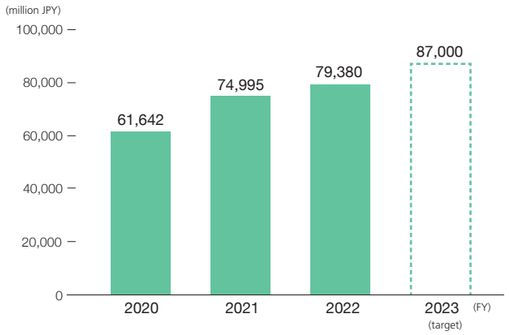
Colorants and Functional Materials Business

Pursuing technologies to achieve colors and functionality,
with organic pigments as the starting point

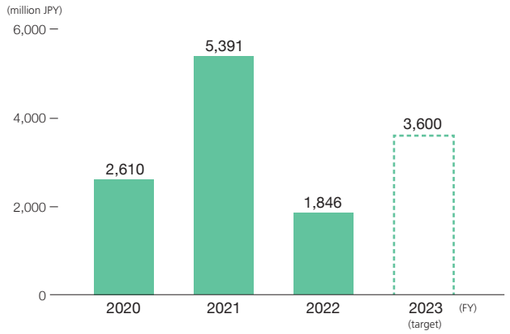
Changes in performance

(As of February 2023)

Net sales



Operating profit



* Based on the results for fiscal 2022, we have revised our targets for fiscal 2023, the final year of the SIC-II period.

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,) inks for digital printing
Display materials	Color resist	Color filters for FPD, imaging sensors, etc.
Plastic colorants	Color Masterbatches, Functional Masterbatches, Functional Compounds	Plastic containers, vehicle interior / exterior, OA equipment, electrical appliances, etc.
Developed products and others	Paints for data recording materials, carbon dispersions, inkjet inks	Magnetic tape for data storage, lithium ion batteries, signboards, labels, etc.

SWOT analysis

	《 Positive factors 》	《 Negative factors 》
Internal factors	**S** 〈Strength〉 • Capable of developing products—from material to finished product—based on dispersal technologies, particle and interface control technologies, and synthesis technologies • Integrated development and production system covering all stages from pigment synthesis to finished product	**W** 〈Weakness〉 • Profit structure biased toward only certain product groups • Scale of our operations in the pigments and plastic colorants business is small compared to that of major global manufacturers
External factors	**O** 〈Opportunity〉 • Expansion of the renewable energy • Popularization of electric vehicles (EVs) • Reduction in the amount of plastic used and growing needs for environmentally friendly products	**T** 〈Threat〉 • 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

Hideki Okaichi
President and
Representative Director
Toyocolor Co., Ltd.

▶ FY2022 results

Technologies for the synthesis of organic pigments were one of the key starting points for the Toyo Ink Group. This business develops organic pigment-based products adapted for various applications. In particular, in liquid crystal color filter materials, we are the only company that manufacture all of the pigments, mill bases (CF pastes,) and color resists (display materials) we sell in-house, and the contribution of these products to the Group's consolidated business results is large.

In fiscal 2022, production was reduced sharply from the second quarter onward due to a decline in demand for liquid crystal display (LCD) panels for large television sets and smartphones, and sales of display materials in the second half of the fiscal year were very sluggish. Sales of plastic colorants were strong, primarily for containers and overseas solar power generation, but sales of colorants for automobiles and office equipment in particular were sluggish due to the impact of soaring raw material prices, semiconductor shortages, and lockdowns in China. Sales of inkjet inks for commercial printing and signage were strong, and sales of CNT dispersions for automotive LiBs increased due to the development of bases in Europe and the United States.

▶ Priority measures for FY2023

Linking the recovery of growth markets recovering from the pandemic to solid business performance

In fiscal 2023, we will seek to improve earnings in growth markets by ensuring that recovery from the COVID-19 pandemic leads to improvements in business performance.

We will continue to cater to new markets and offer new functions—such as recycling and biodegradability—for plastic colorants, which were affected by soaring raw material prices and production adjustments in 2022.

In inkjet ink, we will seek to improve earnings by increasing sales in the European market, where there is growing demand, accelerate the development of flexible packaging materials in Japan, and focus on sign display applications in the Chinese market.

As the market recovers, shipments of liquid crystal color filter materials will increase, primarily in Taiwan and China.

In response to the rapid expansion of the market for CNT dispersions for automotive LiBs, we established LioChem e-Materials LLC (Kentucky, USA) as a second manufacturing base, with preparations now underway for full-scale operation. In line with the expansion of the EV market, net sales in the current fiscal year are expected to more than double in comparison with last year, and production volumes at sites already in operation in Europe and the United States will also increase significantly, as we endeavor to make a swift return on our investments by improving earnings.

Topics of priority measures

Improving recycling efficiency — Reduction of CO_2 emissions in recycling by reducing time required —

As efforts to reduce greenhouse gas emissions and create a recycling-oriented society progress globally, we are also making efforts to recycle collected plastics, primarily from PET plastic bottles.

Toyocolor Co., Ltd. has developed a new product to encourage the recycling of PET resin, a key raw material for PET plastic bottles and other products. The addition of this product during the PET recycling process significantly reduces the time taken to transform collected PET into new PET resin. In this way, we can contribute to the widespread recycling of PET and reduce energy usage and CO_2 emissions in the recycling process. We will being supplying this product not only in Japan, but also simultaneously at our global sales bases, including our locations in North America, China, and Southeast Asia, contributing to efforts toward creating a recycling-oriented society in each country.

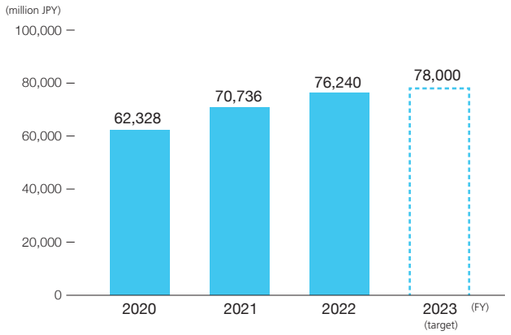
Polymers and Coatings Business

Providing value to diverse markets based on polymers with greater functionality

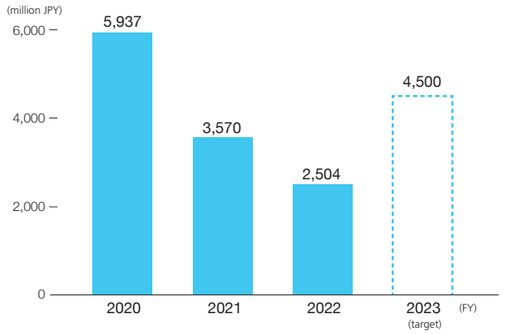
Changes in performance

(As of February 2023)

Net sales



Operating profit



* Based on the results for fiscal 2022, we have revised our targets for fiscal 2023, the final year of the SIC-II period.

Category	Major products	Major applications
Adhesives	Pressure sensitive adhesives, laminating adhesives, hot-melt adhesives	Packaging films, flat panel display (FPD,) bookbindings, body-wrapping labels for PET bottle, etc.
Coating materials	Adhesive tapes, functional film materials 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.

SWOT analysis

	《 Positive factors 》	《 Negative factors 》
Internal factors	**S** 〈Strength〉 • Advanced technological capabilities in precision polymer synthesis, dispersion stabilization, precision coating and processing • Integrated production from self-produced materials (polymers) to adhesive manufacture and coating	**W** 〈Weakness〉 • 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
External factors	**O** 〈Opportunity〉 • Expansion of new markets as a result of changes in industry structure due to new environmental regulations (5G, EVs, secondary batteries, semiconductors, biotechnology and sensors) • Growth in demand for environmentally friendly products resulting from increasing global environmental awareness	**T** 〈Threat〉 • Toughening of environmental regulations and increasing social demands (abandoning the use of plastics, recycling, solvent emission regulations and CO_2 emission regulations) • Sharply rising raw material prices and difficulty in procuring raw materials • The rejection of materials and fiercer competition resulting from changes in the specifications of smartphones and other electronics products

Toshinori Machida
President and
Representative Director
Toyochem Co., Ltd.

FY2022 results

In fiscal 2022, adhesives performed well both in Japan and overseas, primarily for food packaging applications. Although sales of pressure sensitive adhesives for labels and displays were affected by the global economic slump, sales expanded in the United States and India, where facilities were enhanced and expanded. In functional films and tapes, functional film products for use in finished goods such as smartphones and LCD panels were greatly affected by production adjustments in the global electronics market. Domestic sales of new can coatings with added functionality increased, but overall sales of can coatings saw sluggish growth, reflecting weak overseas sales of food can coatings due to low catches of fish.

Overall, profits overseas improved due to price revisions and stable raw material prices, while raw material and energy prices in Japan continued to soar, resulting in an increase in sales but a decrease in profit on a consolidated basis.

Priority measures for FY2023

Improving resilience to changes in the business environment and getting back on track for future growth

In response to persistently high raw material and energy prices, we will continue to steadily revise our selling prices to appropriate levels, seek to improve profitability, and transform our business profit structure by expanding our lineup of high-value-added products and reviewing low-profit products. At the same time, we will work to expand our business in growing overseas markets, improve our resilience to environmental changes, and strive to get back on track for future growth.

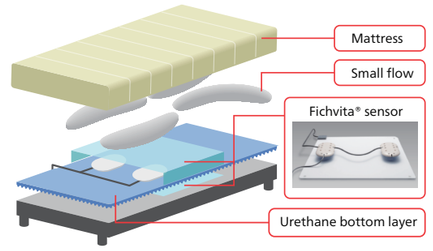
In functional films and tapes / coating materials, we will work to develop new materials for the mobile and semiconductor markets, and enhance our marketing through our Technical Center in Shenzhen, China, and our US bases. In pressure sensitive adhesives and other adhesives, we have been expanding our facilities at our overseas bases, and we will continue discussions for the next phase of expansion for sites in India and North America, which are already close to full operation. In can coatings, we aim to expand our market share in Southeast Asia by developing products that meets local needs by leveraging synergies with Thai Eurocoat Ltd., a food-can coating company acquired by the Group in Thailand. For medical products at the newly completed plant in Moriyama, we will work to develop new products using equipment that complies with the latest regulatory requirements. We will also utilize the new polymer (pilot) building in Kawagoe—which will start operations this fiscal year—to accelerate the development of new polymers for use in semiconductor-related materials and EVs. At the same time, we will expand our environment-friendly product lineup to reduce CO_2 emissions and shift away from the use of plastics.

Topics of priority measures

Healthcare Business using sensing systems — Paramount Bed "Kokochia Riraku Flow" —

Paramount Bed Co., Ltd.'s bedsore-preventing air mattress Kokochia Riraku Flow equipped with the non-optical sensing system Fichvita®—developed by the Toyo Ink Group—incorporates an industry-first sensor function that automatically detects the user's posture. It has been very well received, and sales have been increasing steadily since its launch in 2020.

Fichvita®—which was created through the combination of coating technologies cultivated in the development of electromagnetic shielding materials and new electronic circuit design technologies—is being developed through customized development (adjustment) to enable it to work optimally in conjunction with customer products. Since it enables sensing that is fully integrated into daily life, without collecting personal information and eliminating the feeling of being seen, demonstrative testing is also underway to ascertain and understand the state of seating usage of autonomously operating buses, and the number of customers visiting and staying at stores in real time.



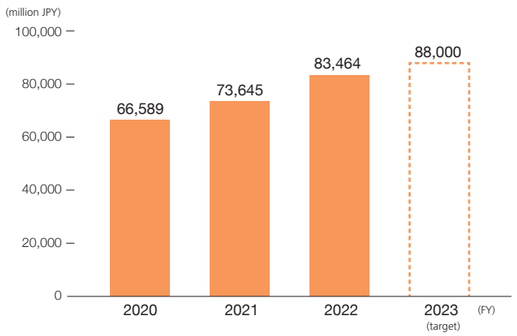
Packaging Materials Business

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

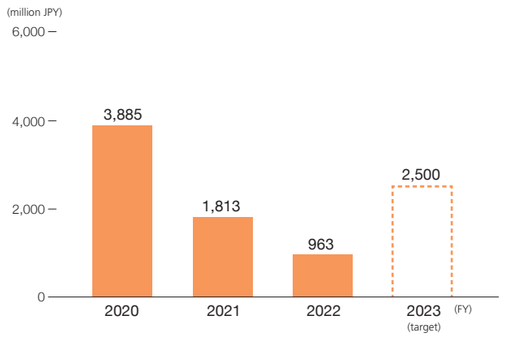
Changes in performance

(As of February 2023)

Net sales



Operating profit



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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〉 • 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 • Ability to respond promptly to customers through in-house print prototyping of flexible packaging films and evaluation technologies	**W** 〈Weakness〉 • 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〉 • Population growth in emerging countries and consequent continued growth in overall demand for packaging materials • Changes in the forms and functions demanded of packaging materials as a response to the SDGs and the circular economy, and the shift from plastic to paper and metal	**T** 〈Threat〉 • Trend toward abandoning the use of ink, and adhesives as a response to the SDGs and circular economy • Widespread popularization of recyclable materials and configurations accompanying the movement to eliminate or reduce the use of plastics, and reduce CO_2 emissions

Masato Yanagi
President and Representative Director
Toyo Ink Co., Ltd.

FY2022 results

The primary products in this business segment are gravure inks, which are primarily used for food packaging printing. For this reason, stable shipments are expected to continue even in the midst of a recession, and overseas markets in particular are expected to expand in line with population growth. With rising global environmental awareness, there are also growing needs in Japan for biomass inks, which are environmentally friendly products, as well as water-based inks and solvent-free laminating adhesives, which are expected to help reduce CO_2 emissions. There is also a growing overseas trend toward the use of paper packaging materials and mono-materials, with a view to reducing plastic usage.

In fiscal 2022, performance remained strong due to steady demand for inks for food products such as frozen foods, beverage labels and noodles remained steady in Japan, despite the COVID-19 pandemic, with customers accumulating inventory in anticipation of rising prices and difficulties in procuring various materials. Overseas, shipments in China declined due to lockdowns. However, sales were firm in other regions, reflecting a recovery in economic activity and effects of expansion of sales. Meanwhile, profits decreased due to difficulties in global procurement difficulties and soaring prices of raw materials, along with rising energy and transportation costs.

Priority measures for FY2023

Growth investments and price revisions in overseas markets

Our key advantages among printing ink manufacturers are that we have the technology to manufacture the plates required for printing and the technology to develop laminating adhesives that are indispensable for food packaging with multi-layered structures. We also have our own in-house print prototyping equipment and evaluation technologies. This has led to us gaining the trust of many brand owners, and in recent years we have contributed greatly to the development and practical application of products using raw materials with low environmental impact—such as biomass and water-based products—together with brand owners.

By leveraging these strengths, we will continue to lead the way in addressing environmental issues in the packaging industry in FY2023. In order to respond to the growth in demand for packaging materials due to population growth in emerging countries, we will make swift efforts in second phase augmentation of production equipment in Gujarat, India. At the same time, we expect raw material prices to continue rising this fiscal year, and we are proceeding with appropriate revisions to prices at an early stage. As a fundamental measure for this business, which is susceptible to the influence of raw material prices, we will also implement cost reductions such as increasing profitability through product integration and by introducing labor-saving equipment.

Topics of priority measures

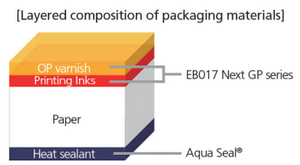
Heat sealant made of biodegradable resin originating entirely from biomass

— Ajinomoto Pal Sweet® Slim Up Sugar® packaging material —

Amid growing interest in environmental issues, paper is attracting renewed attention as one measure to reduce plastic usage and CO_2 emissions, and efforts to use paper are also becoming more widespread in packaging materials. As part of such efforts, we have developed environmentally friendly paper packaging materials in partnership with Ajinomoto Co., Inc., ITOCHU Corporation, and ITOCHU PLASTICS INC. This packaging material uses Aqua Seal®, a heat sealant made from 100% biodegradable resin derived entirely from biomass, and printing inks and OP varnish made mainly from biodegradable polylactic acid resin originally developed by our company.

There is currently a strong desire to create a sustainable world, and addressing the problems of waste plastics, marine plastic waste, and global warming has become a pressing social issue. The Group endeavors to provide products and solutions that can cater flexibly to ever-changing needs, with the aim of achieving both enrichment of people's lives and global environmental conservation.

[Layered composition of packaging materials]



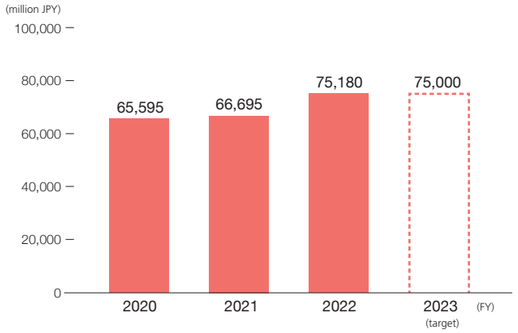
Printing and Information Business

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

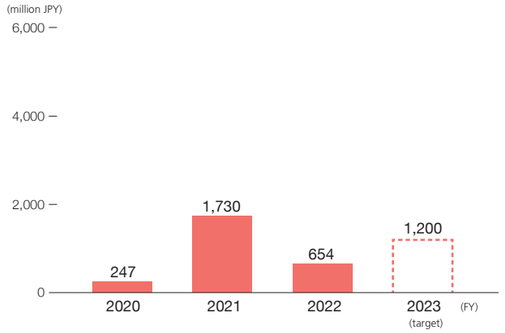
Changes in performance

(As of February 2023)

Net sales



Operating profit



* Based on the results for fiscal 2022, we have revised our targets for fiscal 2023, the final year of the SIC-II period.

Category	Major products	Major applications
Offset inks	Offset inks, newspaper inks, metal decorative inks, UV curing inks	Flyers, books, magazines, newspapers, stickers / labels, paper containers, beverage cans, food cans, etc.
Printing materials and machinery	Offset printing materials, printing inspection equipment	Offset plate making, printing paper surface inspection, etc.
Developed products and others	Screen inks, others	Packaging, instrument panel for vehicles, printed electronics materials, etc.

SWOT analysis

	《 Positive factors 》	《 Negative factors 》
Internal factors	**S** 〈Strength〉 • Technical capabilities in formulation, extensive evaluation equipment and validation know-how • Extensive lineup of environmentally friendly products • Top market share in Japan for rotary offset inks and UV curing inks in the commercial printing field • In-house production capacity and technical capabilities for the two major raw materials—pigments and resins	**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	**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 flexographic and inkjet printing methods

Masato Yanagi
President and Representative Director
Toyo Ink Co., Ltd.

FY2022 results

The printing & information Business segment offers ink products such as rotary offset, offset sheet-fed offset, newspaper, and metal decorating inks. These can be broadly divided into two types of applications. The first is for commercial printing of books, magazines, and newspapers, etc., and the second is for containers such as paper container packaging materials and beverage cans. The commercial printing market has been shrinking due to the progress of digitalization in recent years, and has shrunk at an accelerated pace due to the impact of the COVID-19 pandemic. Despite this, paper container applications have remained steady and the market is expanding moderately.

In the Japanese domestic market in fiscal 2022, metal decorating inks for paper containers and beverage cans performed particularly well among offset inks, but performance for commercial printing applications was sluggish, with sales increasing but profit declining significantly. At the same time, sales in the commercial printing field remained sluggish as in Japan, sales and profits overseas increased due to strong shipments for paper container applications, owing to a market environment that differs from that of Japan, with a high ratio of shipments for paper containers.

Priority measures for FY2023

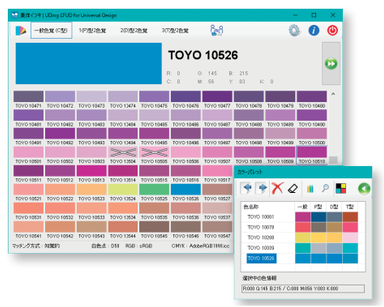
Strengthening structural reforms and expanding sales of functional inks

The Toyo Ink Group has the top share in offset inks in Japan and possesses a wealth of formulation design technologies, evaluation equipment—such as printing presses—and validation know-how, as well as an extensive lineup of environmentally friendly products. However, the shrinkage of the commercial printing market due to digitalization is steadily progressing. In FY2023 we have set the priority measure of structural reforms such as restructuring to build optimal production, logistics and sales systems according to the scale of demand for rotary offset, sheet-fed offset and newspaper inks.

At the same time, UV curing inks, metal decorating inks and screen inks—referred to as functional inks—are printing inks that target markets with high added value, which are expected to display growth in sales volume in the future. In the field of UV curing inks, we aim to further expand sales of environmentally friendly biomass products. In metal decorating inks, for which the Group has a very high domestic market share, we will accelerate the growth of environmentally friendly products by introducing power / energy-saving ink products to overseas markets.

Topics of priority measures

Launch of Color Universal Design tool Lioatlas® CFUD subscription service

— Achieving “barrier-free” color —

In everyday life, we often sort out or divide information using colors in order to convey it more easily. However, it is known that there is not only one type of color vision (our born sense of color) in humans, and that there are color combinations that are difficult to distinguish depending on the color vision type. Color Universal Design is an initiative to eliminate the difficulty in distinguishing between colors caused by these differences in color vision types. Lioatlas® CFUD is an assistive tool that that supports color universal design by allowing anyone to easily create easy-to-see color combinations that do not differ depending on the color vision type. It not only helps users to select the best color combinations, but also allows them to see how colors will look different depending on a person’s color vision type.