by type, leading to a significant expansion in the applications of recycled plastic materials.

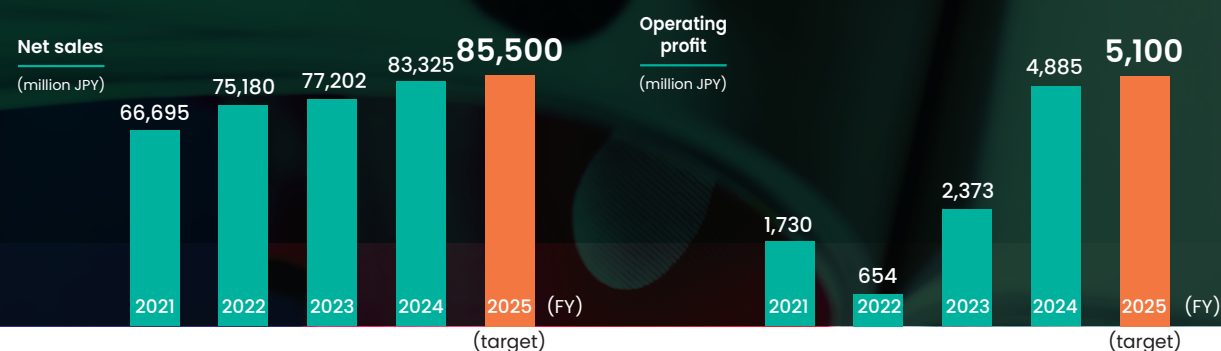
In November 2024, this initiative was adopted by a major daily consumables manufacturer, and pouch products using peelable adhesives were launched. We are continuing development efforts with the aim of horizontal recycling, whereby factory scraps generated during pouch production are stripped and recycled into plastic materials that are then reused as raw materials for pouch products. We are already working with many companies, and have attracted a high level of interest at trade shows.

Business

Printing and Information Business

Deploying products in the high-value added printing market featuring environmentally friendly technologies and technologies that enable superior functionality

Changes in performance (as of February 2025)



Category

Offset inks

Major products

Offset inks, newspaper inks, metal decorative inks, UV curing inks

Major applications

Flyers, books, magazines, newspapers, stickers / labels, paper containers, beverage cans, food cans, etc.

Printing materials and machinery

Offset printing materials, printing equipment

Offset plate making, offset printing, etc.

Developed products and others

Screen inks, others

Packaging, instrument panel for vehicles, printed electronics materials, etc.

Message from management

Hideki Yasuda

President and Representative Director
Toyo Ink Co., Ltd.



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Review of FY2024

In the Printing and Information Business, we deal mainly with printing inks for commercial printing applications such as books, magazines and flyers and for container applications such as paper containers and beverage cans.

In FY2024, sales of products for flyers, advertising, and publishing in Japan remained slow due to the continued structural contraction of the information-related printing market, owing to the ongoing shift toward digital media for information distribution. Improvements were made on the profit front by cost-cutting through business structure reforms and price revisions in response to rising raw material prices and cost increases.

Sales of functional inks for card usage showed growth, and sales of energy-saving, highly sensitive UV curing inks also expanded.

In overseas markets, the Chinese market was slow but sales of products for educational materials increased. In Southeast Asia, sales of functional inks for paper containers and packaging were strong. In Europe and the United States, sales of UV curing inks compatible with LED and energy-saving UV curing inks remained strong, although in the Americas, sales of these products were affected by delays in distribution in the second half of the fiscal year.

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Medium-term strategy and priority measures for FY2025

We believe that the domestic information-related printing market will continue to shrink structurally, and that demand for paper media will decline in the future due to the shift to digital media in commercial and publishing printing. Under these business conditions, we will continue to engage in alliances for production, consider measures to respond to market contraction, and implement structural reforms such as improving operational efficiency through digital transformation (DX,) as we strive to improve profitability.

Regarding functional inks for packaging, the paper container packaging market is expected to grow amid the worldwide trend towards decarbonization. In Japan, we will work to expand sales of UV curing inks and functional coatings for use on paper containers and packaging materials. We will also push ahead with the transformation of our business portfolio on a global scale by actively promoting sheet-fed printing inks for paper containers and metal decorating inks for can production overseas.

We will also work to construct a global supply chain management (SCM) system for existing businesses and develop new markets by capitalizing on our long-cultivated material design and ink technologies. We will create and supply new products aligned with the characteristics of customers and regions to continually increase the value of this business.

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CX Center operations: results from DX in sales activities

In January 2024, we established the CX Center in the Tokyo area, utilizing the CEEX web platform to disclose and provide product information, and to respond to customer inquiries and requests. Through this platform, we have introduced a new style of sales activities, the first of their kind in the printing ink industry, shifting from the traditional model of individual sales representatives handling individual customers to communicating with customers via a web-based platform.

CEEX is equipped with features that are highly compatible with Internet use, such as information browsing, request applications, and information distribution. Technical requests that previously required handling by sales representatives can now be processed more quickly and efficiently using these functions, resulting in improved customer satisfaction.

We have also been implementing strong internal business process reforms, including DX, to enhance profitability. As one of these measures, the CX Center achieved significant results in improving operational efficiency in FY2024. Going forward, we will expand the use of CEEX and introduce it into other areas, while working to improve business process efficiency and productivity to adapt to changes in the business environment.

SWOT analysis

《Positive factors》

《Negative factors》

Internal factors

S
Strength

- Formulation technologies, evaluation technologies and equipment
- Extensive lineup of environmentally friendly products
- The Business has the largest share of the Japanese commercial printing using rotary offset inks and UV curing inks market

W
Weakness

- Scale of business infrastructure is too large for the decrease in demand due to digitalization and population decline

External factors

O
Opportunity

- Expansion of paper packaging materials due to the trend of shifting away from the use of fossil fuel resources and plastics
- Accelerating global expansion by advancing the use of information and communication technologies
- Increased demand for UV curing inks due to expectations for energy-saving products

T
Threat

- Domestic printing industry continues to shrink due to digitalization and population decline and continuing decline in demand for inks
- Decline in demand for offset inks due to partial shift to inkjet printing method