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Corporate Communication Department

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TOAGOSEI GROUP REPORT (Integrated Report) 2023

TOAGOSEI GROUP REPORT 2023

TOAGOSEI GROUP REPORT Integrated Report



 **TOAGOSEI**

Contents

Toagosei Group Profile

03	Toagosei Group's Corporate Philosophy System
04	Toagosei Group's Profile
06	Toagosei Group's Products Serve Society
08	Toagosei Group's Value Creation Trajectory

Value Creation Story

10	Message from Management
14	Value Creation Flow

Value Creation Strategy

16	Special Feature 2023-2025 2025 Medium-Term Management Plan
20	Toagosei Group Materialities
21	Financial Capital Strategy
22	Message from the Vice President
24	R&D Intellectual Property Strategy R&D Strategy Dialogue
26	Special Feature New Products Development Division Expansion of high-value-added products and creation of fourth pillar

28	R&D Supporting the Growth Strategy
32	Commodity Chemicals
34	Polymer & Oligomer
36	Adhesive Material
38	Performance Chemicals
40	Plastics

Foundation Supporting Value Creation

42	Sustainability Strategy Dialogue
44	Sustainability Management
46	Responsible Care (RC) Management
52	Environmental Initiatives
54	Human Resources Initiatives
61	Community Initiatives
62	Directors
64	Message from an Outside Director
65	Corporate Governance
71	Risk Management
72	Compliance

Financial data

74	Financial Highlights
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Editorial policy

This report was created to communicate to stakeholders our efforts to improve corporate value in an easy-to-understand way. It discusses management policy and business strategies to help achieve sustainable growth, as well as non-financial information, including our measures to address societal issues. Information is also posted on our website.

Degrees of achievement indicated in PDCA tables

- ★★★★ : Target achieved
- ★★★ : Progress slower than originally envisaged and target not achieved (target achievement rate of 80% or higher)
- ★ : Target not achieved (target achievement rate of less than 80%)

Organizations covered by report

Articles in this report covers the Toagosei Group (Toagosei Co., Ltd. and its consolidated subsidiaries). Note, however, that scope of aggregation may differ depending on reporting data. In such cases, specific reporting scopes are indicated.

Reference guidelines

- "International Integrated Reporting Framework," IFRS Foundation
- "Collaborative Value Creation Guidelines 2.0," Ministry of Economy, Trade and Industry (METI)
- "Sustainability Reporting Standards," Global Reporting Initiative (GRI)
- TCFD Recommendations

Date of issue of the Japanese version

June 2023
Next: June 2024 (Plan)

Period covered

January 1, 2022 to December 31, 2022
*Some articles include information on activities conducted in 2023.

Toagosei Group's Corporate Philosophy System

Corporate Philosophy

Through the endless possibilities of chemistry, we bring happiness created by highly functional materials.

Declaration

New possibilities for society and future happiness for everyone-these are the things that we will deliver through our highly functional materials.

We will continue to challenge ourselves. Utilizing the technologies we have acquired thus far, we will strive to enter new fields to provide the sort of value that only we can offer.

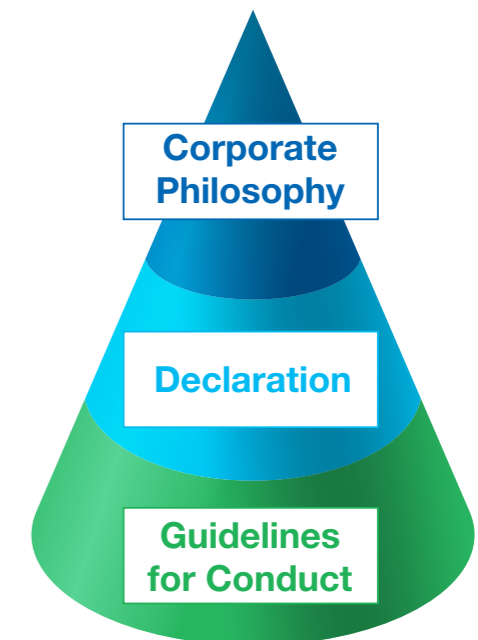
We will never stop moving. We will recognize the various changes in the world around us and be a societal leader through the power of chemistry, conducting ourselves as a company that co-exists with the people of society.

Guidelines for Conduct

- Vision
Have a vision for the future while creating superior key materials.
- Challenges
Push new boundaries with a strong will and imaginative ideas.
- Cooperation
Create new businesses together with our customers and partners.

Code of Conduct

1. Mission
We will develop and provide socially useful and safe products and services that contribute to the creation of a comfortable living environment and to the development of a sustainable society.
2. Respect for Human Rights
We respect the human rights of all people.
3. Compliance with Norms
We will comply with domestic and foreign laws and regulations including their spirit, and with internal rules as we act in accordance with high ethical standards, common sense and responsibility. We will maintain sound relationships with politics and government, follow proper business practices in our relationships with business partners, and engage in fair and free competition.
4. Communication
We will disclose information that is necessary for society in a timely and easy-to-understand manner, and strive to maintain and develop relationships of trust through constructive dialogue with all stakeholders.
5. Coexistence with the International Community
As a member of the international community, we will comply with the laws and regulations of each country in which we operate, respect cultures and customs, and contribute to the sustainable development of local communities.
6. Confrontation with Antisocial Forces
We will resolutely confront any antisocial forces or groups that threaten the order and safety of civil society.
7. Social Contribution
We will take a global perspective and, as a good corporate citizen, actively promote contributions that are closely tied to the countries and communities in which we are located.
8. Harmony with the Environment
We will voluntarily and proactively address environmental issues for the sustainable development of society as a whole.
9. Work Environment
We respect the diversity, personality and individuality of our employees, and achieve work styles that enable them to maximize their abilities. In addition, we will strive to create a safe and comfortable work environment that affords comfort and prosperity for our employees.
10. Crisis Management
We furnish an organized crisis management system to prepare for crises that may be anticipated in the course of our corporate activities. In the event of a crisis, we will act in accordance with internal regulations and strive to minimize damage.
11. Actualization of this Charter
Recognizing that it is their role to actualize this Charter, members of management shall prepare an effective governance system and ensure that corporate ethics are thoroughly implemented throughout the Group. In the event that a violation of this Charter occurs, we will endeavor to resolve the situation, determine the cause, and prevent recurrence in a manner that is fully understood by society.



Our communication tools

Contact:

For any questions or comments about this report, please contact the following:

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Toagosei Group's Profile

Since its establishment on July 17, 1944, Toagosei has achieved continued growth in line with the development of the chemical industry in Japan.

The Toagosei Group is expanding its technology and product fields by displaying unique strengths in five business fields: Commodity Chemicals, Polymer & Oligomer, Adhesive Material, Performance Chemicals, and Plastics.

JAPAN

Toagosei Co., Ltd.

Head Office, Osaka Branch, Nagoya Branch, Shikoku Sales Office, Fukuoka Sales Office, Nagoya Plant, Yokohama Plant, Takaoka Plant, Tokushima Plant, Sakaide Plant, Oita Plant, Kawasaki Plant, Hirono Plant, General Center of R&D, Institute for Advanced Sciences, Takaoka Creation Laboratory, Tokyo Technology Laboratory



Principal Affiliated Companies

- Toa Techno-Gas Co., Ltd.
- MT Ethylene Carbonate Co., Ltd.
- MT AquaPolymer, Inc.
- Aron Packaging Co., Ltd.
- Toa Kenso Co., Ltd.
- Aronkasei Co., Ltd.
- TG Corporation
- Toa Business Associe Co., Ltd.
- Toa Kogyo Co., Ltd.
- Toa Logistics Co., Ltd.



Monozukuri Center, Aronkasei Co., Ltd.

Company Profile

Establishment	July 17, 1944
Head Office	1-14-1 Nishi-Shimbashi, Minato-ku, Tokyo, 105-8419 Japan
President and Representative Director	Mikishi Takamura
Capital	20,886 million yen
Number of Employees	2,517 on a consolidated basis (as of December 31, 2022)
Fiscal Year End	December 31
Stock Listing	Tokyo Stock Exchange Prime Market
Securities code	4045

Main business lines

- Commodity Chemicals
- Polymer & Oligomer
- Adhesive Material
- Performance Chemicals
- Plastics
- Others

ASIA

China

- Toagosei Hong Kong Limited
- Toagosei (Zhuhai) Limited
- Toagosei (Zhangjiagang) New Technology Co., Ltd.
- Toagosei (Shanghai) Management Co., Ltd.

Taiwan

- Taiwan Toagosei Co., Ltd.
- Toa-Jet Chemical Co., Ltd.

South Korea

- Toagosei Korea Co., Ltd.

Singapore

- Toagosei Singapore Pte Ltd.

Thailand

- Toagosei (Thailand) Co., Ltd.
- Aronkasei (Thailand) Co., Ltd.



Toagosei (Thailand) Co., Ltd.
Aronkasei (Thailand) Co., Ltd.

About our corporate logo

Our corporate logo combines the letters "T" for TOA and "G" for GOSEI. The emphasis placed on "T" articulates the words "Trust" and "Technology." The corporate logo symbolizes our commitment to rich creativity based upon trust and technology. The "T" element expresses "power," the "G" loop "emotion" and the three circles new possibilities generated from this combination.

AMERICA

USA

- Toagosei America Inc.
- Elmer's & Toagosei Co.

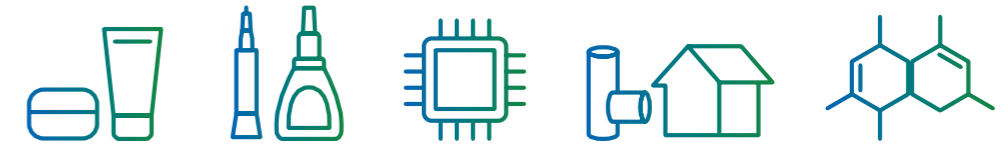


Toagosei America Inc.



Toagosei Group's Products Serve Society

The Toagosei Group's products can be found throughout everyday life. These products help not only to make our lives more comfortable but also to protect the environment.



Businesses with core roles in the growth strategy

Polymer & Oligomer

P34

Polymers

● Acrylic polymers

We offer a wide range of acrylic polymers, such as dispersants and thickeners, for various uses such as pharmaceuticals, cosmetics and toiletries.



● Polymer flocculant ARONFLOC

This chemical agent is widely used in wastewater treatment not only at sewage treatment plants but also for treating wastewater from paper manufacturing and food processing plants.



Oligomer

● UV-curing resin ARONIX

The ARONIX series is used in many fields, ranging from paints and inks to adhesives and electronic materials. These environmentally friendly resins are free of organic solvent.



Adhesive Material

P36

● Aron Alpha instant glues (U.S. brand name: Krazy Glue)

Aron Alpha and Krazy Glue are the top brands in instant glues. Our wide range of organic-solvent-free, environmentally friendly adhesives satisfies diverse consumer needs.



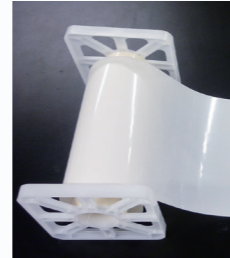
● Functional adhesives

We offer a range of functional adhesives for industrial applications including reactive, hot-melt, and UV-curing types. These adhesives are widely used in the assembly of automotive components and electronic components, among others.



● Low-dielectric bonding film

A film-type modified epoxy adhesive with excellent dielectric properties, it is used in equipment for high-capacity, high-speed communications such as 5G.

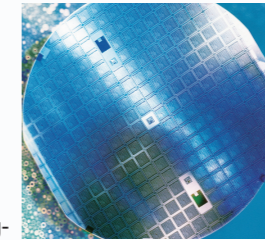


Performance Chemicals

P38

● High-purity inorganic chemicals

High-purity inorganic chemicals, such as liquid hydrogen chloride used in the manufacture of silicon wafers and semiconductor devices, are essential in various cutting-edge industrial fields.



● KESMON inorganic deodorant

KESMON functions as a deodorant in various situations, such as in deodorizing toiletries and for clothing and the interior of cars. Odors are adsorbed through a chemical reaction, preventing the unpleasant odor from being re-emitted.



● AronFibro cellulose nanofiber

We have developed a cellulose oxide that can be easily nano-sized using our proprietary process. It is attracting attention as a material that contributes to the realization of a decarbonized society.



Plastics

P40

● Anjyu-brand nursing care products

We are addressing the growing demand associated with the aging population, developing products that match the needs of the nursing care field and everyday life so that seniors can live a full and comfortable life.



● Elastomer

Elastomers are used in a wide range of products in various aspects of everyday life, thanks to their rubber-like elasticity and ease of molding similar to that of general-purpose plastics.



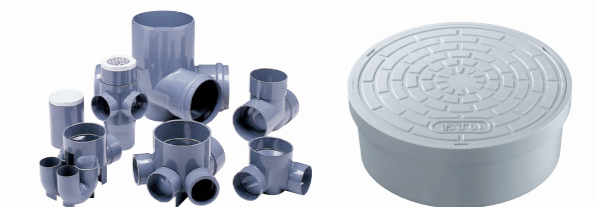
● Construction materials

Waterproofing coating materials made from acrylic rubber protect roofs and exterior walls from rainwater penetration, thus contributing to longer lifespans of buildings and total maintenance.



● Small-diameter polyvinyl chloride pipes, chambers and manhole covers

We propose piping systems effective for the drainage of every type of urban structure and contribute to the construction of infrastructure that supports our daily lives.

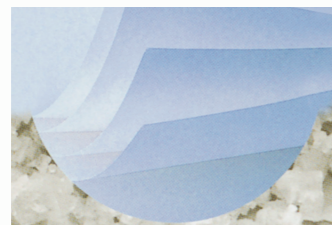


Commodity Chemicals

P32

● Caustic soda

Caustic soda is a fundamental raw material in industry used in a wide range of products such as synthetic fibers, paper, pulp and chemicals.



● Sodium hypochlorite

Used for sterilization of water, sewage, and swimming pools, our products suppress impurities such as chloric acid and bromic acid, helping provide a safe, reliable water supply.



● Acrylic monomers

Acrylic acid is a raw material for highly water-absorbent resins, polymer flocculants, etc. Acrylate esters are raw materials for tape adhesives, paints, and various other products.



● Industrial gases

We handle a wide range of industrial gases, including oxygen, nitrogen and argon, meeting the extensive needs of various industries ranging from the steel, chemical and other key industries to cutting-edge industries such as semiconductor manufacturing and medicine.



Commodity Business

Toagosei Group's Value Creation Trajectory

The Toagosei Group has been leveraging the power of chemistry to create new value that meets the needs of a rapidly changing society.

By providing products that meet the needs of the times, we cultivate solid technical capabilities and trust in our products. With these as our foundation for value creation, we continue to develop new products and technologies that meet the expectations of society and increase our corporate value.

Phase 1 (1910s~)

Development of commodity chemicals

We built our business mainly on commodity chemicals at a time when the chemicals industry was dominated by electrolysis products, which comprise an industry staple, and fertilizers for increasing food production.

Key Points to Value Creation

- Supply of products that would form the basis of postwar reconstruction
- Stable supply of basic chemical products



Nagoya Plant (historical photo)

Phase 2 (1960s~)

Development of petrochemicals

Besides electrolysis products, Toagosei developed a presence in petrochemicals, including acrylic esters, polyvinyl chloride resin, and chlorinated organic solvents.

Key Points to Value Creation

- Supply of raw materials for periods of rapid growth
- Commencement of commodity petrochemical product production



Tokushima Plant (historical photo)

Phase 3 (1970s~)

Development of functional chemicals

In order to overcome the challenges posed by the oil crises, including lackluster demand for mass-produced products, and to make the business less sensitive to economic fluctuations, Toagosei leveraged its original technology and fostered functional products, positioning them as mainstays of the business.

Key Points to Value Creation

- Expansion from commodity products to high-performance products
- Expansion overseas, beginning with the U.S.



Institute for Advanced Sciences

Phase 4

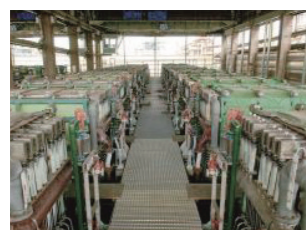
Development of product lineups forming a fourth pillar fit for the ESG/SDGs era

Key Points to Value Creation

- Expansion of high-value-added product businesses
- Creation of new business units



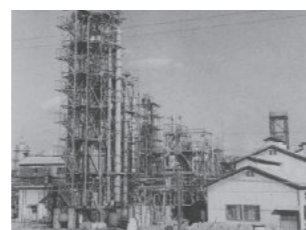
Takaoka Creation Laboratory



Electrolysis plant



Caustic soda shipment (historical photo)



Acrylic ester production facilities (historical photo)



Acrylic acid production facilities



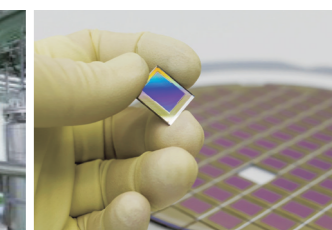
ARONIX production facilities



Aron Alpha for household use



Polymer plant for lithium-ion batteries



Chemical agents for semiconductor manufacturing

Mainstay Products

Caustic soda, hydrochloric acid, sodium hypochlorite

Mainstay Products

Methyl and ethyl esters of acrylic acid

Mainstay Products

Aron Alpha, acrylic polymer, ARONIX, inorganic antimicrobial agent

Priority fields

Mobility, medical care, semiconductor and electronic materials, cellulose nano-fibers

Message from Management

Our goal is to create a fourth pillar of business by realizing world-first products with outstandingly original and novel technologies.



Mikishi Takamura
President and Representative Director

1. 2025 Medium-Term Management Plan

The Toagosei Group has announced a major policy in our Medium-Term Management Plan, “Leap Forward to the Next 2025,” which covers the three years through 2025. It involves further investment of management resources in R&D, and capital investment to strengthen our R&D capabilities and production base. Behind this decision to place greater emphasis on R&D capabilities are the strategies implemented in the previous Medium-Term Management Plan and their results.

Boosting profits with superior product manufacturing enabled by capital investment

In the previous Medium-Term Management Plan through the fiscal year ended December 31, 2022, we invested aggressively in capital equipment based on the basic policy of expanding the high-value-added product business and strengthening our core businesses. As a result, we achieved our operating income target of 17 billion yen in 2021 ahead of schedule, although we failed to achieve our operating income target for the final year due largely to the impact of soaring raw material prices and the economic downturn. As for the net sales target, we were able to achieve it in 2022. We believe that these results, achieved in a difficult business environment, are due to the fact that our investments have increased our capacity to make superior products, which has had an immediate impact on our business performance.

Focusing on R&D to further strengthen growth potential

We plan to further strengthen and accelerate the Group’s growth potential in the 2025 Medium-Term Management Plan. In doing so, research and development will become important. The source of our strength is our ability to trace back to our raw materials, modify them, and create new performance capabilities, giving rise to materials never seen before. We have grown by creating highly functional materials for which demand is sure to increase in each era, utilizing the synthesis, polymerization, crystallization, and other technologies that we have accumulated through repeated implementation of these technologies. The source of this is research and development, and we believe that nurturing the new products that emerge from these efforts is an important process in expanding earnings.

2. Aiming to Develop Advanced and Highly Novel Products

Aiming to develop new products with priority targets

We have identified the areas of mobility, semiconductors and electronic materials, and medical care as priority targets for research and development. In the areas of mobility and semiconductor/electronic materials, we have already created products that contribute to earnings, such as functional adhesives, highly purified liquid hydrogen chloride, and polymers for lithium-ion batteries. In the 2025 Medium-Term Management Plan, we regard the development of even more highly novel products in these areas as a key priority.

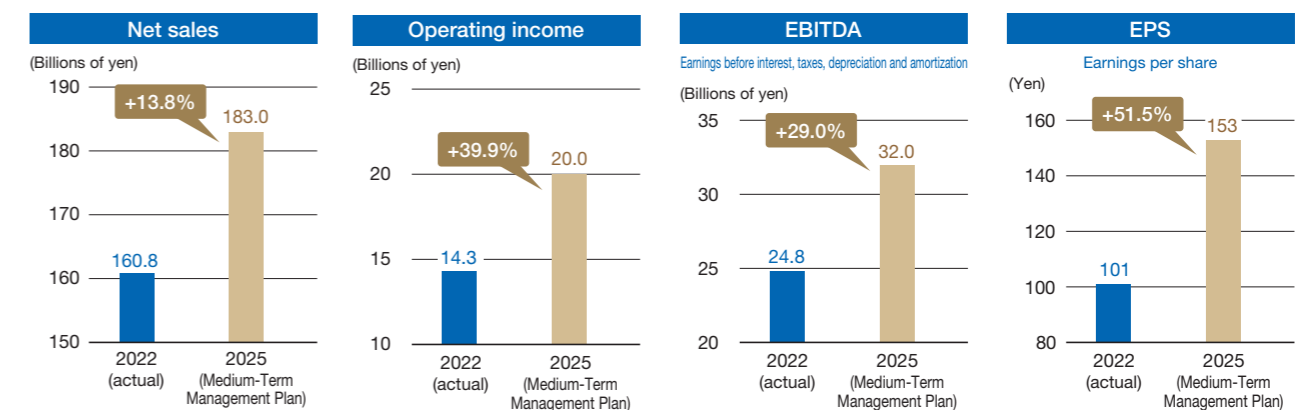
While medical care-related products are an area that we have been working on for more than a decade, we are currently conducting research and development in an area that is completely different from that of our previous products. NUCLEOLARON, a cell membrane-permeable peptide developed in 2022, has great potential as a drug delivery system (DDS) that can carry therapeutic drugs directly to genes in the cell nucleus, the source of disease, by penetrating cell and nuclear membranes, contributing to drug discovery for intractable diseases and others that are difficult to treat. Although NUCLEOLARON has not yet contributed much to profits, we anticipate that it will lead to a new pillar of our business, so we are pursuing further development.

3. Preparing a New R&D Center in the Tokyo Metropolitan Area

Getting closer to customers through development with them

For example, in the case of materials for mobility and semiconductors, our role is not to create general-purpose products that can be used anywhere, but to create products that meet unprecedented levels of performance and advanced customer requirements, which necessitates working together with our customers on development. Ideally, our researchers should be able to discuss closely with our customers and research institutes and our researchers should be able to refine their knowledge and proceed with development. Our General Center of R&D, the core base of our new technology and product development efforts, is located in Nagoya, and while this makes it easy to communicate with customers in the

2025 Medium-Term Management Plan (2023-2025)



Chubu and Kansai regions, it is somewhat distant from customers in the Tokyo metropolitan area, which has posed an issue for us. We therefore decided to establish a new research facility in the Tokyo metropolitan area, for which we have opened a preparatory office. We have built strong relationships of trust with our customers by achieving a track record of meeting their expectations, and we often receive direct requests such as, "We would be grateful for something with these particular performance characteristics." We anticipate that the new research facility will enable us to speed up joint development with our customers as well as develop new customers.

Anticipating customers' future needs

And while it is important to respond to customers' current demands in this way, it is also essential for the growth of our Group that we be able to read where their next demands lie and what we should target next. There are only a few companies in the world that can create new materials and products in technological fields that are considered cutting-edge. As a Group, we strongly believe that we should be the best at contributing to our customers' technological innovation by promoting research and development that anticipates their future needs.

4. Delivering Appealing Products

A solid view of markets around the world

The year 2022 saw a major incident, the invasion of Ukraine by Russia, as the effects of the pandemic lingered worldwide. Both of these events were unprecedented, but the impact of the war in Ukraine was a different quality, and I have the impression that it brought about a major shift in values around the world. It exposed the fragility of the rules of business established through globalization, in which business expands in countries with large populations and growing markets, and it impressed upon us the importance of fostering business in countries with liberal economies, where business can be conducted amid a sense of security.

Focusing on markets in Europe, the United States, and Southeast and South Asia

One of the basic policies put forward in the "Leap Forward to the Next 2025" Medium-Term Management Plan is to increase overseas net sales by 30% over FY2022, but it will be very important to determine which markets to expand into. We believe that developed Western countries and Southeast Asian and South Asian countries, which fundamentally share the same economic philosophy, are the markets on which we should place importance. Although the enormous market of Greater China is appealing, we must be aware that it is very difficult to anticipate its business environment. It is also important to separately consider and develop areas that are suited to production and to sales. In the 2025 Medium-Term Management Plan, we will expand our overseas bases in polymer products for automobiles, adhesives such as Aron Alpha, automotive battery materials, and materials for semiconductors such

as high-purity liquefied hydrogen chloride, while carefully considering local business operation risks. In particular, products for semiconductors need to be closely monitored from both supply and sales perspectives. Since it would hardly be possible to produce automobiles if a shortage of semiconductors were to occur, we believe that if we invest aggressively, we will have the opportunity to expand our business even further.

5. Aiming to Expand Sustainability Business

Creating a mechanism to achieve carbon neutrality

The third axis of the 2025 Medium Term Management Plan is to help realize a sustainable society. The Group has declared that it will achieve carbon neutrality, which means that we will reduce greenhouse gas (GHG) emissions to virtually zero by 2050. As a step toward this goal, we have incorporated a 35% reduction in GHG emissions in 2025 (compared to 2013) into our Medium-Term Management Plan target.

In line with the setting of these goals, we have established a new Sustainability Division. This involves some lofty aims. Activities to reduce CO₂ always entail a certain level of cost. In setting our sights on such a major goal as becoming carbon neutral, we realized that we would not be able to continue unless we created a system that not only incurred costs, but also generated added value in excess of those costs. For example, when investing in equipment that contributes to CO₂ reduction, such as biomass power generation, we will carefully examine ways to increase output and improve efficiency, and in the case of hydrogen stations, we will carefully select locations that are easy to use. Although starting with a small-scale effort, we aim to use these findings to nurture the seeds of a sustainability operation and grow it into a business by incorporating new ideas.

Taking on the carbon-free challenge in all processes from manufacturing to transportation to use

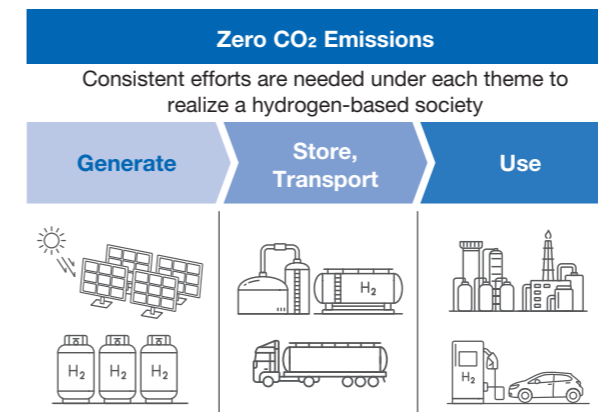
Furthermore, hydrogen stations for fuel cell vehicles, a leading example of a sustainable business, have yet to



reach the stage where they can be expected to generate positive earnings. Rather, they are currently at the stage of working toward making the supply of hydrogen fuel itself carbon-free. Although fuel cell vehicles do not emit CO₂ when running, CO₂ is emitted in the process of producing and transporting their hydrogen fuel, so they are not completely carbon-free. Our hydrogen is sent directly from the plant to the station, so there are no CO₂ emissions involved in the transportation process. Furthermore, if the electricity used at the hydrogen production stage is replaced by renewable energy, all three stages (production, transport, and use) can be accomplished, and drivers of fuel cell vehicles will be able to confidently declare that their driving emits no CO₂ at all. We are trying to bring this kind of hydrogen to society.

There are a great many chemical manufacturers in the world that are larger than our company, but our strength still lies in providing technologically advanced and qualitatively superior products, which is why we focus on research and development. We have exactly the same concept when it comes to sustainability value creation.

Initiative to achieve zero CO₂ emissions



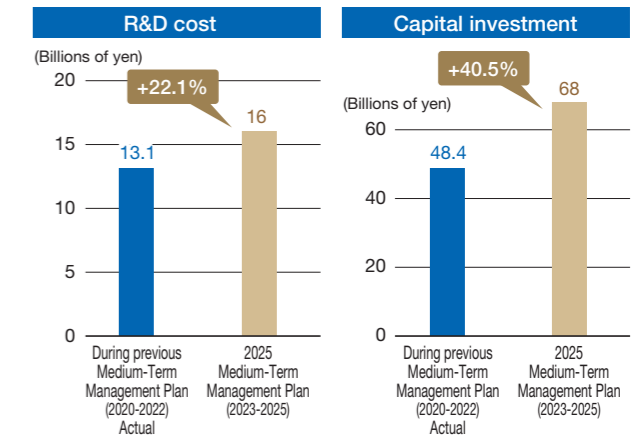
6. Toward the Creation of a Fourth Pillar Product Line

R&D investment, capital investment

We often hear the criticism that, in general, Japanese companies are inefficiently capitalized and end up only hoarding profits. However, in order for our Group, a chemical manufacturer, to continue to grow, it is first

necessary to secure funds for capital investment and R&D investment. Therefore, we plan to promote growth by increasing R&D expenses by about 22% to 16 billion yen and capital investment by about 40% to 68 billion yen in the 2025 Medium-Term Management Plan, compared to the previous plan.

2025 Medium-Term Management Plan (2023-2025)



Creating world-first products

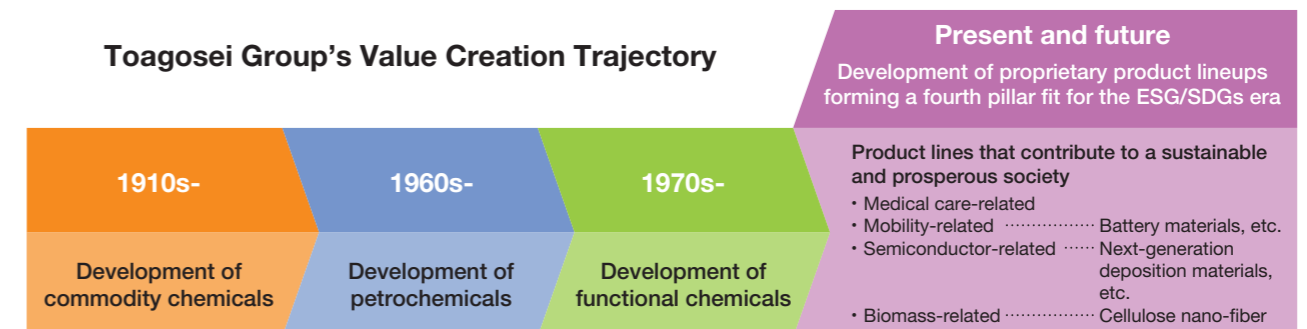
When we look back at our history since our founding, the growth investments we are currently making have the significance of creating a fourth pillar. What I would like to draw your attention to is that our Group will create technologies that are greater than ever in terms of originality, advancement and innovation, and that we will establish and develop our fourth business pillar with world-first and Japan-first products. I hope that all of our stakeholders will look forward to what we have in store.

7. Shareholder Returns

Returns that please our shareholders

We will appropriately return profits as they expand further through the growth of existing and new businesses. In the 2025 Medium-Term Management Plan, we aim to achieve a total return ratio of 80% or more, including a dividend payout ratio of 30% or more and a share buyback of about 20 billion yen. As the company grows, we are planning a shareholder return plan that will please our shareholders more than ever.

Toagosei Group's Value Creation Trajectory



Value Creation Flow



Social issues	Customers	Provide products and technologies that contribute to solving customer issues
	Society	Achieve a sustainable society

Social issues

Customers

Provide products and technologies that contribute to solving customer issues

Society

Achieve a sustainable society

INPUT

Financial Capital

Total assets
265.135 billion yen (end-2022)

Plant & equipment capital

Capital investment
22.844 billion yen (2022)

Human Capital

Number of employees
2,517 (end-2022)

Intellectual Capital

R&D cost
4.748 billion yen (2022)

Social and Relationship Capital

Group companies
21 (end-2022)

Natural capital

Annual energy consumption
(Crude oil equivalent) 189,000 kℓ (2022)

Business Activities

Medium-Term Management Plan

Leap Forward to the Next 2025 P16

Business areas

Commodity Chemicals P32

Polymer & Oligomer P34

Adhesive Material P36

Performance Chemicals P38

Plastics P40

Technology areas

Synthesis technology

Polymerization technology

Compounding technology

Particle control technology

Molecular control technology

OUTPUT

New Products and Technologies P26

We will continuously create original products and technologies by taking advantage of our Group's superior technologies. We provide new products and technologies to solve our customers' problems and contribute to the development of society.



Tokyo Technology Laboratory

Sustainable Management P44

In addition to working to reduce energy consumption by improving production efficiency, we are also working to become carbon neutral in terms of energy by adopting green energy generation.

We will also advance the development of eco-products to help our customers with their environmental challenges.



OUTCOME

Sustainable Growth of the Group

- Expansion of new and high-value-added businesses
- Strengthening of R&D capabilities while expanding technology areas
- Expansion of overseas market share



Sustainable Society

- 2050 Carbon Neutrality (Net Zero)
- Reduction of environmental impact through eco-products
- Creation of new businesses aimed at resource recycling
- Responding to a super-aging society



Special Feature 2023-2025

2025 Medium-Term Management Plan

Our 2025 Medium-Term Management Plan for Sustainable Growth "Leap Forward to the Next 2025," begins.

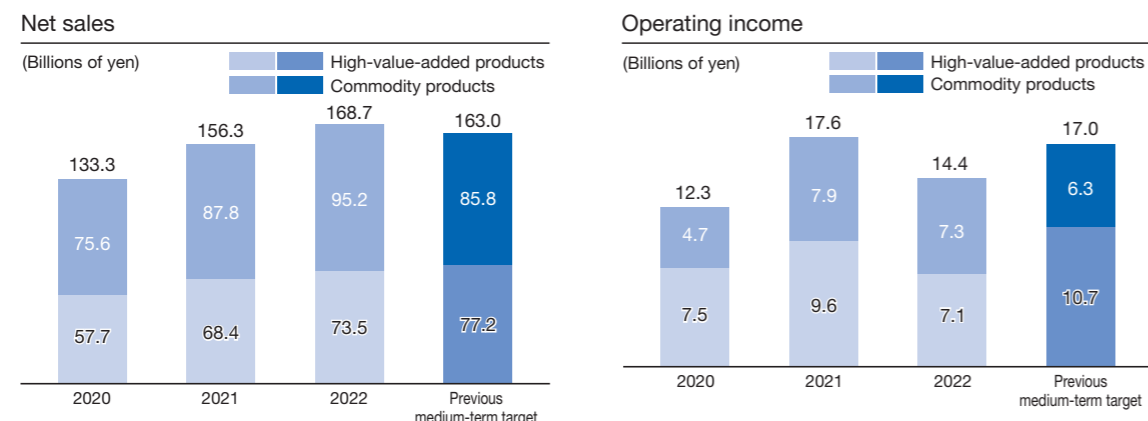
A look back on our previous Medium-Term Management Plan (2020 to 2022) "Stage up for the Future"

Numerical Targets and Results

	Targets for 2022	2022 Results
*Net sales	163.0 billion yen	168.7 billion yen
*Operating income	17.0 billion yen	14.4 billion yen
*Operating income margin	10.4%	8.6%
*EBITDA (Earnings before interest, taxes, depreciation and amortization)	27.0 billion yen	24.9 billion yen
*High-value-added product to net sales ratio	47%	44%
Capital investment (cumulative during previous midum-term plan, inspection basis)	44.0 billion yen	48.4 billion yen
*Overseas net sales	32.5 billion yen	31.4 billion yen
*Overseas net sales ratio	20%	19%
EPS (Earnings per share)	106 yen	101 yen
ROA (Return on assets)	7.0%	6.3%

*Figures are prior to application of revenue recognition accounting standards, etc.

Although most of the numerical targets of the previous medium-term plan were achieved in 2021 due to aggressive capital investment and efforts to create new businesses, operating income and other targets were not achieved in 2022, the final year of the plan, due to the impact of the economic downturn and other factors.



*Graphs show net sales and operating income prior to application of revenue recognition accounting standards, etc.

Outcomes of Key Initiatives

1 Strengthening of new business creation and R&D functions

A number of new business candidates that are expected to play a major role in the Group's future have emerged, including the development of cell membrane-permeable peptides suitable for Drug Delivery Systems (DDS), and studies on the mass production of cellulose nano-fibers.

In addition, the Takaoka Creation Laboratory and the General Center of R&D No. 2 Technology Development Laboratory were opened to strengthen R&D functions.

2 Promotion of overseas development of instant adhesives, etc.

We promoted the global expansion of our adhesive materials business by launching e-commerce of general-use instant adhesives in China and expanding our product lineup by launching tapes and UV-curing instant adhesives in the United States.

We also strengthened the overseas production system of UV-curing resins by making Toagosei (Zhangjiagang) New Technology Co., Ltd. a wholly owned subsidiary.

3 Expansion of competitive edge and strengthening of functions through digital transformation (DX)

We are promoting DX initiatives in various areas including production and sales activities. In the research field in particular, the use of Materials Informatics (MI) has yielded useful results in several R&D themes, and we have achieved success in the development of items including new adhesives.

4 Securing and fostering human resources who will be responsible for growth

We promoted initiatives to support overseas development, including educational programs for local staff of overseas Group companies to instill our Corporate Philosophy and Code of Conduct.

5 Promotion of sustainable management

Toagosei opened Toagosei Hydrogen Station Tokushima, Japan's first station of its kind that is directly linked to the production and supply of hydrogen. Located on a site adjacent to the Tokushima Plant that produces the hydrogen, it has begun supplying hydrogen to fuel cell vehicles and fuel cell buses.

Issues for the Next Medium-Term Management Plan

1 Expansion of high-value-added business

We will improve earnings from high-value-added products such as purified liquefied hydrogen chloride, highly functional acrylic polymers, and functional adhesives, for which we invested in increasing production capacity in the previous Medium-Term Management Plan.

2 New business creation

Early on, we will turn cell membrane-permeable peptides and cellulose nano-fibers, which were developed in the previous medium-term plan, into actual products and establish them as new businesses that will become pillars of our company.

Special Feature 2023-2025 Medium-Term Management Plan for 2025

Aims and Basic Policies of the 2025 Medium-Term Management Plan (2023-2025)

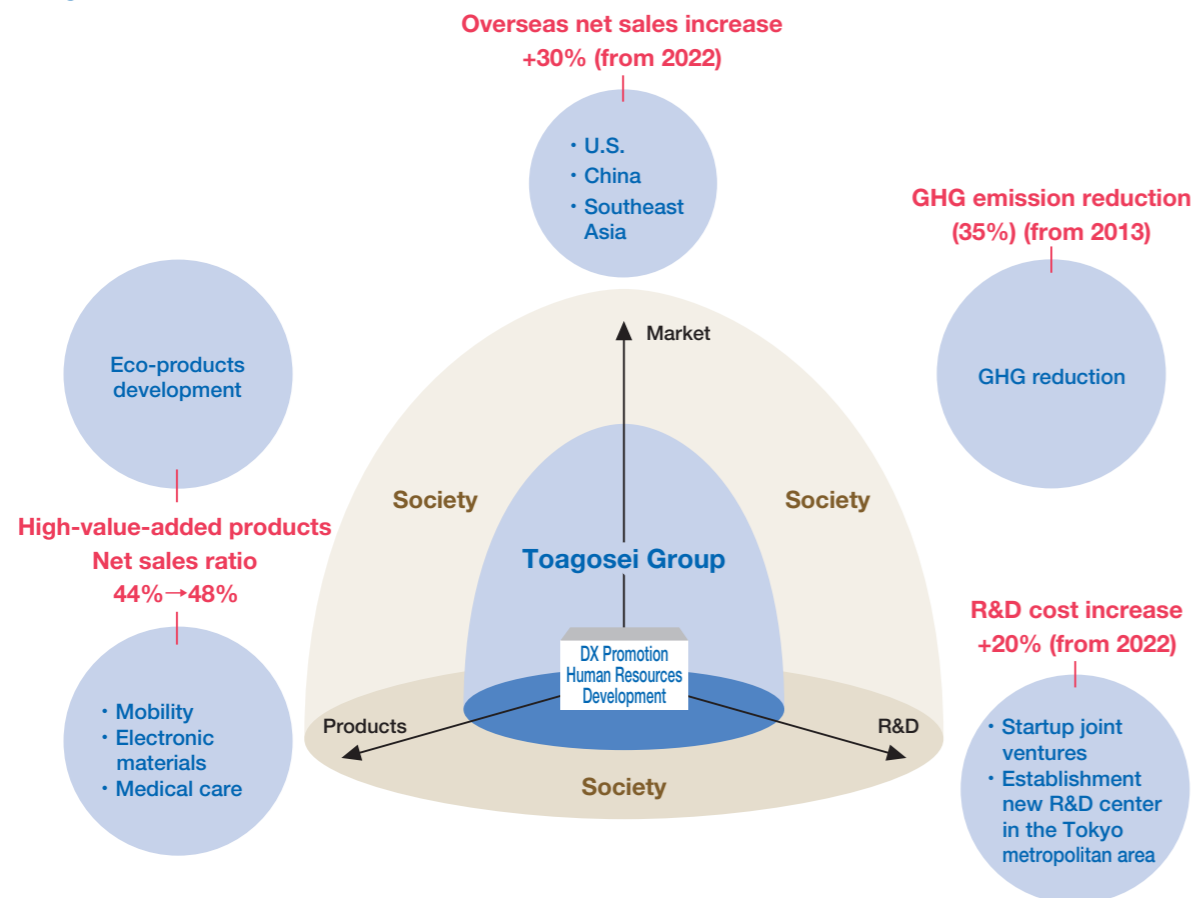
Aims

Leap Forward to the Next 2025

We will accelerate the growth of our Group through the creation of new businesses and the expansion of high-value-added businesses that produced results in the previous Medium-Term Management Plan.

In the 2025 Medium-Term Management Plan, we aim to achieve growth by expanding the scope of the Group's business areas in terms of markets, products, and R&D, with the promotion of digital transformation (DX) and human resource development at the core of the plan. We will also contribute to the realization of a sustainable society through the reduction of greenhouse gas emissions and the development of eco-products.

A Diagram of Our Aims



Basic Policies and Key Initiatives

Basic Policies

Strengthening new product/technology development capabilities

By further strengthening our R&D capabilities, we will continuously create competitive and creative products and technologies in the priority fields of mobility, electronic materials, and medical care, and actualize new businesses that are to be the future of our Group.

Overseas net sales expansion

We will expand our share of high-value-added products by developing production and sales activities in markets expected to grow worldwide.

Helping achieve a sustainable society

In addition to focusing on reducing greenhouse gas (GHG) emissions within our Group, we will contribute to the realization of a sustainable society by providing products and technologies that contribute to solving environmental issues faced by society. In reducing GHG emissions, we will steadily implement detailed initiatives.

Key initiatives

1 Accelerating expansion in Japan and overseas by aggressively investing management resources in growth businesses

We will balance our allocation of management resources to existing businesses that need to be strengthened and to new business operations. While continuing our efforts to expand market share under the previous Medium-Term Management Plan, we will rapidly launch and produce results with cellulose nano-fiber and medical care products, which will play a key role in the future. Overseas, we will expand our business structure for materials for the mobility, semiconductor, battery, and high-speed communication fields in markets with strong demand, mainly in the United States, China, and Southeast Asia. We will also accelerate the overseas development of high-value-added products centered on the polymer/oligomer, adhesive materials, and advanced materials.

2 Strengthening R&D capabilities

To accelerate business expansion and the development of new businesses, we will actively invest management resources in strengthening our R&D capabilities. As part of this effort, we will actively promote collaboration with startup companies. We will also establish a research base in the Tokyo metropolitan area to speed up development by conducting research close to and together with our customers.

3 Spreading and expanding digital transformation (DX) promotion

We will promote DX, utilize materials informatics (MI) and molecular simulations, convert to smart factories, utilize AI, and develop digital human resources to strengthen both the Group's competitiveness and its business structure.

4 Securing and developing human resources with foresight

We will implement a personnel system intended to increase motivation to work, while actively recruiting specialized human resources. Furthermore, we will secure and develop human resources to meet the needs of an increasingly diverse society by appointing overseas human resources and formulating and implementing a reskilling plan.

5 Promoting sustainable management

In order to realize the GHG emission reduction roadmap aiming for carbon neutrality in 2050, we will work to reduce energy consumption by improving production efficiency and also implement measures such as the introduction of green energy generation in procurement. We will also advance the development of eco-products as we focus on providing products and technologies that contribute to solving our customers' environmental issues.

Toagosei Group Materialities

In parallel with the formulation of our 2025 Medium-Term Management Plan, the Group has developed a set of materialities (key priorities) based on our corporate philosophy, which are to be addressed by management.

From the perspective of both the Group's sustainable growth and contribution to society, we have organized these materialities into those that are business-related and those that are business infrastructure-related, and set KPIs for each.

Specifying materialities

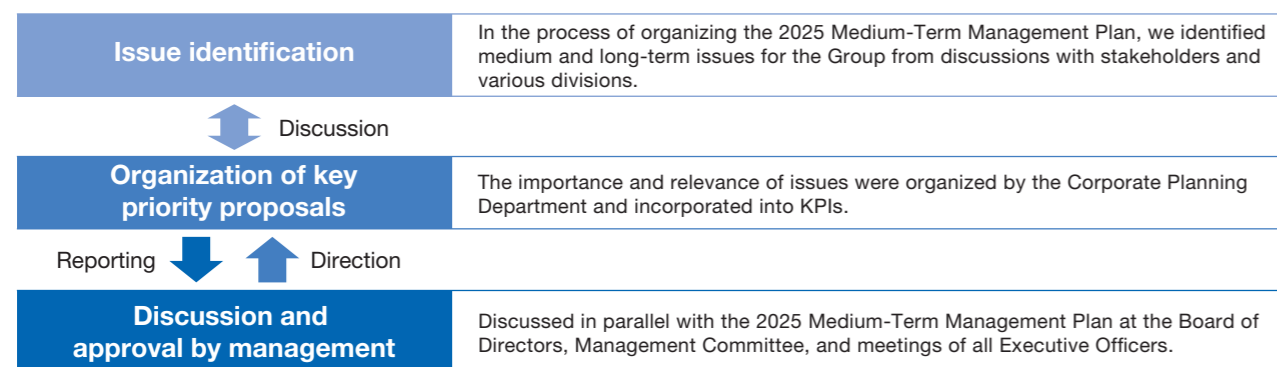
Although we have been discussing and working from various perspectives regarding the sustainable growth of our Group and our relationship with society, we have not yet organized and clearly stated the overall picture as a list of materialities.

In considering the Group's contribution to society through compiling the 2025 Medium-Term Management Plan, we have identified and produced larger materialities in addition to the conventional KPIs that have served as key financial indicators in past Medium-Term Management Plans.

We have identified six materialities, based on both issues that will lead to the medium- to long-term growth of our Group and issues that meet the expectations of our various stakeholders.

The establishment of materialities and their KPIs was discussed multiple times by the Board of Directors, the Management Committee, and meetings of all Executive Officers. It was approved and announced as incorporated into the 2025 Medium-Term Management Plan at the January 2023 meeting of the Board of Directors.

Steps to identifying materialities



Business-related materialities

KPI	2022 Results	Targets for 2025
Achieving a greater presence as a company		
Net sales	160.8 billion yen	183.0 billion yen
Operating income [Operating income to net sales ratio]	14.3 billion yen [8.9%]	20.0 billion yen [11.0%]
EBITDA*	24.8 billion yen	32.0 billion yen
Capital investment (cumulative) inspection basis	48.4 billion yen (2020-2022)	68.0 billion yen (2023-2025)
Expansion of high-value-added products		
High-value-added product to net sales ratio	44%	48%
R&D expenses (+20% from 2022)	4.7 billion yen	5.6 billion yen
Expansion of overseas market share		
Overseas net sales (+30% from 2022)	31.0 billion yen	40.5 billion yen

*EBITDA (earnings before interest, taxes, depreciation and amortization)

Business infrastructure-related materialities

KPI	2022 Results	Targets for 2025
Helping achieve a sustainable society		
GHG emission reduction (from 2013)	(24%)	(35%)
Promotion and development of diverse human resources		
Percentage of women in managerial positions	3.4%	5.0%
Key management indicators		
Earnings per share (EPS)	101 yen	153 yen
ROA (ratio of ordinary profit to total assets)	6.3%	8.2%
ROE (ratio of net income to shareholders' equity)	6.1%	7.3%

Financial Capital Strategy

Investment plan

Under the 2025 Medium-Term Management Plan, we will further invest management resources in capital investment and R&D to strengthen the production base for high-value-added business operations and R&D capabilities.

> About capital investment

During the period of the previous Medium-Term Management Plan, from 2020 to 2022, we made aggressive capital investments to expand high-value-added products.

Capital expenditures totaled 48.4 billion yen, compared to a three-year target of 44.0 billion yen, due to the expansion of facilities for high-purity liquefied hydrogen chloride, polymers for lithium-ion batteries and functional adhesives, among others. Although these investments are currently increasing the burden of depreciation and amortization expenses, we regard this as an advance investment in a business that we expect to grow profitably in the future.

During the 2025 Medium-Term Management Plan, we are arranging for 68 billion yen in capital investment, and for allocation of management resources to the actualization of new businesses and to strengthening those in need of reinforcement.

> About investment in R&D

In the R&D activities of the previous Medium-Term Management Plan, we promoted the development of NUCLEOLARON, a cell membrane-permeable peptide suitable for use in Drug Delivery Systems (DDS), and the commercialization of cellulose nano-fibers as means of creating new businesses. We also opened the Takaoka Creation Laboratory at the Takaoka Plant to strengthen R&D capabilities. Since 2020, we have increased our R&D investment, which amounted to 13.1 billion yen over the three-year period. During the 2025 Medium-Term Management Plan, we are arranging to invest 16 billion yen to accelerate business expansion and to develop new businesses. In addition to actively collaborating with startup enterprises, we plan to establish a research center in the Tokyo metropolitan area to accelerate development close to and together with our customers.

Capital efficiency improvement

> Reduction of cross-shareholdings

To improve capital efficiency, we are in the process of disposing of non-operating assets. In particular, our Basic Policy on Corporate Governance stipulates that the amount of shares owned through cross-shareholding should be around 10% of the consolidated net assets on the balance sheet.

We also review the effectiveness of our holdings annually, taking into consideration whether the benefits and risks associated with maintaining and strengthening

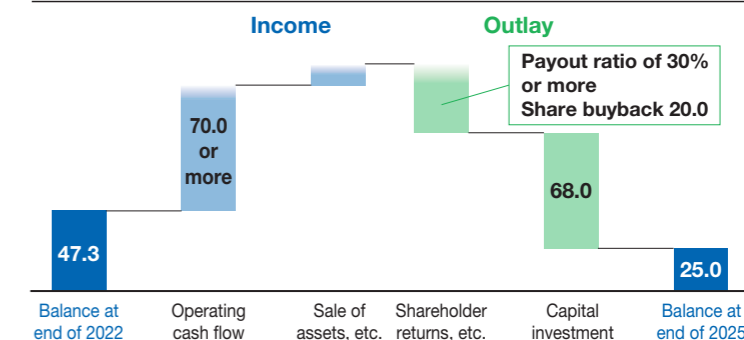
the overall relationship with the relevant counterparty are commensurate with the cost of capital. On that basis, we are proceeding with the sale of shares held that are not deemed to contribute to the enhancement of corporate value over the medium to long-term.

Aside from investments made with strategic intent, such as investments in startup companies, we are actively disposing of investments whose rationale for holding them has faded.

Cash Allocation

As a result of aggressive capital investment and implementation of capital policies, the net cash balance, or the sum of cash, deposits and short-term securities holdings minus interest-bearing debt, is expected to be around 25 billion yen at the end of 2025. While securing the necessary cash reserves, we will build a business foundation that is unshakable in the face of drastic changes in the business environment through aggressive investment, thereby enhancing our corporate value over the medium to long-term.

Forecast Net Cash Balance (billions of yen)



Message from the Vice President

Susumu Miho

Vice President and
Representative Director
General Manager, Corporate
Strategy Division



We will meet society's expectations by developing and launching a series of products that are eagerly awaited by growing markets. The growth of the Toagosei Group is an extension on this growth.

Experience gained in various divisions of the Group's business, including engineering, research, business units, and overseas operations

Since joining the company, I have experienced work in many departments, including the Engineering Department, a research lab, overseas affiliates, plants, business units and sales. During my time in the Engineering Department, I was mainly involved in technical development and plant design for polymer development products, and was involved in the construction of plant facilities for flocculants and thickeners at the Sakaide Plant, ATBS at the Kawasaki Plant, and acrylic monomers at the Nagoya Plant. I was then transferred to the Productive Technology Laboratory, which was established in 1999, and what I remember most was the development of the UV polymerization process. The research to increase productivity focused on the serialization of polymer facilities, including the introduction of UV polymerization

technology for water absorbent resins and flocculants. The common practice was to return to the Engineering Department after the development work on a given theme. But I so enjoyed the facilities I had researched and developed and was so happy about creating products that I stayed on at the laboratory for a while to find a new theme on my own and continue my research. I worked at the Laboratory for about eight years and was then assigned to head a new company in China. Despite being unable to speak the language, and working in a different culture, I had to revamp the factory, which was in the doldrums at the time, and turn a profit. This posed a succession of difficulties with severe cash-flow problems. So, I visited manufacturers throughout China on my own in order to procure good, inexpensive raw materials. I was posted there for about 5 years during a very active time in China, with the Beijing Olympics and Shanghai Expo being held. On my days off, I visited World Heritage sites here and there to refresh myself, while also gaining valuable

experience in corporate management, albeit small in scale, which was quite different from what I had been used to.

During the first half of my career, my focus was on production technology, but after my assignment to China, my emphasis shifted to business operations. After returning to Japan, I worked in the Acrylic Products Department to review the competence for offering, product mix, and profitability of the Singapore subsidiary, and then in the Polymer & Oligomer Division to commercialize binders for lithium-ion batteries used in EVs. Thereafter, I served as General Manager of the Technology and Production Administrative Division and General Manager of the Research & Development Administrative Division. In 2021, I became General Manager of the Supply Chain Management Division, where I was in charge of business units and sales. I see it as my role to leverage these experiences to maximize corporate value.

What I felt when I went abroad—Our strength is by no means inferior to others

In each position, I have gained new experiences and discovered things that I want to do. In particular, my values changed dramatically as a result of my overseas assignment. Until then, I had been surrounded by Toagosei employees, but overseas I became very active in socializing not only with non-Japanese but also with Japanese people from other companies. What I felt there was that our company's strength is in no way inferior to other companies. Of course, there are plenty of companies that are larger than ours, but I realized that as long as I am confident in my business, I can be on an equal footing with other companies.

On the other hand, I believe that our Group still has issues in terms of its ability to understand overseas markets. I believe that it will be most important for future business growth for each employee, regardless of position or job title, to go out with a market-in perspective, interact with various people, and gather information.

Having just been named vice president, I would like to make us a company where regardless of position or rank, senior members can act on their own, and junior members can also freely discover what they want to do. By achieving this, Toagosei will become a company with even greater growth potential.

Strengthening product and business capabilities in response to industry and social trends under the 2025 Medium-Term Management Plan

The 2025 Medium-Term Management Plan, "Leap Forward to the Next 2025," which covers the three years through 2025, aims to realize the further strengthening of our R&D capabilities and the reinforcement of our production base. Given the extremely rapid movement of various industries and the social environment, it is very important to derive research themes and orient products in line with current trends. Our Group has enormous strengths in electronic materials, especially in high-purity chemicals, structural control of polymers, and adhesives, and we

believe that the most important measure in this Medium-Term Management Plan will be to use these strengths to strengthen our product and business capabilities in response to trends.

Another thing we should focus on in the 2025 Medium-Term Management Plan is overseas business development. We have therefore set a goal of increasing overseas net sales by 30%. Until now, we have mainly developed general-purpose products, but to achieve this lofty goal, we need to make a global statement with superior products with high-value-added in the global market. We plan to expand our production and sales system to provide products related to the mobility field, semiconductors and electronic materials to markets with strong demand in the United States, China and Southeast Asia.



Along with this business development, it is also necessary to strengthen our human resources. In parallel with securing new human resources, we will also focus on increasing the satisfaction and engagement of our enrolled employees and developing their capabilities. In overseas offices, individual employees have more authority and are given more management opportunities than in Japan. As mentioned earlier, there will also be more relationships with other companies, networking opportunities, job satisfaction, and occasion to change one's mind about the company. I would like as many of our employees as possible to have this kind of experience.

We will also promote the appointment of overseas human resources. In addition to actively appointing overseas personnel to management positions, we intend to increase the number of personnel, especially in marketing, where local human resources can make a significant impact.

I believe that the growth of our Group will be an extension on this as we develop a succession of products that meet the expectations of the growing countries, growing markets, and growing companies that eagerly await them. If we give up on this challenge, there will be no future for us, so I intend for us to take on new challenges.

R&D Intellectual Property Strategy

R&D Strategy Dialogue

We aim to be an R&D Group that leverages our cumulative strengths to create original and innovative technologies in rapid succession.

Strengthening R&D capabilities is a key measure under the “Leap Forward to the Next 2025,” Medium-Term Management Plan. Tetsuhiko Yoshida, Research Manager of the Institute for Advanced Sciences and General Center of R&D leader Michihiro Kaai discussed their central roles in these efforts.

To create technologies in rapid succession that cannot be imitated by others, we are moving toward an organizational culture that encourages more challenges

Yoshida New scientific discoveries are always required to develop original and unprecedented products, and it is the mission of the Institute for Advanced Sciences to conduct basic research that leads to the development of new products from a medium- to long-term perspective. Under General Manager Kaai's leadership, the General Center of R&D conducts research related to Toagosei's products.

Kaai Our Group has built solid technologies in its five core businesses of commodity chemical products, polymer and oligomer, adhesive material, high-performance materials and resin processed products. The quality of our researchers is high, and these businesses comprise our strengths. On the other hand, they are also conservative and lack the ability to venture out beyond their protected territories, or to boldly take on new challenges.

Yoshida Indeed. In our Group, some people may feel an implicit restraint or preconceived notion that taking on new research areas means trouble. As our president often stresses, it is crucial to pursue essential issues in order to conduct cutting-edge, original research, so we would like to break out of our shell and engage more aggressively in development, for example by promoting collaboration with overseas universities.

Kaai Yes, we are mainly a materials company, but we must develop materials in anticipation of what our customers and the world will demand next. Among the product Group that are now considered high-value-added, there are some products whose value has already begun to decline or for which other companies are catching up.

We will not be able to compete if we remain satisfied with our current products and technologies, especially with the rapid pace at which foreign companies are catching up. What is important here is technology that other companies cannot easily imitate, but it is not easy to create such technology on a sustained basis. Even if we conduct a large number of challenging studies, not all of them are successful; in fact, many of them end in failure. However, it is important to create a culture that is not timid because of failure, but rather one that allows people to immediately move on to the next challenge again. I want to foster an attitude among our researchers that it is OK to take on more and more challenges by utilizing the point-based evaluation system for setting challenge goals, which we introduced in 2022.

Contribute to innovation in various fields such as mobility, semiconductor and electronic materials, and medical care with innovative materials

Yoshida There is a saying found in the history of Song China, rendered in Japanese as “Ware yori inishie wo nasu,” which means to make history by venturing on one's own into unprecedented fields of endeavor. It is in this spirit that we are currently focusing our efforts in the field of medical drug discovery.

Kaai The Center is already working on commercializing medical materials, and what we are working on now at the Institute for Advanced Sciences is the commercialization of DDS*1 using a newly developed cell Penetrating peptide, NUCLEOLARON, for drug discovery.

Yoshida Yes. Not only can it deliver drugs to the affected area of the body, but it can also carry them into the cells of the affected area, making it possible, for example, to more effectively deliver anticancer drugs or therapeutic agents to brain cells. Although there are still many points to be verified, we certainly intend to develop it into a new product line, one of our “fourth pillar” candidates.

Kaai The General Center of R&D concentrates its R&D resources in growth areas such as mobility, semiconductors and electronic materials. For example, in the area of mobility, battery materials are a lifeline of

*1 A drug delivery system (DDS) is a drug delivery technology that exerts quantitative, spatial and temporal control in administering a drug to the human body, and delivers it to the required location in the body as targeted. This technology is essential not only for current drug therapies, but also for regenerative medicine and gene therapy, which are expected to develop rapidly in the future.

electric vehicles. Battery manufacturers are competing to increase battery capacity with less volume and weight and to make batteries last longer. We supply binder materials that are extremely important for increasing battery capacity sustainability. As lithium enters the active material of the electrode, the active material swells significantly, and conversely, as it leaves, it shrinks. Repeated charging and discharging therefore causes the active material to peel off from the electrode, reducing battery capacity. The binder material that connects the electrode and active material inhibits this exfoliation. We are working to further improve the performance of this binder material. Adhesives also play a major role in batteries. Batteries are made by stacking dozens to hundreds of single cells, each consisting of an anode and a cathode, and we have developed adhesives and cell sealing materials for these cells in cooperation with automobile manufacturers to achieve a solid level of quality. This is also something we are very excited about. There is no doubt that demand for electric vehicles will grow in the future. I am confident that our materials will continue to contribute to improved performance of electric vehicles.

Aiming to speed up research and development by expanding the system as well as cultivating and polishing human resources

Kaai Under the 2025 Medium-Term Management Plan starting in 2023, we are working to strengthen our research and development system. One of the projects that we have already started is the development of a new R&D base in the Tokyo metropolitan area. I also serve as the manager of the preparatory office for the establishment of the institute with Kawasaki City as a candidate site.

As I mentioned earlier, in addition to product development for existing businesses, the Center also conducts R&D together on new businesses such as next-generation battery materials and cellulose nano-fibers, so we wanted to move the new business component to a separate location. We have a plan to deepen cooperation with academia, venture companies, and startup companies that are clustered in the Tokyo metropolitan area, as well as with the Institute for Advanced Sciences in Tsukuba City.

Yet another of our aims is to strengthen existing businesses. We would like to place a unit at the new location, tasked with picking up on R&D themes from existing businesses for model case development. Since our sales activities are based on bringing a solid grounding in technical information to discussions with customers, I would like to create a team that integrates sales and R&D members, strengthening the system to promote development together with customers. And by doing so, we aim to speed up the cycle of creating high-value-added products.

I also believe that development in Japan alone is no longer sufficient. I want to encourage our members to go abroad more and more, leveraging the geographical advantage of Haneda Airport, which is located near the proposed institute site.

Yoshida Starting in 2023, the Institute for Advanced

Sciences will strengthen its research collaboration system with universities and other research and educational institutions, and has established a “Signal Peptidome Research” social cooperation course*2 in the Graduate School of Agricultural and Life Sciences within the Faculty of Agriculture at the University of Tokyo. Our research sites for this course are located at the University of Tokyo and at the Institute for Advanced Sciences. It has attracted attention from various research institutions in Europe and the United States, and collaborative projects with universities in Europe and the United States are beginning.

I have high expectations for the results of our research here, and I also hope that by providing a place for this kind of advanced research, we can attract good human resources who are interested in signal peptides to join our company in the future.

Kaai That's right. The General Center of R&D has also conducted quite a lot of joint research over the past few years, and we would like to encourage those who are interested in our research to visit our laboratories and offices, which will lead to opportunities to attract promising human resources.

Now that digital transformation (DX) is becoming essential to our research activities, we are also focusing on training data scientists and people who are strong in computational chemistry. We are planning to train our current researchers and at the same time hire people with expertise from outside.

It is still people who create superior technology. I would like to promote the strengthening of R&D capabilities, which I view as synonymous with human resource development.

Yoshida As I mentioned earlier, the most important thing in conducting original research is to be willing to boldly take on essential and difficult challenges. I would like to develop human resources with such a mindset more than ever.

*2 The Institute for Advanced Sciences of Toagosei Co., Ltd. and the Graduate School of Agricultural and Life Sciences of the University of Tokyo have established a social collaboration course in signal peptidome research within the university's Graduate School of Agricultural and Life Sciences to elucidate essential aspects of biological phenomena such as biological evolution and cellular differentiation, and have begun joint research.

A signal peptide is a short peptide sequence in a protein molecule that functions to direct the protein to pass through the cell membrane and to transport the protein. Furthermore, signal peptides may possess unknown functions that are fundamental to life phenomena. The aim of this course is to comprehensively analyze the functions of signal peptides and to elucidate their unknown functions in order to create therapeutic agents for cancer, nervous system diseases, infectious diseases, and rare diseases.



Tetsuhiko Yoshida
Fellow
Research Manager
of the Institute for
Advanced Sciences



Michihiro Kaai
Fellow
General Manager,
General Center of R&D

Special Feature New Products Development Division

Expansion of high-value-added products

and creation of fourth pillar

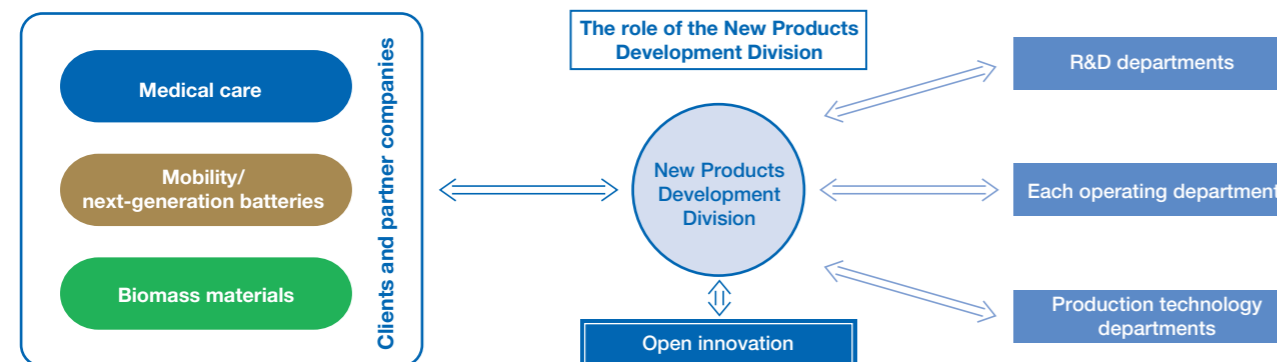


The mission of the New Products Development Division is to create the fourth and fifth pillars of business by identifying the ever-changing social structure and providing solutions to the challenges faced by customers. In particular, we are focusing on three key areas: medical care, mobility, and biomass materials, and are actively promoting the development of new products that take advantage of our philosophy of linking “tangible things,” “intangible things,” and “people,” as well as our core technologies of molecular design, compounding, and analysis.

The Division places the highest priority on contributing to a sustainable society through a thorough understanding of the customer’s perspective. To this end, we pursue groundbreaking innovations in close collaboration among our R&D units, each of our business units, and our production technology departments. We also proactively utilize open innovation from startups and other companies as external resources, aiming to quickly and effectively resolve issues from a broad range of perspectives.



Hideo Matsuzaki
Executive Officer
General Manager, New Products Development Division



CASE 2 | Contributing to carbon neutrality in the mobility sector

Development of highly functional adhesives for fuel cell vehicles and other next-generation battery-powered vehicles

In the mobility field, we are developing high-performance adhesives for next-generation battery-powered vehicles, which are becoming increasingly popular in efforts to achieve carbon neutrality.

In 2020, we launched a high-performance adhesive material with both adhesive and sealing properties for fuel cell vehicles, and in 2021, it was being used in the bipolar nickel-hydrogen batteries of the Toyota Aqua. The number of vehicles equipped with the system is steadily expanding, including the Toyota Crown and LEXUS RX.

We will promote development targeting next-generation batteries and motors, aiming for sales of several billion yen within a few years.



(Source: Toyota Motor Corporation)

For more information on functional adhesives, please also see the Adhesive Material Business page (P36-37).

CASE 1 | Taking on the challenge of medical care issues through new materials development

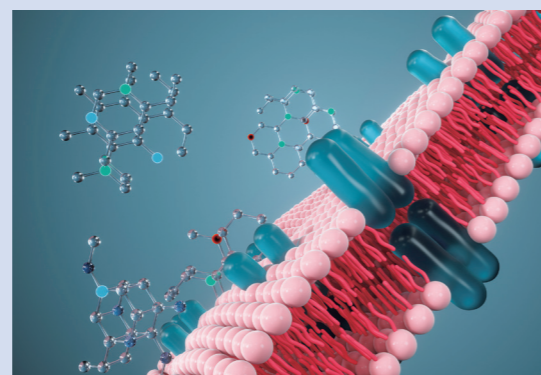
Development of new medical devices and pharmaceutical intermediates

Our goal is to create competitive original products with new materials that leverage our company’s technology, and to commercialize them in the medical device and pharmaceutical fields.

In the medical device field, we plan to market a hemostatic agent based on a unique concept using hydrogel as one of the new products following medical-use Aron Alpha in 2023 and beyond. In addition, we are strengthening our development platform in areas that feature high synergy with our company through joint development with academia and capital alliances with several startup companies to seek out “seeds and needs.”

In the pharmaceutical field, we aim to create innovative new drugs utilizing the Cell Penetrating Peptide “NUCLEOLARON” developed by our Institute for Advanced Sciences. NUCLEOLARON is a drug delivery system that not only enables drug

delivery to organs that are difficult to reach with conventional drugs, but also contributes to reducing the amount of drugs used, thereby improving the quality of life (QOL) of patients.



Visual representation of cell membranes and permeable peptides

CASE 3 | Contributing to carbon neutrality in biomass material

Cellulose nano-fiber development

In the biomass materials field, we are aiming for social implementation of cellulose nano-fibers derived from inedible cellulose as products that contribute to carbon neutrality.

Developed by our company, AronFibro is an oxidized cellulose that can be broken down to a single nanometer with little energy, overcoming the problem of the enormous energy consumption required by conventional technologies in the breakdown process of cellulose fibers. In addition to being able to produce water dispersions with low viscosity, this material is being considered in a wide range of fields, including resins and coatings, as a material that can solve the need to reduce carbon footprint.

This product is scheduled to go on sale in 2023.



AronFibro

R&D Supporting the Growth Strategy

Basic Policies

The Toagosei Group's basic policies on research and development for 2023 are as follows:

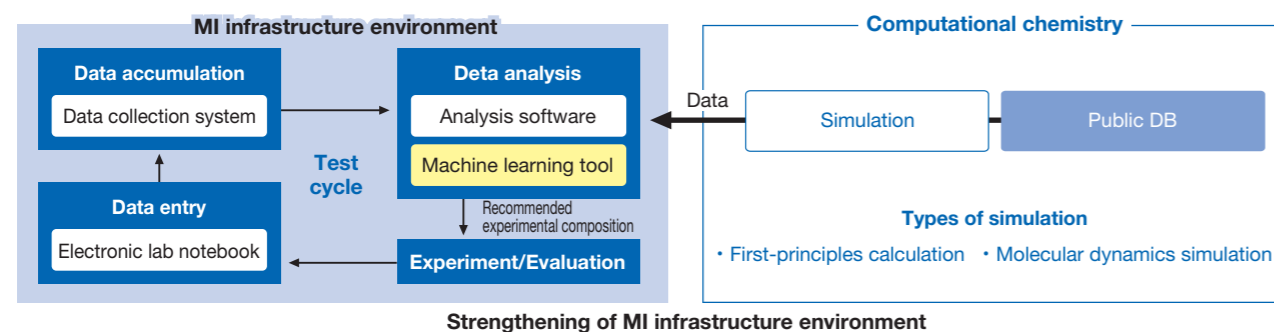
- 1 Establishment of a new R&D center in the Tokyo metropolitan area
- 2 Development of cell penetrating peptides
- 3 Strengthening of R&D infrastructure
- 4 Strengthening of technological development in overseas business development

On the research and technology development side, Toagosei endeavors to apply its technical core competences in new areas, conducting exploratory research to identify promising new technologies and functions and product development in areas where Toagosei excels in close cooperation with customers.

Strategy

We will actively invest resources in growing field that can contribute to the SDGs, and promote the development of processing and evaluation technologies that meet customer requirements in short period. We will continue to take on the challenge for achievement of carbon neutrality, especially in areas such as automobiles, and aim to develop innovative materials in the field of battery materials and other areas. At the same time, we are improving our evaluation capabilities and promoting development efficiency.

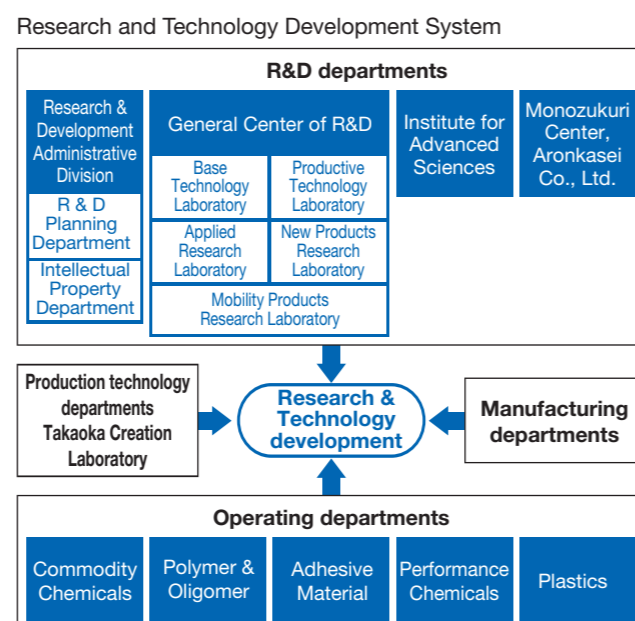
In addition, we completed the construction of an infrastructure environment for Materials Informatics (MI) in 2021. The use of this technology in actual development is beginning to produce results. As we move forward, we will accelerate advanced R&D and improve development efficiency. In addition, we will promote the use of computational chemistry, which provide publicly available materials informations, MI and computational chemistry help materials researches.



Research and Technology Development System

Our Group aims to benefit society while ensuring the sustainable group development by supplying a wide range of useful, appealing chemical products. To accelerate product development in existing areas and hasten the development of new products in areas with growth potential, the General Center of R&D has organized a management system so all R&D activities from basic and applied research to product development and production technology development are fully integrated, with research personnel deployed flexibly on key projects to maximize R&D efficiency. In January 2019, the Mobility Products Research Laboratory was established within the General Center of R&D to facilitate development of mobility-related products. Moving forward, we will continue to strengthen our R&D organizational structure.

In addition, we will open an R&D center in Kawasaki in order to expand opportunities for collaborative creation with customers in the Tokyo metropolitan area to increase new product lines and new business areas.



R&D Bases and Initiatives

1 General Center of R&D

The Center functions as a core base for the development of the promising technologies and high-value-added products that will underpin the Toagosei Group's future. It consists of five laboratories: the Base Technology Laboratory, the Applied Research Laboratory, the New Products Research Laboratory, the Productive Technology Laboratory and the Mobility Products Research Laboratory. Also, at the Technology Development Laboratory II, we are advancing research and technology development aimed at acquiring higher-order processing technologies.

2 Institute for Advanced Sciences

The mission of the Institute for Advanced Sciences is to create new business from a mid- to long-term perspective. We are promoting the early commercialization of cell penetrating peptides, which are expected to be used as Drug Delivery Systems. Furthermore, the Institute actively conducts activities from research to applied study in a broad range of bioinformatics-related technology using functional peptides via partnership programs with the Center for iPS Cell Research and Application at Kyoto University and with the Graduate School of Agricultural and Life Sciences at the University of Tokyo.

3 Takaoka Creation Laboratory

The Takaoka Creation Laboratory was established at the Takaoka Plant, the principal base for the Group's adhesive materials business, to strengthen and accelerate the development function for various adhesives, including instant adhesives.

4 Monozukuri Center, Aronkasei Co., Ltd.

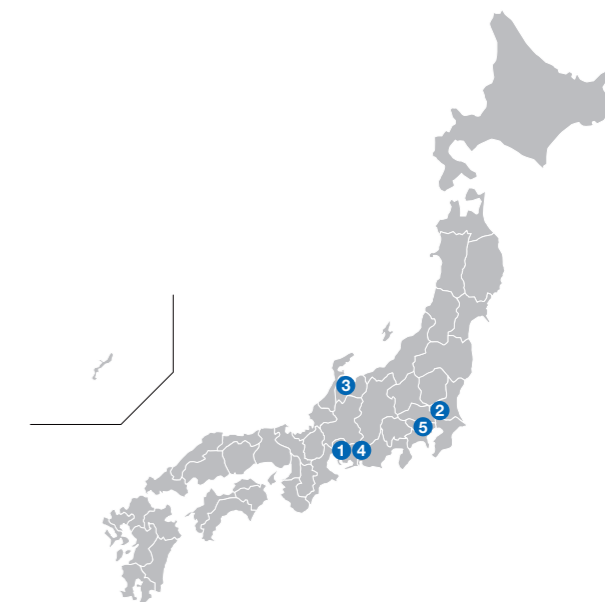
Aronkasei utilizes its Monozukuri Center to strengthen manufacturing capabilities as a proposal-driven enterprise and for business process reengineering.

In addition to developing piping equipment based on resin processing technology and products related to nursing care and welfare, we are also working on the development of new molding and processing technologies

such as elastomer compounds in collaboration with the General Center of R&D.

5 Tokyo Technology Laboratory

Taking advantage of its convenient location (next to our Head Office), the facility is used for testing in the presence of customers and for evaluation and analysis of raw materials received from customers so that we can improve customer satisfaction through rapid testing response.



- | | |
|-----------------------------------|--|
| 1 General Center of R&D | 4 Monozukuri Center, Aronkasei Co., Ltd. |
| 2 Institute for Advanced Sciences | 5 Tokyo Technology Laboratory |
| 3 Takaoka Creation Laboratory | |

R&D Human Resources Development

We actively promote joint research with universities and other institutions, and continue exchanges such as dispatching employees and accepting intern students. Furthermore, we are continuously working to improve the knowledge and skills of our researchers by promoting their participation in internal and external lectures and seminars.

We believe that utilizing MI and computational chemistry provides researchers with a wealth of inventiveness and opportunities to expand their flexible thinking and perspectives, and we have created an environment for their use.

We further promote the development of human resources by providing language learning opportunities and trainee programs at overseas research institutions to enable them to work globally.



On-the-job training

Investment in Intellectual Property (IP) and Intangible Assets

● IP strategy

Our Group has established IP Strategy Committees tasked with formulating and implementing IP strategies. The IP Strategy Committees are established for each high-value-added business segment. Each of these committees is chaired by the general manager of the Business Department, and meets regularly with the Business Department as well as the Research and Plant Technology Development Department and the IP Department.

Furthermore, the Research and Production Technology Meeting and the Board of Directors exercise effective oversight over the allocation of management resources, including IP, and the implementation of strategies related to the business portfolio to ensure that these contribute to the sustainable growth of the Group.

Based on the content of discussions at IP Strategy Committee meetings, actions to pursue IP strategies are undertaken at IP review meetings held at the working-level. Meetings are held as needed, in which the divisions involved work together to build patent portfolios and share information on trends in markets and among competitors.

● Strengthening R&D capabilities

We are advancing investment in human resources for our R&D Department as we work to strengthen our R&D capabilities now and into the future.

In order to accelerate R&D, the Group has increased its R&D cost, which in 2022 amounted to 4.7 billion yen (3.0% of net sales ratio). The 2025 Medium-Term Management plan calls for a 20% increase (from 2022). We will continue to move forward with investment in innovation activities.

Since it takes some time to produce economically valuable results, patent applications, etc. through human resources development and R&D, we are increasing the ratio of R&D personnel as an investment in the future.

In addition, we utilize AI to reduce the burden of searching and monitoring other companies' patents, thereby improving operational efficiency.

● Reward System for Proposals and Employee Inventions

The Group has established a Proposal System to encourage employee self-actualization and workplace improvement and enhancement by absorbing the varied originality, ingenuity and ideas of individual employees.

Employees are rewarded for inventions, devices, and design creations that are part of their duties through the Reward System for Employee Inventions. In addition, when we benefit from our own implementation of registered patents, or from licensing them to other companies, the Performance Reward System provides incentives for R&D that actually contributes to improving the Group performance. Furthermore, excellent proposals and employee inventions will be commended by the Review Committee under the Award Program.

Through these efforts, we continuously promote employee stimulation, operational improvement, and strengthening of R&D capabilities.

● Education in IP and intangible assets

In order to raise awareness of IP and intangible assets, and to reduce business risks, the Group provides department-specific and level-specific training (Off-JT and OJT) regarding IP and intangible assets as follows: (1) for Research and Plant Technology Development Department, (2) for Business and Sales Department, (3) for new employees, (4) for career-track employees, and (5) for managers.

In recent years, as the number of R&D personnel has increased, we have conducted exercises for young people in the production of invention proposals, and we are promoting the human resources development for future intellectual creativity. In addition, we conduct education on IP and general information searches, trademarks, contracts and compliance. We also provide education on the use of electronic notarization and notary public services for the management of intangible assets such as industry trade secrets including know-how.

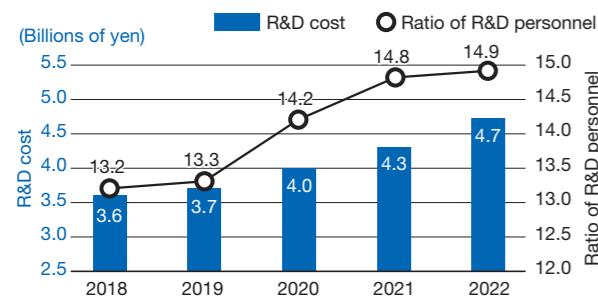
● Overseas brand expansion

Aron Alpha, the top brand of instant glues in Japan, has acquired trademark rights along with the Crazy Glue brand, which is being developed overseas. The rights held amount to approximately 160 worldwide. In addition, anti-counterfeiting measures are being advanced, mainly in Asia. We take a strong stance against counterfeiters and protect brands by conducting surveys of overseas e-commerce sites and local investigations to understand the current situation, administrative disclosure, and even civil lawsuits.

Overseas Expansion of Aron Alpha



R&D Cost and Ratio of R&D Personnel*



*Ratio of R&D personnel (%): number of R&D personnel ÷ Consolidated number of employees × 100

● Examples of IP and intangible assets

Our Group combines multiple IP and intangible assets for multifaceted use.

For the new product Tough Power, developed to commemorate the 50th anniversary of the launch of Aron Alpha, we are working to obtain patents for water- and heat-resistant technology, patents and designs for the easy-to-use container, and trademarks for the name that will have an impact on consumers.

● New business creation activities

In order to create new business operations, our Group collects and analyzes various information, including IP information. We share the analysis results with management and the Business Department, with Research and Plant Technology Development Department, and with IP Department. By expanding into new technology areas from existing technology areas, we are promoting the creation of new corporate value.

In recent years, we have been working to take full advantage of the IP landscape, using IP information, article information, general market information and customer information in order to search for new applications and development themes for our technologies.

Creating bird's-eye views of the explored focus technology areas and visualizing the overall picture leads to new insights. We stimulate discussion in related divisions and encourage the actively generating ideas.

● Improved patent value

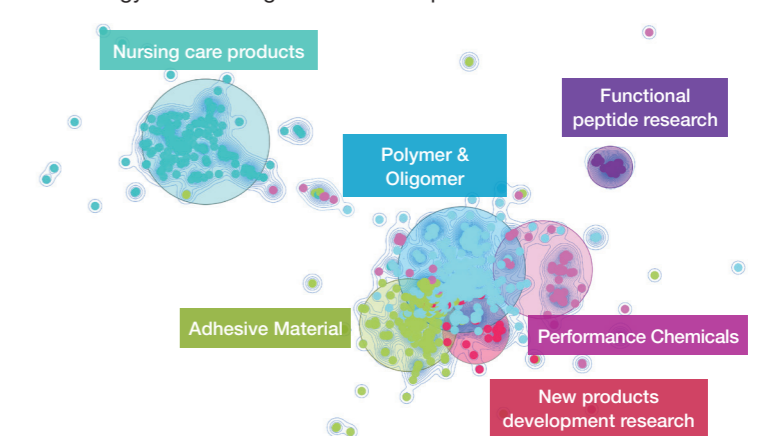
Our Group views IP as an investment in future profitability, and promotes the enhancement of patent value. The value of the Group's patents is gradually increasing in both quality and quantity. The quality of patents is increasing, especially for the new products development business, which is advancing development related to mobility, medical care, and cellulose nano-fibers, and this business is driving the Group's patent value growth.

We will continue to accelerate the strengthening of our R&D capabilities in our new products development business and other high-value-added businesses, apply for patents for results generated through R&D, and obtain high-quality patents by expanding our technology areas, thereby increasing patent value and enhancing our corporate value for the future.

Examples of Aron Alpha IP and intangible assets

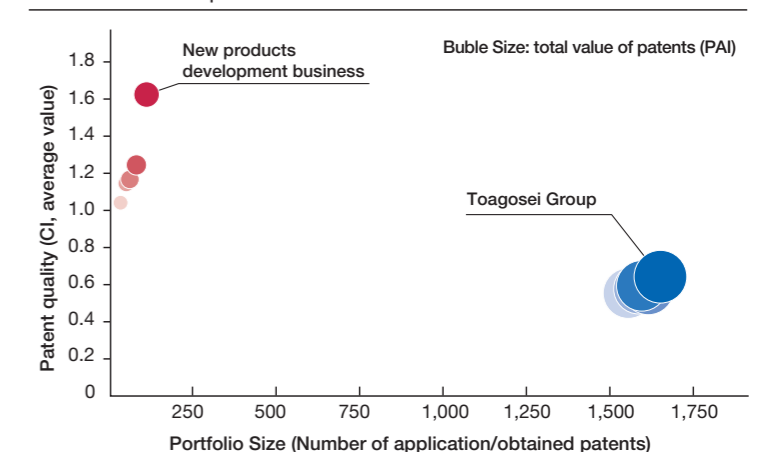


Technology areas for high-value-added products

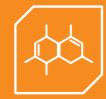


*Created using the VALUENEX Inc. Radar analytical tool. Bird's-eye view of our Group's high-value-added products in Japan, focusing on technologies with pending patent applications at the end of 2022. Each point represents a single patent application, and the degrees of similarity between technologies are expressed by distance for a visual representation of the distribution of technology areas for high-value-added products. Changes over time confirm that the technology areas are expanding.

Value of Our Group's Patents



*Prepared by our Group using LexisNexis® PatentSight®, a patent analysis tool of LexisNexis Intellectual Property Solutions. Color shade: Shows the transition of patent value from past (light) to present (dark) (patent value at the end of each year 2018-2022). Competitive Impact (CI): an average value index per patent family calculated by multiplying the technical value calculated based on the number of citations by the market value calculated based on the country and status of application/rights. Patent Asset Index (PAI): total patent value obtained by multiplying CI by the number of patents.



Commodity Chemicals



Medium- to Long-term Growth Strategy

The commodity chemicals business is centered on basic chemicals, and while it is fundamental to maintain stable operations and steady business management, it is also necessary to respond to requests from customers and partners and to changes in the demand structure of the industrial sector. In particular, from now on we will operate our business in such a way as to contribute to the realization of a carbon-neutral society by changing raw fuels, converting manufacturing methods, and making effective use of hydrogen.

We deal in chemicals that form the basis of industry, supplying raw material products in a variety of fields, while also taking on the role of supplying raw materials for high-value-added products within the company. We primarily handle the following products.

Inorganic chemicals business Electrolysis-related products (caustic soda, caustic potash, chlorine, hydrochloric acid, sodium hypochlorite, iron perchloride, copper oxide, etc.), as well as sulfuric acid and agricultural products (sulfuric acid, potassium bicarbonate, etc.).

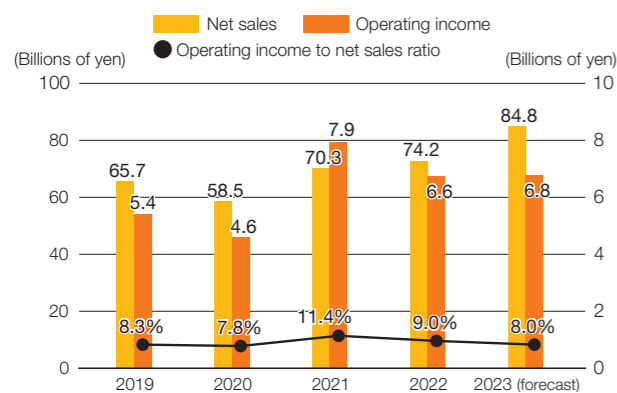
Acrylic monomer business Acrylic products (acrylic acid, acrylic esters, etc.) and chemical products (ethylene carbonate, ATBS: acrylamide tertiary butyl sulfonic acid, etc.)

Industrial gas business A wide range of industrial gases including oxygen, nitrogen and argon.

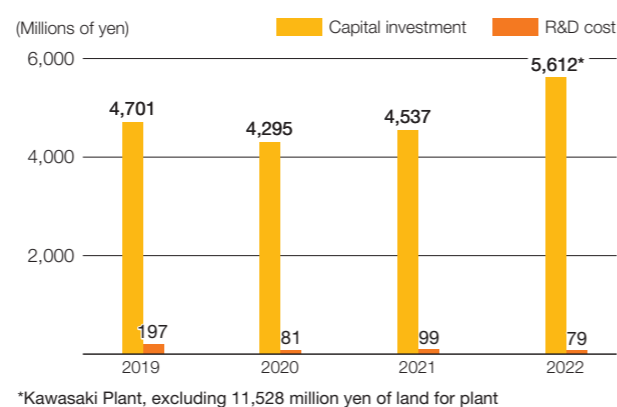


Shoji Takayama
Executive Officer
General Manager, Commodity Chemicals Division

Segment Net Sales and Operating Income



Capital investment and R&D cost



2022 in Review

Overall in 2022, sales volume decreased due to a slowdown in industrial production activities, partly affected by Russia's invasion of Ukraine and the lockdown policy in China. The planned large-scale capital investment was, however, completed despite delays in construction schedules due to labor shortages and raw material price hikes, and we were ready to respond to our customers' production recovery.

Additional actions included those listed below were taken in response to environmental changes.

- To help realize a carbon-free society, we have opened a hydrogen station in Tokushima to supply fuel hydrogen for fuel cell vehicles (official operation began in April 2022).
- We launched nationwide sales of Aron Zia Clean 200 hypochlorous acid solution placed on the market in May 2021, to help combat COVID-19.

Strengths, weaknesses and growth opportunities

Inorganic chemicals business

- Strength** The industry's highest quality and per-unit output performance with high-performance electrolyzer
- Strength** Electrolysis facilities at three locations, enabling local production for local consumption and BCP support
- Weakness** Dispersed factories require large investments for the horizontal deployment of the latest technology
- Growth Opportunity** Nationwide handling of special-grade sodium hypochlorite (sterilization of water supply) through high-purity technology

Acrylic monomer business

- Strength** Highly efficient reaction control in acrylic monomer production, and long-term stability of purification systems resulting in cost reduction and stability of quality
- Strength** Quality advantage due to advanced ATBS polymerization technology
- Growth Opportunity** High-purity ethylene carbonate using proprietary refining technology and expanded into electronic material

Inorganic chemicals business

In the electrolysis business, we will promote carbon neutrality by reducing the amount of electricity used through conversion to high-performance, power-saving equipment, and by conducting electrolysis operations using green power. We will also move forward with our contribution to achieving a carbon-neutral society through

the effective use of hydrogen produced by electrolysis.

In the sulfuric acid business, facilities operation will be increased to meet growing demand for lithium-ion battery cathode materials, etc. Effectively utilizing the steam co-produced by this process can contribute to the carbon neutrality of the manufacturing site.

Acrylic monomer business

In the acrylic products business, we will establish a production and supply system in which we switch raw materials to bio-based products, thereby making progress toward carbon neutrality.

Ethylene carbonate is a product that can contribute to carbon neutrality because it is produced from CO₂. As demand for lithium-ion battery electrolytes grows, we will

promote the establishment of a production system that meets the increasing demand.

Demand for ATBS for oil drilling applications is growing, and as we respond with a production system for applications, we also aim to establish a production system from bio-based raw materials in response to the growing demand for bio-based products.

Industrial gas business

We have manufacturing sites in the Chubu and Hokuriku regions, where our sales activities are closely tied to local industries. We sell oxygen, nitrogen, and argon produced using liquefied natural gas (LNG) cryogenics, which contribute to reduced electricity consumption and CO₂ emissions.

In addition, we have one of the few high-pressure gas

tanker truck container maintenance facilities in the Chubu region. We aim to make our business more environmentally friendly in terms of manufacturing, storage tanks and delivery by enhancing inspections including high-pressure gas storage tank facilities and reducing the environmental impact of the inspections.

FOCUS TOPICS

Yokohama Plant

One line at our hydrochloric acid production facility was newly established through scrap and build. This is aimed at further stabilizing supply.

Nagoya Plant

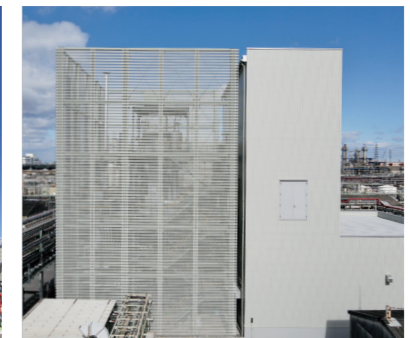
A new flake caustic potash production facility was established. This is aimed at further stabilizing supply.

Oita Plant

An advanced control system was installed in the acrylic acid production facility. The resulting optimal operating conditions led to reductions in variable costs and CO₂. We will proceed with horizontal deployment to manufacturing facilities throughout the company in the future.



(New) hydrochloric acid facility at the Yokohama Plant



(New) flake caustic potash facility at the Nagoya Plant

Polymer & Oligomer



Medium- to Long-term Growth Strategy

As the core of the Toagosei Group's growth strategy, the polymer and oligomer business aims to expand existing business operations in the downstream area of acrylics. At the same time, we aim to expand high-value-added products and to generate new business operations based on our superior synthesis and polymerization technologies, while also expanding overseas businesses.

We handle acrylic products used in a wide range of fields, from household goods to automobiles and electronic materials, as well as pharmaceuticals and cosmetics. We primarily handle the following products.

Acrylic polymers Used in a wide range of applications such as pigment dispersants in paper manufacturing and paints, adhesives for liquid crystal displays, binders for lithium-ion batteries, and in pharmaceuticals and cosmetics.

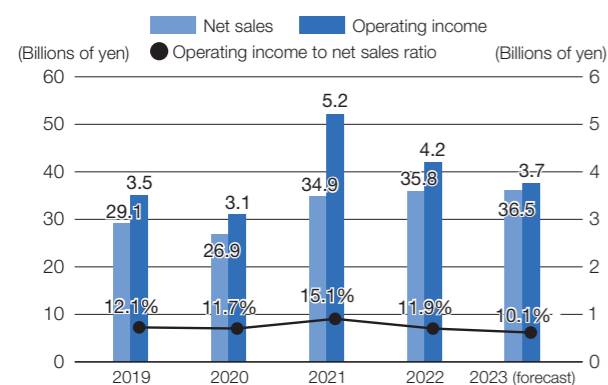
ARONIX UV-curing resin Used in a wide range of fields such as inks, paints, and electronic materials due to its environmental advantages of being solvent-free.

Polymer flocculant Polymer flocculant is used as a treatment agent at sewage treatment plants.

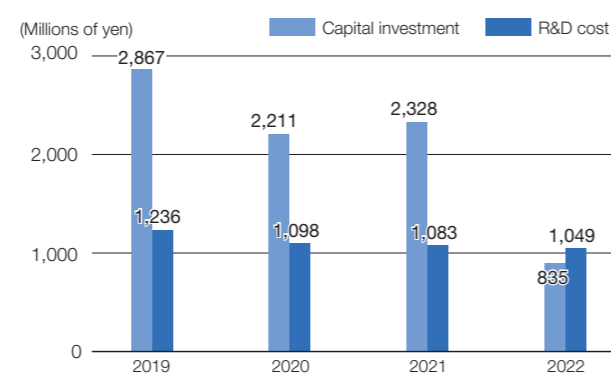


Futoshi Nishitani
Executive Officer
General Manager,
Polymer & Oligomer Division

Segment Net Sales and Operating Income



Capital investment and R&D cost



2022 in Review

Polymer business Sales declined both in Japan and overseas due to lower sales volumes of automotive products and soaring raw material and fuel prices, but we stepped up efforts to expand overseas sales of lithium-ion battery materials and materials for pharmaceutical and cosmetics applications.

Oligomer business Sales declined both in Japan and overseas due to lower sales volumes of display-related materials and soaring raw material and fuel prices, but we stepped up efforts to build an optimal production system, including at overseas bases.

Flocculant business Sales volume increased overall, including exports, and sales prices were revised in response to rising raw material and fuel prices, resulting in increased revenue. We also strengthened our efforts to enhance competitiveness by optimizing our production system.

Overall In R&D, we made progress in development of polymers for high-performance semiconductors using a new polymerization method, and specialty acrylate products with biomass certification, while strengthening the development of materials for lithium-ion batteries.

Strengths, weaknesses and growth opportunities

Polymer business

- **Strength** Polymers solve customer issues with advanced structural control technologies (linear, branched, cross-linked, particle diameter, molecular structure, etc.)
- **Weakness** Issues in establishing an optimal production system, both domestically and internationally, to strengthen competitiveness
- **Growth Opportunity** Overseas expansion is centered on manufacturing bases throughout Asia, and local development and follow-up functions are being strengthened

Oligomer business

- **Strength** The ARONIX lineup of UV-curing resins includes multifunctional acrylates and cationic oxetane

Polymer business

We will explore the potential of high-performance polymers, which are growing in the fields of automobiles, pharmaceuticals, cosmetics, and electronic materials, and we will further develop applications and technologies not only in Japan but elsewhere in Asia as well.

We have positioned Toagosei Singapore Pte Ltd. and Toagosei (Thailand) Co., Ltd. as production and

development bases for ASEAN and other Asian regions, and will promote product development and sales expansion in response to regional needs, while strengthening the foundation of our overseas business by expanding sales of paint dispersants and water treatment agents that excel in cost competitiveness.

Oligomer business

We will advance the development of biomass acrylates to increase competitiveness in terms of quality and cost in the fields of electronics materials such as inks, paints, and resist agents, and to respond to the carbon neutral era.

Taiwan Toagosei and Toa-Jet Chemical Co., Ltd. in Taiwan, as well as Toagosei (Zhangjiagang) New Technology Co., Ltd. in China, are focusing efforts on the semiconductor and

electronic materials fields, and also on capturing demand in such trend-setting areas as 5G and the environment. We are also working to strengthen sales expansion not just locally but in neighboring countries as well.

In manufacturing, we are working to strengthen our business foundation by restructuring to form a tripartite system of production bases in Japan, Taiwan and China.

Flocculant business

With its high-quality ARONFLOC, ACCOFLOC and DIAFLOC polymer flocculant, Group member company MT AquaPolymer, Inc. will provide superior products and fitting solutions for a wide range of wastewater and sludge purification operations. In addition, we will promote the development of highly functional products that contribute

to the reduction of sludge moisture content in the effort to achieve carbon neutrality, strengthen our business foundation, and enhance cost competitiveness by optimizing our production system to further expand our business both in Japan and overseas.

FOCUS TOPICS

Passed GMP* audit for a major cosmetics manufacturer

The Hirono Plant passed a GMP audit by a major overseas cosmetics company.

Through the audit, which was comparable to a pharmaceutical GMP audit, we realized the level of quality demanded by the world.

We will also continue to undergo sustainability audits by EcoVadis (headquartered in France), which began in 2019, and to provide high-value-added products that customers in the pharmaceutical and cosmetics fields can use with confidence.

*Good Manufacturing Practice



Additives for cosmetics, etc.

Adhesive Material



Medium- to Long-term Growth Strategy

As of January 2022, the Adhesive Material Division has been reorganized into two business divisions. These comprise the Aron Alpha Division, which specializes in domestic and international consumer products, further strengthening the Aron Alpha brand while taking responsibility for global strategies, and the New Products Development Division, which is responsible for development in growth areas such as mobility-related products.

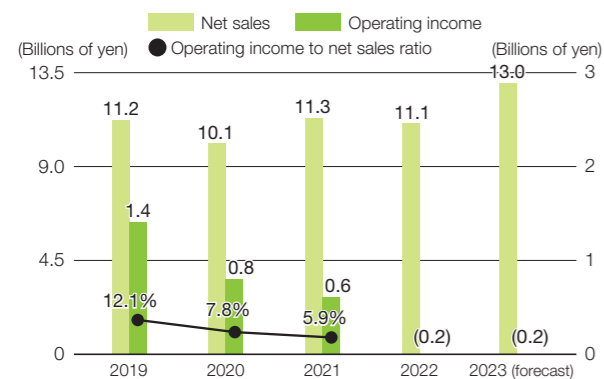
The Adhesive Material business has been contributing to customers' technological innovations and responding to their requirements in pursuit of lighter and thinner product designs, as well as productivity improvement and cost reduction through the adhesion of various materials such as plastics, metals, wood, rubber and leather.

The products we handle include Aron Alpha, which is synonymous with instant glues, as well as a lineup of various high-performance adhesives that meet new needs in such fields as electronic materials, automobiles, and precision equipment.

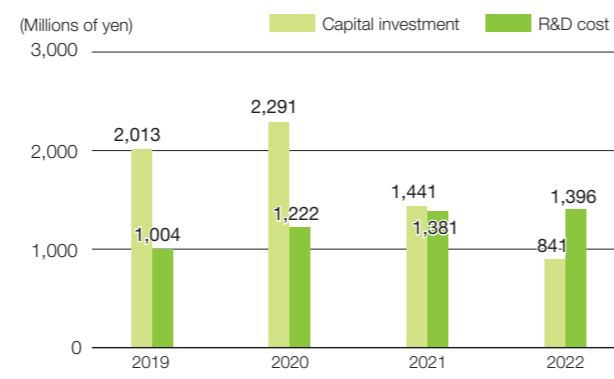


Katsuhiko Sumita
Executive Officer
General Manager, Aron Alpha Division

Segment Net Sales and Operating Income



Capital investment and R&D cost



2022 in Review

Consumer In the summer craft workshops held at home centers nationwide to commemorate the 50th anniversary of the launch of Aron Alpha, more than 1,000 people, mostly elementary school children, participated in the workshops and experienced crafts using Aron Alpha. In addition, our website introduces convenient usage through videos and offers suggestions that can be useful in various aspects of daily life.

Global implementation In the United States, we added tape and other peripheral products other than instant adhesives (U.S. brand name: Krazy Glue) to our lineup as the Krazy brand and launched them on Amazon. We also strengthened sales through e-commerce in China, where the purchase ratio is among the highest in the world. In Thailand, we updated the product design and ran video advertisements, while in the Philippines, we prepared for the launch of the product in 2023.

Functional adhesives As we have sought out new themes and developed new products, we have begun to approach the market for adhesives on the theme of precision fixation of optical components.

Strengths, weaknesses and growth opportunities

Consumer

- **Strength** High brand strength of Aron Alpha, certified by Guinness World Records as the world's longest-lived brand of instant adhesives for general consumers
- **Weakness** Rise of low-priced competitors such as 100-yen shops, etc.

Global implementation

- **Growth Opportunity** The global market for instant adhesives, including Southeast Asia and North America, is expanding

Functional adhesives

- **Strength** Development capabilities that meet new adhesive needs brought on by technological innovations in telecommunications and automobiles
- **Strength** Helping customers in their environmental improvement efforts by offering environmentally friendly adhesive systems such as light curing, instant adhesion, and hot-melt adhesion

Aron Alpha Division

By further enhancing the strength of the Aron Alpha brand, we will remain the top runner in instant adhesives.

In Japan, we will continue to offer new products with high customer satisfaction in response to such challenges as the entry of competing manufacturers and changes in the market (the increase in private brands and the expansion of e-commerce). For example, we will proactively communicate product development and suggested applications from the consumer's perspective, such as by

emphasizing environmentally friendly adhesives that are easy for children to handle, and adhesives that help save time while crafting.

Overseas, we will expand our business development from a focus on North America and China to a global expansion that includes Southeast Asia and other regions. We will promote global development under the Aron Alpha and Krazy brands, which are widely accepted in the Japanese and U.S. markets.

Functional adhesives business

We are developing highly functional products that meet the needs of the growing field. We will focus effort on the development of adhesives used for various components such as substrate materials, batteries, and sensing materials, targeting the information and telecommunications field, where even faster 6G communications are expected to be put into practical use, and the mobility field, where the shift

toward electrification and the development of automated driving technology are advancing.

We will also develop biomass adhesives and other products adapted to a sustainable society.

With these products, in which we have an advantage, we will aggressively develop new markets in Japan as well as overseas.

FOCUS TOPICS

New Krazy products

In the United States, in addition to sales of Krazy Glue instant adhesive, we have begun sales of tape and adhesives for peripheral category products. We succeeded in differentiation from competitors by outperforming them in terms of adhesive strength and speed in pursuit of the Krazy brand concept: "Krazy Strong, Krazy Fast." Based on consumer survey research, Krazy Tape is developing a new tape market by adopting an easy-to-peel release liner and offering a wide range of usage scenarios. In addition, Krazy Fix will further enhance the presence of the Krazy brand in the emergency repair market as a complementary product for adhesion to materials and applications that have been difficult for Krazy Glue. By developing a new product lineup for the long-selling Krazy Glue, which will celebrate its 50th anniversary in 2023, we will continue this evolution so that it will continue to be loved in the United States for many years to come.



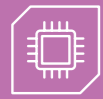
New Krazy products

Summer break classroom

Craft classrooms using Aron Alpha were held at eight home centers nationwide. "I want to make something like this!" is the concept, including for younger children who will be experiencing Aron Alpha for the first time. Participants were amazed at the ability to make it happen in an instant with Aron Alpha, as they got a true sense of its convenience. Parents were also encouraged to imagine the use of Aron Alpha as a convenient adhesive that can be used not only for repairs but also for crafts.



Summer break classroom



Performance Chemicals



Medium- to Long-term Growth Strategy

In the area of high-purity inorganic chemicals, latent demand for semiconductors remains strong due to the progress of 5G and IoT and the accompanying need to expand data center capacity, and demand is expected to continue to grow in the future. We will therefore expand our facilities and strengthen the stable supply system in order to fulfill our supply responsibilities. Capitalizing on our track record with our existing products, we will also emphasize development of new products. Regarding inorganic functional materials, we will provide products that make life more comfortable, such as antimicrobial, antiviral, and deodorizing products, while further strengthening overseas development and expansion to contribute to market expansion.

We handle high-performance products that are indispensable to more comfortable lifestyles. We primarily handle the following products.

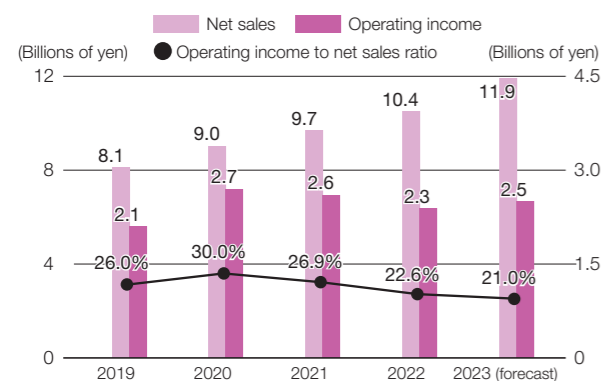
High-purity inorganic chemicals business High-purity inorganic chemicals with applications in semiconductor miniaturization and integration, such as Liquid Hydrogen Chloride and high-purity alkaline products, as well as hexachlorodisilane.

Inorganic functional materials business A range of additives, such as IXE and IXEPLAS impurity ion-trapping agents that increase the reliability of electronic materials, as well as KESMON and NOVARON, which perform antimicrobial, antiviral, deodorizing and other comfort-enhancing functions in textile and plastic materials.

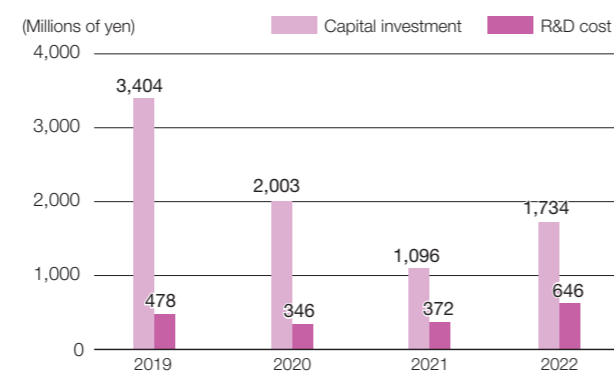


Atsushi Tamura
Executive Officer
General Manager,
Performance Chemicals
Division

Segment Net Sales and Operating Income



Capital investment and R&D cost



2022 in Review

High-purity inorganic chemicals business In response to growing global demand for semiconductors, we expanded our production system and aggressively expanded sales, resulting in significant growth of our high-purity inorganic chemicals business. We also focused on improving quality as semiconductors continue to shrink in size and require even greater purity. Demand has declined since the second half of 2022, but is expected to recover in the second half of 2023, and growth is expected to continue over the medium to long term.

Inorganic functional materials business Although the market for antibacterial and antiviral products expanded due to COVID-19, the robust inquiries have calmed down and demand remained steady. Demand for deodorizers has increased due to growing deodorant needs, and the adoption of our products has progressed. Demand for amenity processing agents for overseas markets is also expected to continue to increase.

Strengths, weaknesses and growth opportunities

High-purity inorganic chemicals business

- Strength Supply chains capable of meeting growing global demand for semiconductors
- Strength High-purification technology and product development capabilities based on proprietary development
- Weakness Importing primary raw materials makes the Company vulnerable to exchange rates and international conditions
- Growth opportunity Expansion of semiconductor applications due to lifestyle changes and technological innovation

Inorganic functional materials business

- Strength Synthesis and particle control technologies (function, shape, particle diameter) effective for application-specific optimization
- Strength Evaluation and analysis technologies and support systems to bring out product functionality
- Growth Opportunity Expansion of the market for functional textiles due to rising living standards in Asia and other regions

High-purity inorganic chemicals business

We believe that shipments of high-purity inorganic chemicals will remain strong in Asia and the United States, which are the core semiconductor markets. Semiconductors are now essential in many industries and support future technologies such as IoT, AI, and CASE*. Meanwhile, given that this is a point of economic security contention, the future remains difficult to predict. However, demand itself is sure to grow and will continue to grow in terms of realizing a sustainable world, including power semiconductors. High-purity inorganic products are used in the front-end processes of semiconductor manufacturing to support this, and are used in a wide range of fields

including wafers, logic, and memory.

In order to meet future increases in demand and quality requirements accompanying miniaturization and high integration, we will aggressively make capital investments to strengthen our manufacturing facilities and rebuild our quality assurance system to establish a rock-solid supply system. We will also focus on expanding sales of our mainstay liquid hydrogen chloride and alkali products.

In addition, we will promote R&D of new products to respond to technological innovation in semiconductors.

*An acronym for Connected, Autonomous, Shared & Service, Electric

Inorganic functional materials business

We will develop new ion exchangers that improve the reliability of electronic components, and market new products that can respond to the high integration and high resolution of next-generation semiconductors.

In addition, we will promote business development of antibacterial and antiviral agents with an eye on the post-COVID-19 era and, in response to the rising global demand for deodorants due to the improvement of living standards, aim to expand sales to textile applications where the

characteristics of our agents can be utilized.

Furthermore, in order to meet requirements from overseas, we have placed market development staff for amenity processing agents at each of our Asian bases and are working to expand our overseas operations.

In R&D, we will refine our microparticle diameter control technology to deepen our core technology and develop new inorganic materials.

New Product development

In the medical care field, we will focus on launching several medical devices/pharmaceutical intermediates within a few years, and also plan to launch sales of

AronFibro cellulose nanofiber in 2023 (see also Special Feature: New Products Development Division [P27]).

FOCUS TOPICS

Development of new antiviral processing agents

An antiviral processing agent we have developed is increasingly being adopted in various application fields. In addition, for use in resin kneading, we are developing processing agents that can optimize antiviral activity in molded products by leveraging our knowledge of inorganic synthetic chemistry, which is one of our strengths, to capture even further demand.



Household deodorizing, antimicrobial and antiviral products

Plastics



Medium- to Long-term Growth Strategy

In the piping equipment business, we aim to improve profits by shifting management resources to high-value-added products amid a decrease in housing construction due to the declining population. In the nursing care products business, we will focus on improving product functionality in the domestic nursing care field, where demand is increasing with the aging of the population, as we work to expand the market with an eye to cultivating overseas demand. The elastomer business will aggressively develop high-performance products and expand overseas demand to effectively utilize the production base in Thailand. At Aronkasei, we will contribute to society by optimizing the allocation of management resources to each business and solving problems promptly.

Supported by our three core business operations, we provide highly functional value-added products that are indispensable to a sustainable society. We primarily handle the following products.

Piping equipment business Providing products such as vinyl chloride chambers, pipes and joints, mainly in the fields of water supply, sewage, rainwater, and drainage, which are crucial to social infrastructure. Providing building material products.

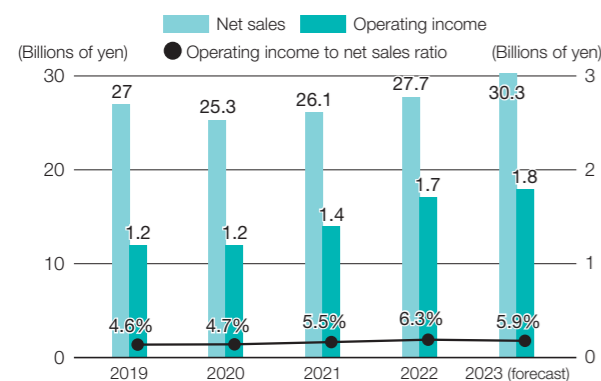
Nursing care products business Supplying Anju-brand nursing care products in the fields of excretory/bathing care and mobility/ambulatory products. New supply of products for older pets.

Elastomers Business Providing thermoplastic materials in various fields such as medical, food, automotive, and electric/electronic components.

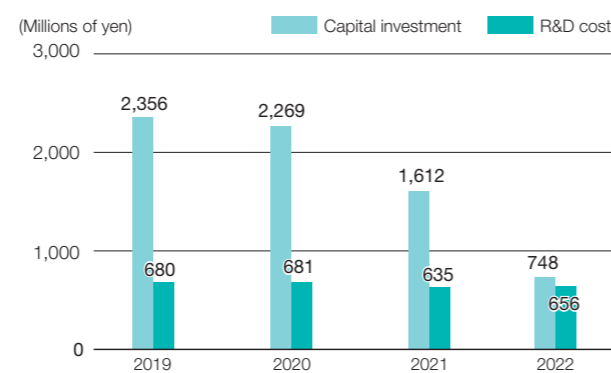


Ryosuke Fujiwara
Aronkasei Co., Ltd.
President and Representative Director

Segment Net Sales and Operating Income



Capital investment and R&D cost



2022 in Review

Piping equipment business Although sales volume dropped due to a review of unprofitable transactions in general-purpose pipe and joint products, net sales of increased from 2021 due to the transfer of raw material price increases to products as well as increase of sales volume of products in disaster prevention areas such as floods and earthquakes. Profit increased due to product price adjustments and increased sales of high-value-added products. Overall, the business posted a decrease in sales and an increase in profits.

Nursing care products business In the first half of the year, sales volume declined due to the COVID-19 pandemic, which hampered production at overseas manufacturing subcontractors. In the second half, sales of new products in the rental sector were strong. Profit declined due to an increase in foreign exchange effects on overseas purchase costs. Overall, the business posted an increase in sales but a decrease in profits.

Elastomer business Sales volume was lower than in 2021, resulting in decrease in sales due in part to stagnation of production activities by major customers in electrical and electronics equipment and automotive applications, as a result of the semiconductor shortage. Profit declined, partly due to the impact of soaring raw material prices.

Strengths, weaknesses and growth opportunities

Piping equipment business

- **Strength** Ability to develop highly functional products that contribute to fields involved in countermeasures for flooding and inundation, earthquake resistance and disaster prevention, as well as infrastructure aging
- **Weakness** Shrinking domestic market

Nursing care products business

- **Strength** The power of the Anju brand and the development capability to catch up with demand for nursing care in a super-aging population society
- **Weakness** Fluctuations in demand trends due to revisions to the nursing care insurance system, cost fluctuations in products purchased from overseas subcontractors, and unstable product supply

Elastomer

- **Strength** Compounding technology that enables precise response to customer requirements, optimization of production system with two production bases, one in Thailand and the other in Japan
- **Weakness** Unstable raw material procurement

Piping equipment business

We will accelerate development of products that contribute to the three fields of countermeasures for flooding and inundation, earthquake resistance and disaster prevention, and infrastructure aging. The aim is to contribute to a safe and secure society by strengthening our lineup of disaster countermeasure products and private sector BCP products to prepare for increasingly severe natural disasters, and products that support the longevity of

aging social infrastructure.

In response to the shortage of personnel at construction sites, where the problem has become pronounced, we are shifting our portfolio to high-value-added products, focusing on the development of high-performance products that can shorten and simplify construction times and reduce workloads.

Nursing care products business

Coping with a super-aging society has become a major social issue. Demand related to nursing care services and home-based nursing care is on the rise due to the growing number of people requiring nursing care. Amid this trend, we, as a leading manufacturer of nursing care products to support those in need of care as well as caregivers, will actively invest in the development of new products that

solve problems in the nursing care industry, fully applying our market and product development capabilities and ability to make proposals, which we have cultivated under the Anju brand.

In addition, we will promote sales of nursing care products overseas and develop a new pet support business, OneAid, which includes products for elderly pets.

Elastomer business

Based on our compounding and blending technologies obtained from work on styrenic elastomers, we have built a system to produce and supply a variety of polyester and olefin-based products in Japan and Thailand. As part of the global movement toward decarbonization, we are working even harder to commercialize biomass elastomers in Thailand, which have advantages over vulcanized rubber in

terms of load and recyclability during the molding process. We will also strengthen the development of highly functional products such as gas barrier and conductive products, and will reinforce recruiting activities in the Asian market, where demand is growing, especially in the medical, food, automotive, and electrical and electronics fields.

FOCUS TOPICS

Sales strategies utilizing SNS

The pet support business, which develops products for elderly pets, focuses on promotion using influencers such as celebrities and pet trimming experts.

Please watch the video, which can be viewed on our corporate website (ARONKASEI Channel).



Posture support for senior dogs (RelaCushion)



Instagram screen

Sustainability Strategy Dialogue



Takashi Takano
General Manager,
Sustainability Division

Taizo Serita
Director
General Manager, Group
Administrative Division

We will rethink our sustainability efforts in terms of risks and opportunities, and create new businesses that contribute to the sustainability of our company and society.

In January 2023, we established a new Sustainability Division in line with our policy of deepening ESG management in order to simultaneously realize a sustainable society and enhance corporate value.

Takashi Takano, General Manager of the Sustainability Division, and Taizo Serita, General Manager of the Group Administration Division, discussed the Toagosei Group's sustainability management and the future development of the Sustainability Business Division.

Contributing to a sustainable society and enhancing corporate value.

A new organization launched with the strong desire of the President

Serita The concept of sustainability required in corporate management has gradually shifted from the past. Our Group has also been implementing company-wide activities while reviewing our own activities based on the demands of society and the responsibilities we must fulfill as a Company. We recognize that a more integrated and effective approach is now required.

Therefore, the Sustainability Division was established through an organizational change aimed at deepening the Group's ESG management. This is a new organization that embodies the president's strong desire to enhance the risk and opportunity strategies of our carbon neutral and other sustainability activities, while also contributing to a sustainable society and increasing our corporate value.

Takano Since 2022, when the main responsibility for promoting sustainability was transferred to the Technology and Production Administrative Division, I have been working on specific studies for the in-house introduction

of renewable energy. Until now, we have been evaluating rationality and effectiveness from a short- to medium-term perspective, but the new Sustainability Division will switch to a longer-term perspective to ensure that our Group can continue to grow and increase corporate value in the future.

Serita Mr. Takano, you were selected as the general manager because of your extensive knowledge not only of Scope 1, 2, and 3 CO₂ emissions management, but also of renewable energy, hydrogen stations, and other businesses. It is not an easy task to pave the way to monetization. I'm glad you accepted such a big role.

Embodying our corporate philosophy by creating products that absorb CO₂ without emitting any CO₂

Takano This division will bear primary responsibility for internal environmental projects and the disclosure of non-financial information such as TCFD and carbon footprint data as well, but the most important initiative is to create new opportunities. We are currently working with each division to explore ideas. In the renewable energy business, under the current circumstances of

soaring energy prices, we are considering biomass power generation and hydroelectric power generation, and are thinking with members of the Nagoya office of this division about full-scale commercialization of each. These are in addition to the solar power generation for which we already have assets.

Serita What's important is people, and the changes in people's thinking. I am looking forward to seeing us take a step forward by changing the perspective from cost or cost reduction to business operations. We recently received a proposal for a small hydroelectric power generation project plan, which we immediately considered as an investment project that would contribute to GHG reduction, which is a goal of our 2025 Medium-Term Management Plan. Of course, if new businesses emerge from completely different areas and ideas, and not just electric power, we are willing to make decisions on those as well.

Takano I would like to develop our business and link it to new business and to our contribution to society.

In April 2022, we held the opening ceremony for Toagosei Hydrogen Station Tokushima and officially began operations. The station refines hydrogen generated from the brine electrolysis facilities at the Tokushima Plant and supplies it directly, eliminating the need for the process of transporting hydrogen purchased from outside. Compared to other hydrogen stations, there are no CO₂ emissions during transportation, and costs are lower. This is a collaborative project with Tokushima Prefecture, which has issued a declaration on realizing a hydrogen-based society, and we expect the number of hydrogen fuel cell vehicles (FCVs) to increase in the future.

Serita In addition to the Tokushima Plant, we also have brine electrolysis plants at our Yokohama and Nagoya Plants, which will allow us to increase our hydrogen supply.

Takano That's right. The question is whether the electricity used in production is renewable energy. Electric utilities companies will also be moving away from fossil fuels to achieve carbon neutrality, but we cannot wait for them to do so. We intend, as soon as possible, to achieve production using our own renewable energy sources, and to supply green hydrogen to the world.

In addition, the Tahara Solar/Wind Electricity Generation Plant in Aichi Prefecture is a project in which we invested 10 years ago, and we have just about recovered the investment, so we are now entering the stage where it will generate profit. We have also gained knowledge from the solar and wind power technology demonstrations, which we will be able to apply to future developments.

Serita When the price of electricity rises so high, it becomes a major factor pressuring profit. We must increase energy self-sufficiency rate by using business sites to install high-efficiency solar facilities and by other means. Even if it is not profitable for the business right now, it will probably be able to make a contribution with respect to immediate costs.

In addition, global issues surrounding GHGs and energy, such as carbon border taxes, carbon pricing, and even competition for resources, are emerging relentlessly and in

rapid succession. As manufacturers, we recognize that it will be extremely important for our future business growth to reduce our own energy consumption and CO₂ emissions through technological innovation, and at the same time to work to reduce the energy consumption of society as a whole.

Another thing I have strong hopes for is our Plant Factory. Although it will not fix CO₂, I think it is a good idea to come up with a mechanism to efficiently absorb CO₂ and increase productivity through lettuce production. As a manufacturer, we have developed and supplied various raw materials and other materials. Now if we can create products that absorb CO₂ instead of emitting it, that will truly be a conceptual reversal. I think that this would be an embodiment of our Corporate Philosophy: "Through the endless possibilities of chemistry, we bring happiness created by highly functional materials."

Takano The Plant Factory in Takaoka City, Toyama Prefecture, has been used as a pilot operation, but now that it will be the responsibility of the Sustainability Division starting in 2023, we will work to improve the production efficiency and profitability of lettuce production. Our plan is to expand into the Tokyo metropolitan area if we can establish a highly efficient production process.

People's ideas are the driving force for growth. We aim to be a company that can respond with ideas to the various changes of the times

Takano I believe that our Group must be in a position to lead society and the industry in sustainability management. In addition to climate change mitigation and adaptation, issues include biodiversity and the circular economy. Rather than thinking that it is enough if only our company can generate profit while responding to such issues, it is very important to think of businesses that will generate returns for all stakeholders, including shareholders, customers, suppliers, and employees, and that will permanently increase the value of the company, and to develop them as new businesses. We hope that our shareholders can look forward to our sustainability management from a more long-term perspective.

Serita I believe that not only the theme of carbon neutrality, but also people's ideas will be the driving force for corporate growth in the future. Just as the relationship between the global environment and corporations is changing, we feel that the relationship between shareholders and corporations and between employees and corporations is also changing dramatically over time. And companies that fail to respond appropriately to those changes will no longer be able to grow.

I want us to aim to become a company where human resources rich in challenging spirit can respond to the various changes of the times with ideas while we focus on the creation of an environment where our diverse human resources can work more comfortably and exercise their abilities more easily.

Sustainability Management

All-TOA Sustainability Policy

We take up a challenge to create new value to deliver happiness to future generations.

The Toagosei Group aims to provide social value through our business and strengthen our enduring corporate foundation as initiatives to realize a sustainable society and sustainable growth of the Group.

Sustainability Management System

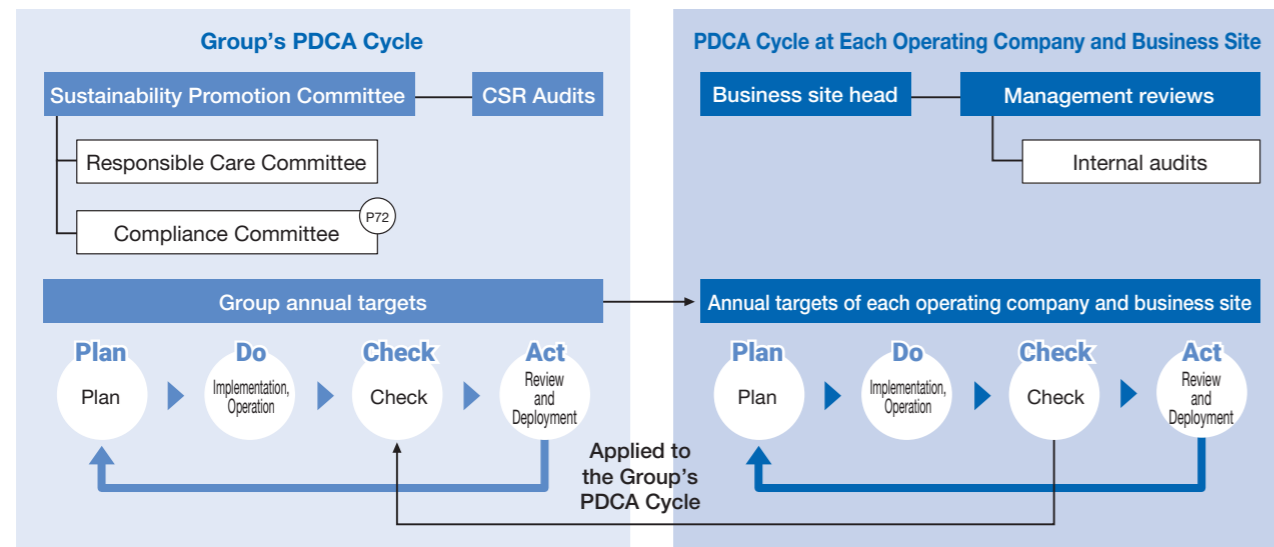
In accordance with our Sustainability Policy, our Group is committed to building a sustainable future together with society through our business activities. The Group is continually improving CSR activities by implementing the PDCA cycle to improve our ISO certified environmental and quality management.

The annual sustainability promotion goals are determined by the Sustainability Promotion Committee,

chaired by the President.

Based on the Group's policies and targets determined here, each operating company and its business sites draw up individual action plans to promote and review activities.

In addition to the Sustainability Promotion Committee, CSR Audits, the Responsible Care Committee and the Compliance Committee have been set up to ensure the smooth operation of the PDCA cycle for the entire Group.

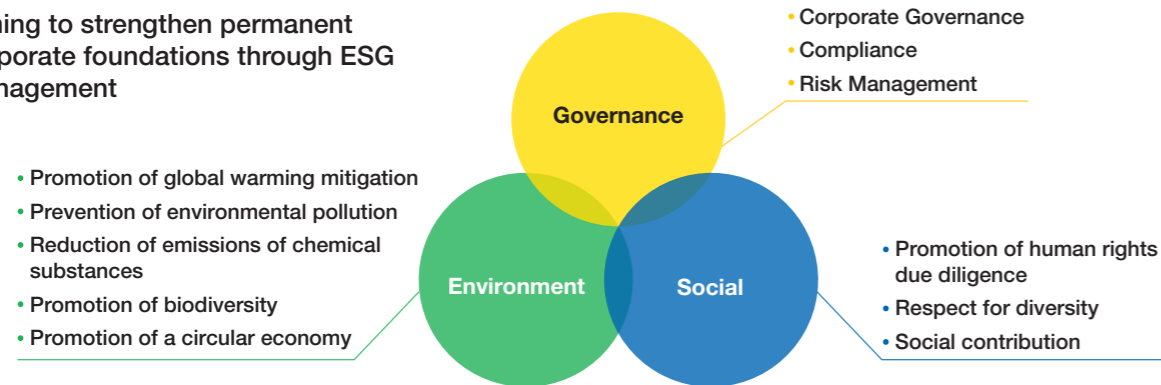


CSR Audits: The person in charge of auditing conducts an on-site audit of the status of CSR initiatives at each business site of each company every year.

Responsible Care Committee: A plenary meeting is held quarterly to comprehensively manage the status of RC activities at each company's sites.

Compliance Committee: The committee supervises and investigates the implementation status of company-wide compliance measures and makes recommendations for improvement.

Aiming to strengthen permanent corporate foundations through ESG management



Sustainability-related initiatives in the 2025 Medium-Term Management Plan

The entire company is committed to contributing to the realization of a sustainable society, a materiality of the 2025 Medium-Term Management Plan.

Materiality Element	Key Initiatives	Targets for 2025
Climate change mitigation	<ul style="list-style-type: none"> Basic Targets <ul style="list-style-type: none"> 2030 Reduction of CO₂ emissions by 50% (from 2013) 2050 Carbon Neutrality 	CO ₂ emission reduction 35% (from 2013)
	<ul style="list-style-type: none"> Promotion of factory energy conservation (electrolysis facilities updates, heat use efficiency improvement, conversion to low-GHG fuels, etc.) 	CO ₂ emission reduction 20 kt (2023-2025)
	<ul style="list-style-type: none"> Introduction of renewable energy (solar power, small-scale hydroelectric power, biomass power, etc.) 	CO ₂ emission reduction 17 kt (2023-2025)
	<ul style="list-style-type: none"> Providing society with products that contribute to CO₂ emission reduction 	
	<ul style="list-style-type: none"> Disclosure of CFP figures of our products to customers and strengthening of CFP management 	All bulk product information disclosure
	<ul style="list-style-type: none"> Contribution to effective use of hydrogen and building social infrastructure 	Over 98% utilization rate of electrolytic hydrogen
	<ul style="list-style-type: none"> Consideration of CCUS and energy storage systems 	
Climate change adaptation	<ul style="list-style-type: none"> Reduction of GHG through the supply chain (promotion of lower GHG in raw material procurement and transport, product transportation, etc.) 	Scope 3 reduction of 3% (from 2022)
	<ul style="list-style-type: none"> Continuation of business activities in the event of a natural disaster 	Complete establishment of BCP for major products
	<ul style="list-style-type: none"> Operational and facilities response to chronic extreme weather events (heat, cold, drought, prolonged rainfall, etc.) 	Planning and investment calculation
Promotion of biodiversity	<ul style="list-style-type: none"> Creation of new businesses that anticipate adaptation to climate change (development of products that help strengthen social infrastructure, disaster prevention, environmental health, etc.) 	
	<ul style="list-style-type: none"> Promotion based on the National Biodiversity Strategy 2023-2030 <ul style="list-style-type: none"> Promotion of the use of ship ballast water chemicals for Target 6, reducing the rate of invasive alien species introduction, and reducing impacts in high-priority sites Increase in plant factory operation for Target 7, reducing the impact of pollutants, including eutrophication, biocides, and plastic waste reduction 	Net sales of ballast water chemicals +10% (from 2022) Plant factory lettuce net sales + 10% (from 2022)
	<ul style="list-style-type: none"> Promotion of social contribution activities (expansion of the scope of participation in forest conservation activities and river/coastal cleanup activities) 	Number of participants + 10% (from 2022)
Promotion of a circular economy	<ul style="list-style-type: none"> Development of products that contribute to biodiversity (purification of wastewater and sludge, development of environmentally friendly products) 	
	<ul style="list-style-type: none"> Creation of new businesses aimed at resource recycling (resource conservation, development of recycled products, construction of resource recovery systems) Enhancement of the in-house eco-products certification system and expansion of the number of products 	
Expansion of sustainable products	<ul style="list-style-type: none"> Development of environmentally friendly products (expansion of biomass-derived, biodegradable and recycled products) 	
	<ul style="list-style-type: none"> Expansion of products to meet the demand for nursing care in a super-aging society 	
DX Promotion	<ul style="list-style-type: none"> Business innovation (reform of indirect operations company-wide) 	
	<ul style="list-style-type: none"> Sales innovation (digital marketing promotion) 	
	<ul style="list-style-type: none"> Research innovation (pervasive use of MI and computational chemistry) 	
	<ul style="list-style-type: none"> Production innovation (smart factory realization) Human resource development (improvement of digital literacy for all employees) 	

Responsible Care (RC) Management



Basic Policies for RC

Mindful of its responsibilities as an enterprise engaged in the chemical business, the Group is promoting Responsible Care (RC) activities under the Basic Policies for RC in order to ensure safety (occupational health and safety, security and disaster prevention, product safety, and physical distribution safety) and to continue efforts to protect the environment.

In accordance with the corporate philosophy and based on our policy of contributing to society by offering useful chemical products, our priority is to ensure safety of workers and people in society at large throughout our business activities. Our aim is to reduce environmental impacts of all our processes from procurement of raw materials to final disposal of products after use.



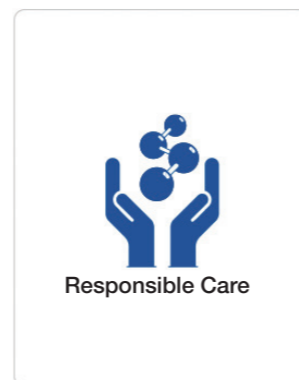
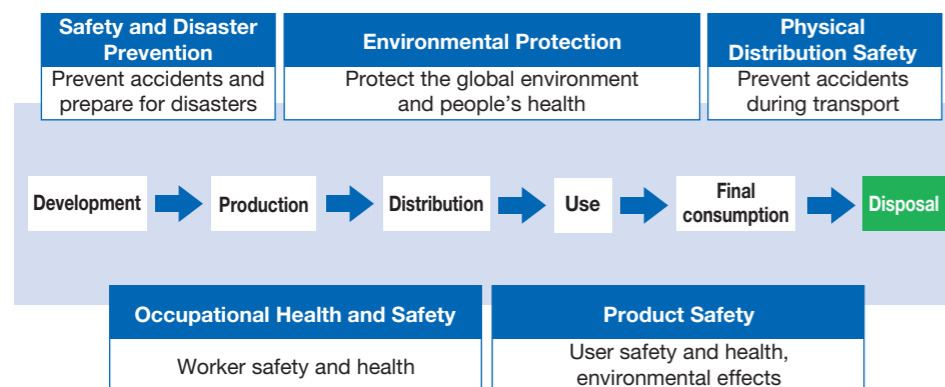
Toagosei Group and Responsible Care

Responsible Care (RC) activities are voluntary initiatives of companies handling chemical substances to ensure environmental protection and health and safety throughout product life cycles. Companies disclose the results of their activities and thus communicate with society.

Toagosei has been a member of the Japan Responsible Care Council (JRCC) since its establishment by the Japan Chemical Industry Association (JCIA) in 1995 and is

promoting RC activities throughout the Group.

Toagosei endorsed the Responsible Care Global Charter established by the International Council of Chemical Associations (ICCA) in 2009 and revised in 2014. The president of Toagosei is a signatory of this charter and Toagosei is committed to the vigorous promotion of RC activities.



Environmental Protection

Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Global Warming Mitigation	Medium- to Long-Term Targets for CO ₂ Emission Reduction (Scope 1+2) • 2030 Reduction of CO ₂ emissions by 50% (from 2013) • 2050 Carbon Neutrality	CO ₂ emissions 324 kt (25% reduction from 2013)	★★	Medium- to Long-Term Targets for CO ₂ Emission Reduction (Scope 1+2) • 2030 Reduction of CO ₂ emissions by 50% (from 2013) • 2050 Carbon Neutrality
	Strengthen management by implementing management system for chlorofluorocarbon	• No leakage from accidents and below obligation to report as stipulated Law concerning the Recovery and Destruction of Fluorocarbons • CFC management system implementation delayed but under way	★★	Strengthen management by implementing management system for chlorofluorocarbon
Initiatives to Realize a Recycling Society	• Final landfill disposal rate: 0.5% or less	• Final landfill disposal rate: 2.0% (including waste from building demolition, without which the final landfill disposal rate is 0.09% under normal operations.)	★	• Final landfill disposal rate: 0.5% or less
	• Continued sorting of waste and appropriate disposal	• Continued sorting of waste and appropriate disposal	★★★★	• Continued sorting of waste and appropriate disposal
	• Promotion of recycling and waste volume reduction	• Switching to a value recovery service provider	★★★★	• Promotion of recycling and waste volume reduction
Environmental Impact Reduction initiatives	• Emissions of substances subject to PRTR: 41 tons or less	• PRTR emissions: 34 tons	★★★★	• Emissions of substances subject to PRTR: 41 tons or less
	• Prevention of environmental pollution: conservation of water, air, and soil	• Proper maintenance of waste gas and drainage systems	★★	• Pursue zero emissions for all chemical substances
	• Zero serious environmental accidents	• Specific wastewater Total nitrogen in excess of legal limits • Insufficient treatment in the odor removal tower caused odor to diffuse into the vicinity	★	• Zero serious environmental accidents • Prevent pollution of rivers and oceans by microplastics

➤ Reducing CO₂ Emissions by Reducing Energy Consumption

We have set medium and long-term targets for the reduction of CO₂ emissions from production activities (Scope 1+2) in the two steps of the PDCA chart above. We have formulated an energy conservation roadmap to achieve these targets at each business site and are steadily introducing equipment and technologies.

The situation in 2022 posed difficulties due to the recovery of production activity following the COVID-19 pandemic, a review of CO₂ emission sources, and an increase in the CO₂ emission coefficient of electric power companies. Over the medium to long term, however, we are generally on pace to achieve our reduction target by 2030. We also promote the optimal use of energy by introducing renewable energy in-house and in partnership with local communities.

➤ Protection of Water Quality

We consider water a limited resource and strive to promote its efficient use. In 2022, the domestic Group used 56 million m³ of water and discharged 42 million m³ of water in total, a reduction from the previous year. We are increasing the capacity of drainage facilities in view of increasing storm and flood damage in recent years. We set voluntary control values and rigorously control effluents. At plants adjacent to semi-enclosed sea areas (Tokyo Bay, Ise Bay, Seto Inland Sea), we have installed automatic measurement systems for total nitrogen and total phosphorous and support management of total volume control. At our overseas production sites as well, we manage water resource consumption in compliance with the effluent regulations of each country.

➤ Protection of Air Quality

To comply with government emission standards and regulation values in agreements with local communities for sulfur oxides (SO_x), nitrogen oxides (NO_x), and dust in exhaust gas, we set our own voluntary control values and thoroughly manage exhaust gas emissions. In addition, the respective overseas production sites control their exhaust in accordance with applicable regulations in their jurisdictions.

➤ Chemical Substance Emissions Reduction

Each business site conducts appropriate notifications in compliance with the Law concerning Pollutant Release and Transfer Register (PRTR Law). In 2022, we continued our review to more accurately identify emissions of target substances and took action in preparation for the designation of additional PRTR target substances in 2023. In the future, we will work to achieve zero emissions of all chemical substances, not just PRTR target substances.

Emissions of Principal Substances Subject to PRTR (t)

Major emissions	2021	2022
Chloromethane (methyl chloride)	19.9	17.3
n-Hexane	7.2	1.1
Methyl acrylate	6.5	6.4
Acetonitrile	5.2	2.2
Chloroethylene (vinyl chloride)	3.3	3.5
Cumene	1.8	1.6

Environmental accounting

Environmental investments and expenses by cost category

Types of environmental conservation costs (Content of major initiatives)		Investment (Millions of yen)	Cost (Millions of yen)
① Cost within business area		2,859	6,931
Breakdown	1 Pollution prevention costs (costs to prevent atmospheric and water pollution)	2,358	5,564
	2 Environmental preservation costs (costs to prevent global warming, promote energy-saving, prevent destruction of the ozone layer)	482	818
	3 Material recycling costs (costs to use materials efficiently and for disposal and treatment of industrial waste)	19	548
② Upstream/downstream costs (costs incurred in downstream/upstream from manufacturing and service activities: green procurement, etc.)		7	591
③ Management activity costs (costs to maintain and operate environmental management system, monitor and measure environmental impact, and offer environmental education)		61	963
④ R&D costs (costs to research and develop products and other items that contribute to environmental protection and reduce environmental impact during manufacturing)		22	901
⑤ Social activity costs (costs of nature conservation and environmental improvements such as greenification, donations to and support for environmental protection organizations, and activities related to local residents)		0	644
⑥ Environmental damage costs (costs to recover nature and for compensations related to environmental conservation)		9	205
⑦ Other costs related to environmental conservation		4	140
Total		2,963	10,376

- Scope of calculations: Companies and offices listed in the chart below (Business Activities and Environmental Impacts section)
- Period covered: January 1 to December 31, 2022
- Calculation method

1. Calculated using our Calculation Rules prepared with reference to the Environmental Accounting Guidelines (2005 version) of the Ministry of the Environment of Japan.
2. Compound costs that include expenditures for purposes other than environmental conservation are prorated in proportion to their impact on the environment then counted as environmental costs.
3. Investment figures represent budgeted amounts, while expense figures represent actual amounts. Items for which effects could be clearly calculated were calculated in monetary and quantitative units. However, effects that are difficult to quantify, such as risk aversion and deemed effects, are not included.

Business Activities and Environmental Impacts

Scope			Calculation period
Toagosei Group	Toagosei	Plants Nagoya Plant, Yokohama Plant, Takaoka Plant, Tokushima Plant, Sakaide Plant, Oita Plant, Kawasaki Plant, Hirono Plant	One year from January 1 to December 31, 2022
		Research centers General Center of Research and Development (Aichi Prefecture), Institute for Advanced Sciences (Ibaraki Prefecture)	
	Group companies	Aronkasei Kanto Plant (Ibaraki Prefecture), Nagoya Plant, Monozukuri Center (Aichi Prefecture), Shiga Plant, Onomichi Plant	

INPUT	Energy Consumption		Water consumption			
	2021	2022	2021	2022		
	Energy Consumption (crude oil equivalent, thousand kl)	184	189	Water resources (million m³)	57	56

Toagosei Group Production Sites in Japan

OUTPUT	Business Activities		Industrial Waste		Environmental Impacts on Water Resources		Environmental Impacts on Atmosphere		
	2021	2022	2021	2022	2021	2022	2021	2022	
	Production volume (thousand tons)	1,217	1,181	Volume of industrial waste generated (tons)	65,650	65,956	Total effluent volume (million m³)	44	42
				Volume reduced internally (tons)	47,098	45,658	COD (tons)	73	66
				Volume discharged externally (tons)	11,400	13,050	Total nitrogen (tons)	26	24
				Final landfill volume (tons)	78	1,307	Total phosphorus (tons)	2.0	2.0
				Final landfill rate (%)	0.12	2.0	Substances subject to PRTR (tons)	2	2
				CO ₂ (CO ₂ equivalent, thousand tons)	329	353			
				SO _x (tons)	39	40			
				NO _x (tons)	69	71			
				Soot and dust (tons)	6	5			
				Substances subject to PRTR (tons)	44	32			

Safety and Disaster Prevention Initiatives

Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Safety and Disaster Prevention	• Zero explosion or fire accidents	• Zero explosion or fire accidents	★★★★	• Zero explosion or fire accidents
	• Zero serious leakage accidents of harmful substances or hazardous materials	• Six serious leakage accidents of harmful substances or hazardous materials • Revision of definitions of "serious" leakage incidents and government reporting criteria	★	• Zero serious leakage accidents of harmful substances or hazardous materials • Review the work standards to ensure "Know-Why" understanding

Disaster Prevention Meetings

Before manufacturing a new product or changing production methods or facilities, Toagosei holds disaster prevention meetings. At these meetings, the details of plans are discussed from the perspectives of process safety and disaster prevention, occupational health and safety, environmental protection, product safety, and quality assurance, and any issues are addressed.

Disaster prevention meetings are classified into a three-tier hierarchy according to the size and agenda of the meeting: formal disaster prevention meetings, simplified disaster prevention meetings, and disaster prevention manager meetings. These meetings also serve as venues for confirming and recording details to be examined in risk assessments and chemical substance risk assessments.

Disaster Drills

Each business site regularly conducts disaster drills in cooperation with fire departments and other agencies to ensure readiness in the case of an emergency. In recent years, we have also adopted tablet terminals, helmet cameras and audio to communicate on-site circumstances to the task force in real time.

Amid the increase in severe disasters due to global warming, we are devising ways to respond to unexpected situations by adapting drills to each office's circumstances, such as assuming light staffing due to a holiday, or situations for which no scenario has been determined in advance.

Occupational Health and Safety

Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Occupational Health and Safety	• Zero lost-time injuries	• Lost-time injuries: 7	★	• Zero lost-time injuries every month
	• Hidden risk discovery and countermeasures	• Implementation by devising methods at each workplace • Implementation of training to improve hazard prediction	★★★★	• Zero no-lost-time injuries every month • Identification of hazardous material contact inhalation risks and countermeasures

Occupational Health and Safety Management System

Priorities for occupational health and safety (OHS) promotion and key policies and measures are determined at the Group's Sustainability Committee meetings, and we engage in health and safety activities accordingly. Each

business site is raising the level of health and safety by fusing top-down initiatives and bottom-up initiatives from workplaces.

Occupational Accidents

In 2022, seven lost-time injuries occurred throughout the Group, and we did not achieve the target of zero lost-time injuries. Although the number of accidents involving trips and falls is decreasing, lost time injuries, such as broken bones, still occurred. The total number of accidents due to contact with or inhalation of hazardous materials has increased, although a large percentage is minor accidents. In addition, accidents in non-routine operations are on the rise.

In 2023, our goal is to achieve zero accidents every month, and we will renew our commitment to this target on a monthly basis.

Number of Occupational Accidents (Cases)

	Toagosei Group		Partner business sites, others		Total	
	Lost-time injuries	No-lost time injuries	Lost-time injuries	No-lost time injuries	Lost-time injuries	No-lost time injuries
2017	1	8	0	5	1	13
2018	2 (3)	13	0 (1)	5	2 (4)	18
2019	2 (1)	12	4	4	6 (1)	16
2020	4	6	2	2	6	8
2021	1 (1)	8	0	2	1 (1)	10
2022	4 (1)	7	2	1	6 (1)	8

(Figures in parentheses indicate the number of accidents at overseas business sites.)

Product Safety

Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Product Safety	• Response to domestic and overseas laws and regulations	• Response to domestic and overseas chemicals-related laws and regulations	★★★★	• Response to domestic and overseas chemicals-related laws and regulations
	• Expansion of the scope of usage of the chemicals management system	• Improved versatility of the chemicals management system	★	• Appropriate response to requests for submission of SDS and various survey forms
	• Ensuring of preparation and updating of SDS in accordance with GHS	• Response to requests for submission of SDS and various survey forms	★★★★	

Chemicals Safety Management System

At the Toagosei Group, our first task at the product development stage is to conduct a safety examination. We also perform necessary safety tests when making notifications required by laws and regulations when a product falls under the category of a new chemical substance. We also make necessary responses to new substances in the inventory of each country.

At disaster prevention meetings held before test production or scaling up of production, we discuss the safety of materials handled and products, as well as disaster prevention during manufacturing. We check chronic effects as well as acute health hazards, such as the danger of chemical injury, through chemical substance risk assessments and also deliberate on compliance with legal and regulatory requirements, environmental impacts, and other matters.

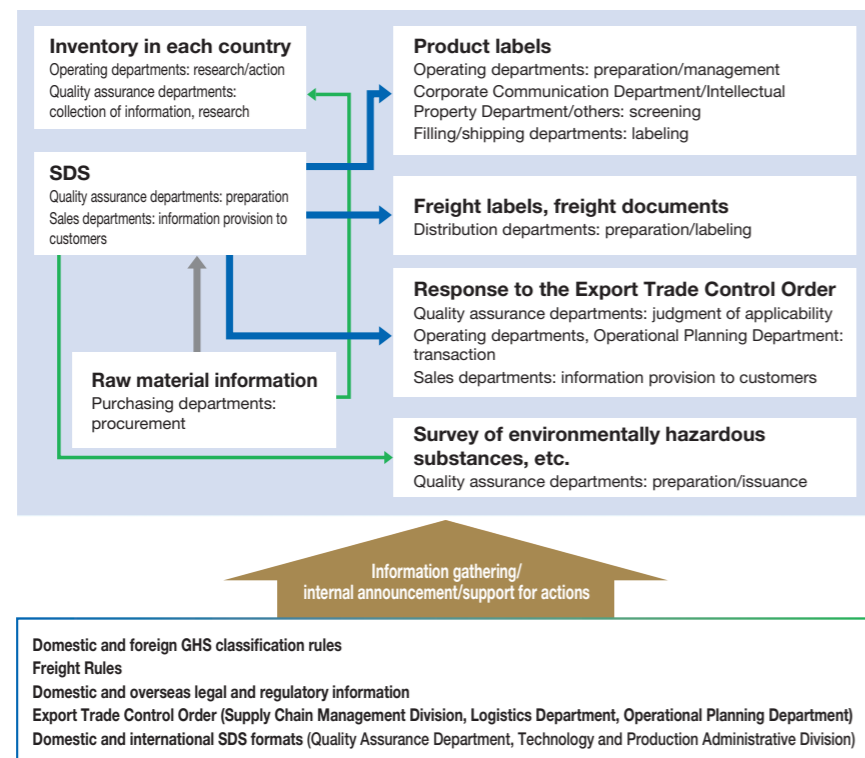
Provision of Safety Information

We provide chemical product safety information using safety data sheets (SDS), product labels, yellow cards, and other means.

SDS are documents prepared for communicating detailed information related to chemical product handling methods and safety. We issue SDS to customers, sales agents, transportation companies, and other companies that handle the Group's products. SDS for some products can be downloaded from the corporate website.

The mandatory provision of SDS and product labels in national languages in accordance with Globally Harmonized System of Classification and Labeling of Chemicals (GHS)* has spread in various countries around the world including Japan. We are creating and updating SDS and product labels as needed in response to such trend.

Many departments are involved to manage product information and appropriately communicate it to the supply chain. Members of the Technology and Production Administrative Division and the Supply Chain Management Division are engaged in information gathering, internal education, response to consultation and other tasks to support implementing departments.



Quality Assurance

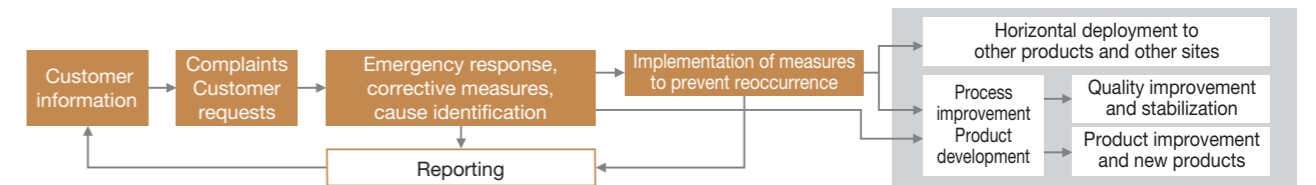
Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Quality Assurance	• Regularization of quality risk assessment and FMEA promotion • Standardization of measures to prevent accidents and leakage	• Revision of relevant standards, promotion of risk assessment	★★★★	• Strengthening of quality risk evaluations
		• Promotion of reflection of measures in standards	★★★★	• Formulation and implementation of effective measures to prevent accidents and leakage

Quality Assurance System

Based on its quality policy to “enhance quality management and offer products and services that satisfy our customers,” the Group is working to achieve ongoing improvement of the management system. In addition, we promote various activities by setting quality objectives such as improving the level of raw material management, strengthening manufacturing process control, improving the quality of analytical work, and utilizing the in-house Quality Assurance Liaison Committee.

Initiatives in Response to the Voice of the Customer

We are striving to appropriately and quickly respond to complaints and submit delivery specifications and various documents. Quality assurance departments of our plants are responding to opinions of customers from their perspectives. As a result, submission of various documents to customers has become expedited year by year. Considering customer complaints and requests as opportunities for product improvements, process improvement, work improvement, and facilities upgrades, we enhance the level of quality management from a broad perspective.



Safety Management during Product Transport

Item	P	D	C	A
	Targets for 2022	Results in 2022	Achievement	Targets for 2023
Physical Distribution Safety	• Reduction in the number of physical distribution problems	The target for reduction of logistics complaints was achieved, but the target for troubles was slightly exceeded.	★★	• Reduction in the number of physical distribution problems

Safe Transport and Delivery Promotion Structure

Each business site organizes conferences with carriers to promote safe transport and safe delivery. The business sites set annual targets at the conferences and confirm the progress and whether rules for carrying out safe operations are being observed through meetings and safety patrols.

In the case of new clients, the business sites confirm clients' receiving facilities in advance to establish the system for safe delivery. If a carrier requests improvement of a client's receiving facility, we ask the client to make those improvements.

Emergency Response Training

In the disaster prevention training periodically conducted at each business site, drills in preparation for the occurrence of leakage accidents are conducted with the participation of carriers as well. Drills include confirmation of emergency contact procedures, methods to secure safety and evacuate, etc.

We also provide education on the properties and toxicity of transported products, as well as on emergency measures upon leakage, and inspect and maintain the emergency materials placed on vehicles, etc. We have also prepared emergency equipment and materials at business sites and put in place a system for promptly forming and dispatching emergency response teams.

Horizontal Deployment of Problem Information

The logistics departments undertake sharing and horizontal deployment of information at all plants by registering problems in shipping and transport in a database. Each business site regularly holds meetings with carriers to share risk information such as examples of actual accidents and close calls in order to raise awareness for the elimination of serious troubles.

Environmental Initiatives

Efforts in Alignment with the Recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD)

In the process of manufacturing various chemical products, Toagosei uses large amounts of electric power and fuel, and emits greenhouse gases (GHG). On the other hand, we also offer many products that are making a contribution with respect to climate change in fields such as mobility, electronics and critical infrastructure. Responding to climate change is an important aspect of management, both in terms of reducing GHG emissions and making a difference with our products, and in June 2019, we endorsed the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).

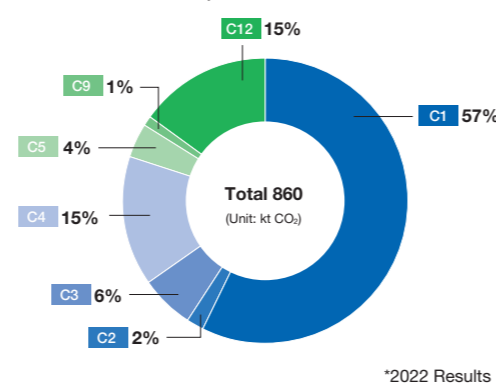
In accordance with TCFD guidelines, we manage GHG emissions, including those in our supply chain, in three categories (Scope 1 to 3).

Scope 3 categories

Upstream	Toagosei	Downstream
Scope 3 C1: Purchased goods and services 493 kt-CO ₂ C2: Capital goods 16 kt-CO ₂ C3: Energy activities not included in scope 1 or scope 2 53 kt-CO ₂ C4: Transport and distribution (upstream) 125 kt-CO ₂ C5: Waste generated in operations 35 kt-CO ₂ C8: Leased assets (upstream) Not applicable	Scope 1 35 kt-CO ₂ Emission from use of fuel Scope 2 289 kt-CO ₂ Emission from use of purchased electricity and heat Scope 3 C6: Business trips 0.2 kt-CO ₂ C7: Commuting 0.4 kt-CO ₂	Scope 3 C9: Transportation and distribution (downstream) 9 kt-CO ₂ C10: Processing of sold products Not applicable C11: Use of sold products Not applicable C12: End-of-life treatment of sold products 127 kt-CO ₂ C13: Leased assets (downstream) Below 0.1 kt-CO ₂ C14: Franchise Not applicable C15: Investment Not applicable

*Scope 1 and 2: Production sites in Japan; Scope 3: Toagosei Co., Ltd. (non-consolidated)

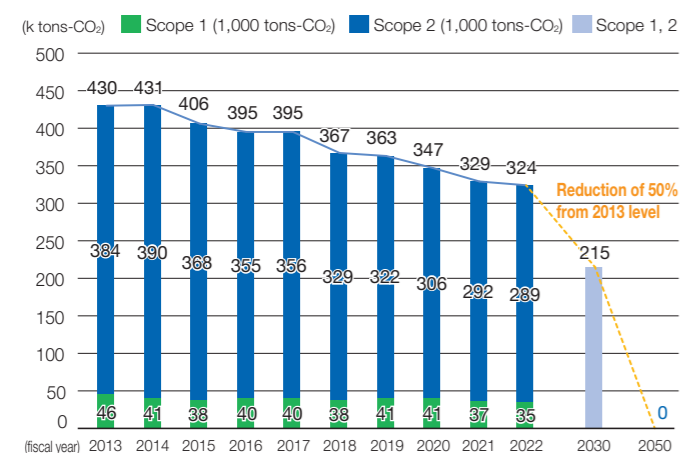
Breakdown of Scope 3 emissions



Initiatives to Achieve Carbon Neutrality

We are working to reduce GHG emissions with the goal of becoming carbon neutral (net zero) by 2050. For Scope 1 and 2, our target is a 50% reduction by 2030 compared to base year 2013, and a 25% reduction by 2022 compared to 2013.

GHG Emissions and Reduction Targets (Scope 1 and 2)



To achieve carbon neutrality, our Group has not only been working on energy conservation and efficiency improvements in our existing manufacturing processes, but have also begun specific studies and deliberations on various measures to achieve our goal of owning our own renewable energy power generation.

Introduction of solar power generation: We are moving ahead with plans and specific studies to install mega solar power generation systems at our plants in Nagoya, Takaoka, and Tokushima for in-house consumption.

Introduction of small-scale hydroelectric power generation: We will construct our first small-scale hydroelectric power plant in Nagano Prefecture. Development is currently progressing toward completion in 2026. The plan is to increase the number of small hydroelectric power plants in the future.

Introduction of biomass power generation: Having conducted studies on procurement of raw material chips and facilities design, we are working on a feasibility study.

Case Studies

Received the Environment Minister's Award for Climate Change Action

The hydrogen station at our Tokushima Plant received the Minister of the Environment Awards for Climate Action 2022 in the Advanced Introduction and Positive Practice Category for being the first hydrogen station in Japan to integrate the production and supply of locally produced hydrogen.

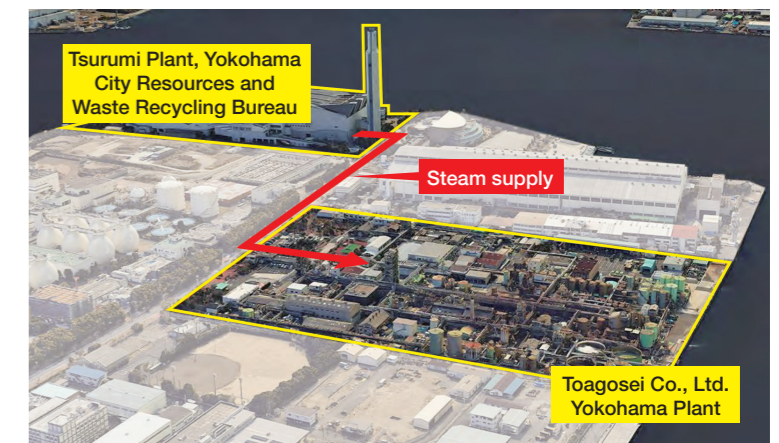
The award was received jointly with Tokushima Bus Co., Ltd., which started operation of two hydrogen (fuel cell) buses on its routes, the first in the Chugoku and Shikoku regions. The award recognizes our efforts to contribute to the decarbonization of the transportation sector and to promote the use of hydrogen in Tokushima Prefecture, leading the way in Japan.



Steam utilization at the Yokohama Municipal Waste Incineration Plant (in cooperation with local communities)

The Yokohama Plant uses steam from a boiler fueled by city gas as the plant's heat source. We conducted a feasibility study jointly with the City of Yokohama to see if we could effectively utilize steam generated from incinerating waste at the nearby Tsurumi Plant of the Yokohama City Resources and Waste Recycling Bureau as a heat source for the plant.

As a result, we expect to reduce CO₂ emissions by 10,000 tons per year. Detailed design of this project will begin in FY2023.



Fuel Switching

We are promoting the use of low-GHG fuels in our plants. In 2021, class A petroleum and liquefied petroleum gas (LPG) used as boiler fuel at the Hirono Plant were replaced with liquefied natural gas (LNG), which emits less CO₂.

In 2022, the Takaoka Plant also upgraded its boilers and converted boiler fuel from class A petroleum to city gas.



LNG Satellite Station for Hirono Plant Boilers



Takaoka Plant LNG Boiler Building

Human Resources Initiatives

Employee discussion meeting

As telework use increases, each employee discovers their easiest way to work. We will further expand work-style options to make the company a place where all employees can fulfill their potential.



Tomoka Yamada

Joined the Company in 2012. Ms. Yamada is responsible mainly for technical development of inorganic-related products in the Productive Technology Group, Manufacturing Department, and Technology Development Department at the Nagoya Plant. She used the Leave System for Spouse Relocation Overseas in 2017 and took childcare leave in 2017 and 2020.

Aki Higashitani

Joined the Company in 2006. Ms. Higashitani is responsible for General Affairs and Legal Affairs, Yokohama Plant Office Management Section, Human Resource Development, etc. She currently works as a manager in the Human Resources Department of the Group Administrative Division.

Masahiro Taima

Joined the Company in 2016. Mr. Taima is mainly in charge of production innovation in the Nagoya Plant Manufacturing Department and Technology and Production Administrative Division. In 2022, he was transferred to the DX Promotion Department, Corporate Strategy Division, and in the same year, he took childcare leave (for his first and second children). He currently works in the DX Planning Section of the Information System Department.

Before the COVID-19 pandemic, telework use was limited, although there was an environment where people could discuss their work styles

Higashitani Ms. Yamada is a working mother who has been in charge of technology development at the Nagoya Plant since she joined the company.

Yamada In 2017, I accompanied my husband on his assignment to the United States and gave birth to our first child there. At the time, our company did not have a leave of absence system, so when I told my supervisor about the situation, the Human Resources Department responded flexibly and set up the Leave System for Spouse Relocation Overseas. I became the first one to use the system. It was really helpful to have an environment where I could ask for help. I ended up living in the U.S. for a year and a half before returning to Nagoya and going back to work in 2018. Later, after the COVID-19 pandemic began, I gave birth to my second child, and the working environment changed dramatically compared to when I had my first child.

Higashitani The COVID-19 pandemic led to the widespread adoption of systems and awareness regarding flexible work styles. The telework system had existed for some time and was available for productivity enhancement purposes, but in practice, there was an atmosphere of reluctance to apply for the system unless childcare or nursing care was the reason.

Yamada There was a basic atmosphere of it being unavailable for use, especially in the manufacturing department, but after consulting with my workplace during my second pregnancy, I was able to take advantage of working from home. Shortly thereafter, with COVID-19

infections spreading, there was an atmosphere that discouraged pregnant women from coming to work for the time being.

Higashitani Starting in 2021, telework eligibility was expanded, now up to 10 days per month, and it can even be taken in hourly increments. In addition, we introduced annual leave by hourly increments and a Super-Flex System that does not set specific mandatory work hours.

Taima We had twins right after I was transferred to the Corporate Strategy Division, and I was worried about whether I would be able to take childcare leave, but when I discussed this with my supervisor, he readily agreed. For two weeks, I was extremely busy with baby formula and diaper changes, but it was very fulfilling. I was able to sense their growth day by day, like when they would make sounds, or turn their heads toward me.

Yamada That's right, those moments when you can see your infants growing so fast are a precious time.

Taima If I had left it to my wife alone from the beginning, I would have felt like I was just a visitor. Because I took part in raising our children from birth onward, even now I feel like we are raising our kids together, instead of me being just a helper. Also, when I returned to work, everyone was solicitous about it, asking, "How was your childcare leave?" Looking at my colleagues at work, I sense that the environment is becoming more conducive to taking childcare leave.

Improving work-life balance without compromising productivity by reforming work styles

Yamada In my case, teleworking has been a great benefit.

We can apply for non-working hours, which makes it possible to leave in the middle of telework to go to the hospital, etc. In fact, my husband is currently posted overseas, so I do the childrearing alone on weekends as well. If telework and non-working hours were not allowed, it might become difficult to take care of government-related procedures, or even manage my own health.

Taima I became aware of the need to use my time more efficiently after the birth of my children. Of course, I have always been aware of this, but I now think about how I have to be more efficient than ever before, and to balance my family and work.

Yamada I have also thought a lot about how to improve the efficiency of my work. And I now apply to my work the "let's get this done before the child cries" habit of thought that I developed while raising my child. In my generation, many women still left their companies when they get married, but I myself never considered quitting permanently because of childbirth to be an option. I wanted to continue working for the company. Before my experience, I thought that anyone could balance work and family life, but when I actually tried it, I realized that it requires a great deal of individual ability and effort, and without support from the company, it is very difficult to develop a career while raising children.

Higashitani Many continue to use telework even now although the COVID-19 pandemic is subsiding. You may be more productive at home when you want to concentrate on your work or review it, and you are able to attend briefings on system changes or the introduction of new system tools from home. Considering the commuting time included, it has become much easier to balance your personal life, and I feel that work efficiency has improved as a whole.

Taima I also use telework about one day a week. Conversely, there are those who do not use it at all, and when I talk to them, I hear many say that it makes them feel unable to readily ask others about things, or that they have difficulty communicating. That is one of the challenges of telework. Even in workplaces where many people are involved, there is a movement to remove mental hurdles to communication by introducing chat tools, etc., and to create an environment in which teleworkers can communicate without any inconvenience.

Each and every employee is important and necessary to the company, and we will deliver this message to our employees through system reforms

Yamada When I joined the company, there were very few female employees in the plant, but with the introduction of equipment that is easier for women to operate and other on-site reforms, it is now becoming more commonplace for female employees to work in the factory. At my workplace, a woman in the operations department will soon be returning

to work after childcare leave, and since it is difficult to work shifts while raising a child, I am trying to figure out what kind of work schedule would be best for her.

Higashitani We have made ongoing efforts to expand work areas for women. In 2015, we began assigning women to the manufacturing floor as well as to shift work, but consideration must be given to their work patterns, depending on their circumstances, such as during childcare.

Yamada We need to make sure that a feeling of inequality does not arise among employees who continue to work in shifts.

Higashitani At the Human Resources Department, we think that we must do more than just create systems. We must also follow up closely to create an environment that is easy to use and easy to work in according to the circumstances of each workplace. On top of that, we must create an environment that supports those who are willing to take on more challenges. Since 2022, we have introduced challenge goals in the evaluation of both career-track and general positions. The idea is to change the horizontal mindset of the past and encourage employees to set their own high goals, then to evaluate them in taking on those challenges.

Yamada I believe that employee motivation comes from this system and the other aspects of the work environment in which employees are given great jobs and opportunities even while raising children.

Higashitani It is not often that a message to the effect that, "You are important and necessary to the company," is conveyed in such a clear manner. By listening to employees, creating a comfortable work environment and increasing opportunities for growth, we can make them feel needed and valued by the company. I believe that having such systems in place has a significant impact on employee motivation.

Taima Right now, my wife and I are both working for the Company, and both of us want to continue our work. My wife's childcare leave will end soon, and she has already said that she wants to work as soon as possible and stay connected to society. This is probably because true fulfillment cannot be attained without enrichment not only in personal life but also in work. I believe that these kinds of efforts by the company will create a virtuous cycle in society, where both husbands and wives are provided with a comfortable working environment and opportunities to grow in their careers.

Yamada If you let yourself get swamped with childrearing, there's nowhere to turn, so it's important to achieve work-life balance from the opposite of the usual perspective as well. The travel for today's dialogue was also very difficult to prepare for, including arranging for childcare, but it was a great refreshment for my mood.

Amid a shrinking workforce, the spread of remote work, changing values, and diversity, the business management environment is changing at a dizzying pace. In addition, as concerns over human capital intensify, companies are being asked how to draw out the abilities of each employee and increase corporate value.

In the future, more employees are expected to want to continue working as long as possible, even if there are restrictions on working hours and available workplace locations. Aiming to create an environment where diverse human resources can work comfortably and enthusiastically while making full use of their abilities, we will continue to promote and enhance the system and engage in educational activities such as promoting understanding of changes in employment awareness.

Human Resources Initiatives

P	D	C	A
Targets for 2022	Results in 2022	Achievement	Targets for 2023
Maintenance of employment rate of persons with disabilities of 2.4% or higher	Employment rate of persons with disabilities: 2.55% (As of Saturday, December 31, 2022)	★★★★	Maintenance of employment rate of persons with disabilities of 2.4% or higher
Promotion of women's participation and advancement (Period: Five years between April 1, 2021 to January 1, 2026) • Female hiring ratio: 30% or more among new career-track employees, 20% or more among regular service employees • Ratio of female managers: 5% (13 as of January 1, 2026)	Female hiring ratio: 22.5% among new career-track employees, 27.7% among regular service employees (As of Friday, April 01, 2022) Ratio of female managers: 3.7% (as of January 1, 2023)	★★	Promotion of women's participation and advancement (Period: Five years between April 1, 2021 to January 1, 2026) • Female hiring ratio: 30% or more among new career-track employees, 20% or more among regular service employees • Ratio of female managers: 5% (13 as of January 1, 2026)
Promotion of the prevention of lifestyle-related diseases • Rate of employees undergoing thorough health screening: 100% • Rate of employees maintaining desirable weight: 70% • Smoking rate: 23% (achieve 15% by 2026) Promote initiatives to make exercise a habit • Ratio of employees with regular exercise habits: 40%	• Rate of employees undergoing thorough health screening: 76% • Rate of employees maintaining desirable weight: 61.8% • Smoking rate: 24.9% • Ratio of employees with regular exercise habits: 30.4%	★★	Promotion of the prevention of lifestyle-related diseases • Rate of employees undergoing thorough health screening: 100% • Rate of employees maintaining desirable weight: 70% • Smoking rate: 23% (achieve 15% by 2026) Promote initiatives to make exercise a habit • Ratio of employees with regular exercise habits: 40%

Our approach to human investment

In today's rapidly changing business environment, productivity improvement and innovation creation are essential for companies to survive. The Toagosei Group believes that the source of value creation is human resources, and we are working to develop human resources, promote diversity, enhance engagement, and promote health management with the aim of realizing an organizational culture in which employees and the company grow together.

Under the 2025 Medium-Term Management Plan (2023-2025), we will develop human resources who can accurately grasp changes in the environment and take on challenges, think independently and act independently. We will actively invest in human resources to create an environment in which diverse human resources can demonstrate their abilities and experience success and growth, leading to sustainable value enhancement.



Securing and developing human resources

Recruiting Activities

The Group seeks people with the enthusiasm and tenacity to think and tackle issues independently and see tasks through to the end.

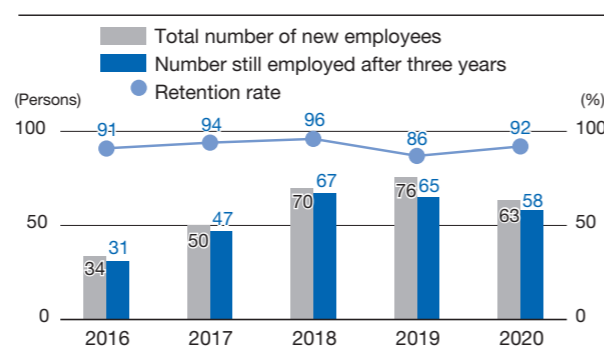
In selecting recruits, we place importance on interviews and consider whether people are able to contribute and flourish in the Group a more important judging criterion than academic qualifications or past track record. In addition, we actively hire both new graduates and experienced personnel to lead our growth strategy.

Human Resource Development Policy and System

In order to realize our Medium-Term Management Plan, we need a tenacious organization that can respond flexibly to changes in the environment. We are advancing human resource development and organizational support measures to strengthen front-line field capabilities in order to adapt to the coming era.

In order to develop talented and motivated human resources who will be responsible for the company's growth, we offer a variety of educational programs including level-specific training, selective and elective training, distance education, and e-learning.

New Graduate Recruit Retention Rate (after Three Years) for the Previous Five Years



Development of Young Employees

We have designated the first three years of employment as a priority period for cultivating junior employees, a period during which the focus is on developing human resources who can think independently, involve others, and act autonomously. Through level-specific training, we aim to effect step-by-step improvements in employee's fundamental skills of working adults, and other abilities necessary to perform their duties.

Working closely with colleagues who joined Toagosei at the same time and engaging in amicable rivalry encourages better behaviors and self-growth.

Specialized education

We have specialized technical education staff that pursue education across the Group.

Technical education includes an interactive program that enables participants not only to acquire basic knowledge, but also to exchange views about the workplace equipment they choose to study. The introduction of a simulator for process education has enabled trainees to learn about process principles, in addition to operational methods. By offering simulated operation similar to the behavior of an actual plant, this training increases a trainee's analytical ability and response capability, such as in detecting abnormal signs, performing operation in the event of abnormality and in detecting their causes.

In health and safety training, we are developing personnel who ensure safe and stable operation and promoting the handing-on of technologies and skills by enhancing safety education including experience-based training and hazard prediction training.

Self-development

To enable each employee to work autonomously at acquiring skills, the Group offers distance education, e-learning courses, and open seminars that contribute to specialized knowledge acquisition and development of individual skills in areas such as basic business abilities, management skills, and job-specific expertise.

To support employee self-development, we have an assistance program under which the company pays for the cost of attending these courses.

Furthermore, we encourage employees to improve their capabilities by obtaining official accreditations through our assistance program for qualification acquisition.

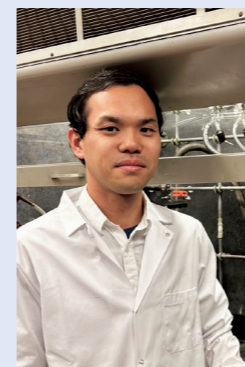


Hands-on health and safety training

Voice

Surprise and delight

TK
Overseas Research Student (Assistant Manager)



Research at the University of Florida

Through the Overseas Research Student Program, I have been conducting research activities at the University of Florida in the U.S. since December 2022. When using this program, it is important to have a personal desire to conduct research abroad, and it is necessary to move ahead on your own with procedures like selecting a theme, negotiating with the host university, and making travel arrangements. It is also important to be able to enjoy the process, and I feel that our company has an environment that respects the individual will of people like this.

Since going abroad, I've often been surprised by the differences in culture and values from those of Japan, and I am delighted every day by the freshness of this experience. The massive amount of products on display on the spacious sales floor of a supermarket in town gives a sense of the sheer size of the U.S. market.

The university is vast, and even has a stadium and a golf course. The number of students is very large, and my laboratory has students from various countries and backgrounds. I also feel that each of them has a clear idea of what they want to experience, what they can do, and what they intend to do. Rather than professors teaching students top-down, students are already discussing and acting spontaneously as researchers on an equal footing. I get a lot of inspiration from them as well.

Three months have passed since I went overseas, and I have gradually made some progress in my research and have gotten to know the members of the laboratory. They are all very competent as well as being well-mannered persons. I will endeavor to gain much knowledge and experience not only through my research activities but also through my interactions with them and my daily life.

Diversity Promotion

Global Human Resources

As we accelerate our overseas expansion, we believe it is essential to develop global human resources and encourage their active engagement.

In expanding our Group's production and sales bases around the world, local hires will be key to the development of our overseas bases. As a member of the Group, we are working to share our corporate philosophy and foster a sense of unity in an effort to increase loyalty and motivation.

For employees in Japan, we also provide support for

their efforts to improve their language skills, since doing so is essential to implementing business globally. In addition, in order to instill a sense of the need for globalization and cross-cultural understanding throughout the organization, we are actively working to have young employees experience work overseas, and we expect that increasing the number of personnel with overseas business experience will lead to improved corporate performance over the medium to long term.

Column

Training for Local Hires

Toagosei (Thailand) Co., Ltd. conducted training for local hires in 2022. Participants reaffirmed the Group's corporate philosophy and discussed how to act to make their workplace a gathering of people full of vitality and energy.



Toagosei Thailand employees listening to a message from the President of Toagosei

Action Plan Based on the Act on Promotion of Women's Participation and Advancement in the Workplace

Since 2016, we have established the promotion of women's empowerment as one of our key CSR goals, and have been working to create a system that enables women to fully exercise their abilities. Our general business owner action plan under the Act on Promotion of Women's Participation and Advancement in the Workplace extends for five years from 2021, and includes the following goals that we have set and are working to achieve.

- Annual female hiring ratio of 30% or more among new career-track employees, 20% or more among general service employees
- Increase in the percentage of female managers to at least 5% by January 1, 2026
- Retention rate of at least 90% as of March 31, 2026 for new female hires in general service employment

In addition, to create an environment in which diverse human resources can play an active role regardless of gender, we will conduct training to raise awareness in the organization and hold in-house social events for female employees.

Greater Choice of Workplaces Where Women Can Display Their Capabilities

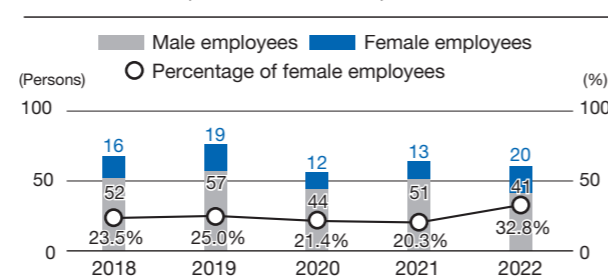
Since 2015, Toagosei has been assigning women to workplaces at manufacturing sites and working to expand the job categories available to women. Believing that a women-friendly workplace is also friendly to all workers, we are striving to reduce the workload and improve workplace environment.

For example, an automatic packing robot was introduced for packing heavy items, and valves located at high places were relocated to lower positions and replaced with valves that are easier to operate. We are also working on measures to address heat and cold at work sites.

Active senior employees

In 2013, the Group extended the mandatory retirement age from 60 to 65 by introducing a system for retirement at 65. In order to support even more active and autonomous career development among senior human resources, we provide career training for personnel in their 50s. During the training, participants reflect on their past experiences, reconfirm their values, strengths and weaknesses, and design an ideal self they aspire to become in the future.

Employment Rate of Women among New Graduates in Past Five Years (consolidated basis)



Employment of Persons with Disabilities

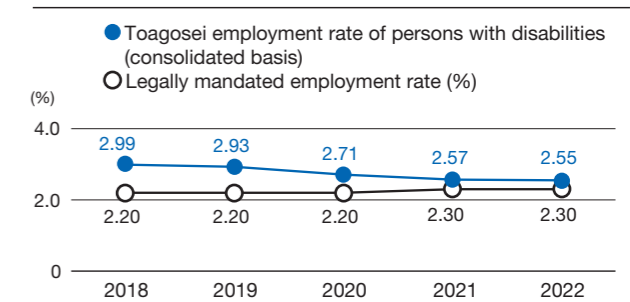
Our Group includes 49 people with disabilities, ranging broadly in age from their 20s to 60s, and working in 36 departments across the country.

In order to support the independence of people with disabilities, we are working to expand their employment, and as of the end of 2022, the employment rate of people with disabilities across the Group as a whole was 2.55%.

In addition to promoting the hiring of people with disabilities, we are also improving the working environment by installing ramps and multipurpose restrooms in some of our facilities.

We will continue to strive to create a workplace environment where diverse human resources, including people with disabilities, can work with peace of mind.

Employment rate of persons with disabilities in the last 5 years



Initiatives to Improve Engagement

Promotion of Work-life Balance

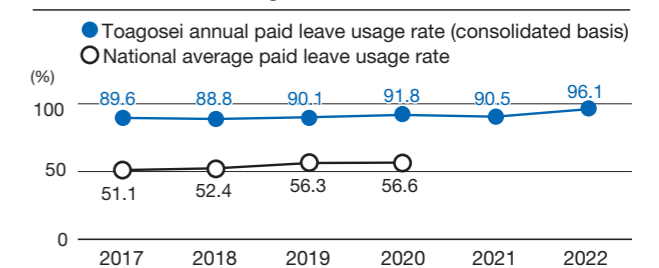
Our Group has striven to achieve work-life balance based on the belief that when employees spend their days feeling fulfilled in both their personal and professional lives, they can apply their abilities to the fullest, which leads to growth and development of our business.

While curbing prolonged working hours, we encourage employees to actively take their annual paid leave, and the Group's annual paid leave usage has remained at a high level since 2016.

Furthermore, we have established various systems to promote flexible work styles among employees in the belief that doing so will help foster an autonomous corporate culture and improve productivity. The teleworking system now allows employees to work from home or other Company-approved locations in one-hour increments for up to 10 sessions per month.

In January 2021, we also introduced a flextime system that does not specify mandatory work hours (core time), and a paid leave system that allows employees to take their paid leave in one-hour increments.

Annual Paid Leave Usage



Support in balancing work with parenting/nursing care

To create a fulfilling working environment for a diverse workforce, we commit ourselves to supporting employees in balancing work with parenting and/or nursing care. Since 2021, we have conducted an annual employee awareness survey on job satisfaction and work environment congeniality. In January 2022, we expanded our support systems for balancing work and home life in order to create an environment in which more employees can play an active role.

To help employees balance work and parenting, we changed our system to enable employees to extend their childcare leave until the end of March after their child reaches the age of three if they are unable to enroll their child in a daycare center. Furthermore, eligibility for shortened working hours for childcare has been expanded to include children in the third grade of elementary school and younger.

Regarding support for balancing work and nursing care, the upper limit on the period for shortened working hours for nursing care has been abolished, and the number of days granted for nursing care leave has been increased to 20 days per year. In addition, we have established a new financial support system under which the Company provides a certain percentage of remuneration for a portion of the nursing care leave period.

Leave System for Spouse Relocation Overseas and Reentry System

Toagosei has introduced the Leave System for Spouse Relocation Overseas, which allows leave of up to three years for employees accompanying their spouses on overseas assignment. It enables us to flexibly accommodate employees' family situations, and had been used by two employees as of 2022.

We also have a Reentry System that allows people who wish to reapply for employment with the company to register as candidates for reemployment after they have resigned due to family circumstances, such as transfer of a spouse, childcare, or nursing care. This helps provide an environment in which employees can continue their careers.

Health Management Promotion

➤ Promotion of health management

We are promoting efforts to maintain and improve the health of our employees because we believe that creating a vibrant and creative organization in which each and every employee can work in comfort and with vitality is an investment that will eventually lead to the growth of the company. Through these efforts, we aim to achieve zero occurrence of long-term absences from work (three consecutive months or more) due to illness by 2025.

To reduce the risk of illness among employees, we have established a Health Management Promotion System in cooperation with the health insurance association, and are implementing the PDCA cycle for health measures.

● Obtained White 500 certification

In recognition of our various health management initiatives, Toagosei was certified as a White 500 organization under the Certified Health & Productivity Outstanding Management Organization Recognition Program for the fifth consecutive year. This program is implemented by the Ministry of Economy, Trade and Industry (METI) in collaboration with Nippon Kenko Kaigi (the Japan Health Council), which is comprised of leaders from the business community, medical-related organizations, and local governments, to recognize corporations that are implementing particularly excellent health management practices.

We will continue to strengthen our health management practices as we regard the physical and mental health of each employee to be an important asset.



➤ Promotion of disease prevention

We focus on the prevention of lifestyle-related diseases to help employees reduce the risk of disease and work with vigor and vitality.

In addition, the health management system is being used to increase the sophistication of the health management system by promoting appropriate health guidance through company-wide monitoring of employee health status and identification of issues by health staff. In our efforts to promote smoking cessation, we display posters promoting smoking cessation in our offices, promote awareness by publishing stories of successful smoking cessation in our in-house newsletters, and hold smoking cessation seminars for management staff. In mental health measures, we renewed our web-based health consultation service, which allows employees to consult anonymously with their healthcare providers.

➤ Health maintenance and promotion

A company-wide walking event was held with the aim of establishing regular exercise habits. Teams that include various generations also help to invigorate communication within the workplace. In addition, the company provides financial support for the use of gymnasiums and other recreational activities to promote health and wellness in local communities.



Smoking Cessation Seminar

Community Initiatives

Enhancement of Contributions to Society and Local Communication

➤ Activities for Social Contribution, Aesthetic Maintenance and Conservation of Biodiversity

Toagosei Group conducts activities for social contribution, aesthetic maintenance, and conservation of biodiversity, including volunteer cleanups, zoo sponsorships, and sports support.

In 2022, we participated in the Kawasaki Zero-Emission Industrial Complex Formation Promotion Council* established by Kawasaki City, the municipality in which our Kawasaki Plant is located, to promote carbon neutrality in the region.

The main results for 2022 are shown in the table on the right. We have been able to conduct gradual but positive activities at each of our offices as we did before the COVID-19 pandemic.

*An organization that aims to organize a public-private partnership platform for the formation of a carbon-neutral complex and carbon-neutral port in the Kawasaki waterfront area (Port of Kawasaki), and to create projects through collaboration among companies.

➤ Communication with local communities

As the COVID-19 pandemic has led to voluntary restraints on community activities by large groups of people, we are taking steps to prevent infectious diseases while organizing events such as plant tours, school visits and on-site lectures, and making donations and contributions for the development of the next generation.

In 2022, Toagosei America Inc. participated in a scholarship assistance program at nearby West Jefferson High School and presented scholarships. This program donates scholarships to students who have achieved excellence in academics, sports and cultural activities to help them pay for the cost of attending college. Through these activities, we will contribute to communication with local communities and the development of children who will be responsible for the future.



Presentation of plaques to scholarship recipients (from left: Mark [Sr. Sales Manager], Madelyn, Aaron, Terry [Plant Manager])

Results in 2022

Site	Activity contents
Site in Japan	Local and neighborhood cleanup activity
Nagoya Plant	Higashiyama Zoo sponsorship and donation of equipment to the Social Welfare Council
Head Office	T-League sponsorship, support for Tohoku House, support for the MINATO City Half Marathon 2022 in Tokyo's Minato Ward, and donations to the Children's Future Support Fund (Kodomo no Mirai Oen Kikin) and the Ashinaga Foundation
Kawasaki Plant	Participation in the Kawasaki Zero-Emission Industrial Complex Formation Promotion Council
Hirono Plant	Iwaki FC Partnership Agreement

Results in 2022

Site	Activity contents
Site in Japan	Classes on crafts for children and repair support for parents
Nagoya Plant	Held a local softball tournament, exhibited at the Minato Ward Citizens' Festival (craft class), cooperated in investigations by the Minato Police Station
Yokohama Plant	Educational training on chlorine handling for active firefighters
Takaoka Plant	Special career development lecture for students at the University of Toyama
Tokushima Plant	Hydrogen station tour and volleyball tournament at company-owned gymnasium
Sakaide Plant	Factory tour by Sakaide Technical High School students
Hirono Plant	Summer Internship, National Institute of Technology, Fukushima College
Toagosei (Thailand) Co., Ltd.	Participation in a tree-planting event in honor of Her Majesty Queen Sirikit, organized by an industrial park and others (proceeds from the event were donated to a hospital)
Toagosei America Inc.	Participation in a scholarship assistance program at a nearby high school
Toagosei (Zhangjiagang) New Technology Co., Ltd.	Special education school visits
Toagosei (Zhuhai) Limited	Donation of books to children's facilities in Zhuhai

Directors (As of March 30, 2023)



① Mikishi Takamura

President and Representative Director

April 1980 Joined the Company
March 2010 Director of the Company
Since November 2015 Current Position

② Susumu Miho

Vice President and Representative Director
General Manager, Corporate Strategy Division

April 1984 Joined the Company
March 2018 Director of the Company
Since January 2023 Current Position

③ Masahiro Kimura

Director, General Manager, Technology and
Production Administrative Division and
General Manager, Research & Development
Administrative Division

April 1986 Joined the Company
Since March 2021 Director of the Company

④ Taizo Serita

Director, General Manager, Group Administrative
Division
General Manager, Human Resource
Development Department, Group Administrative
Division

April 1985 Joined Aronkasei Co., Ltd.
Since March 2022 Director of the Company and
Current Position

⑤ Hidenori Kobuchi

Director, General Manager, Supply Chain
Management Division
General Manager, Head Office Sales Department

April 1988 Joined the Company
Since March 2023 Director of the Company and
Current Position

⑥ Hidetoshi Furukawa

Outside Director

March 2022 Director of the Company
Main concurrent positions: Outside Director,
Isetan Mitsukoshi Holdings Ltd.; Chairman, Kobe
City Property Research Foundation

⑦ Masahiko Yasuda

Outside Director
Audit and Supervisory Committee Member

Since March 2019 Director (Audit and Supervisory
Committee Member) of the Company
Main concurrent positions: Certified Public
Accountant (Masahiko Yasuda Certified Public
Accountant Office), President and Representative
Director of Benedi Consulting Co., Ltd.

⑧ Yoshitaka Suzuki

Director
Audit and Supervisory Committee Member

April 1982 Joined the Company
March 2017 Director of the Company
Since March 2022 Director (Audit and Supervisory
Committee Member) of the Company

⑨ Kiyoko Ishiguro

Outside Director
Audit and Supervisory Committee Member

Since March 2019 Director (Audit and Supervisory
Committee Member) of the Company
Main concurrent positions: Attorney at Law
(Noda Memorial Law Office), Outside Auditor of
TORAJI Corporation, Outside Director of Nippon
Seiro Co., Ltd.

⑩ Yuichiro Mori

Outside Director

Since March 2021 Director of the Company
Main concurrent positions: Attorney (Jones Day
Law Offices, a foreign law firm), Supervisory
Director at DREAM Private REIT Inc.

⑪ Takashi Kato

Outside Director

Since March 2023 Director of the Company
Main concurrent positions: Professor, Department
of Chemistry and Biotechnology, School of
Engineering, The University of Tokyo; Deputy
Director, Research Center for Water Environment
Technology, Graduate School of Engineering,
The University of Tokyo; Director, Asahi Glass
Foundation

⑫ Nobuhiko Takano

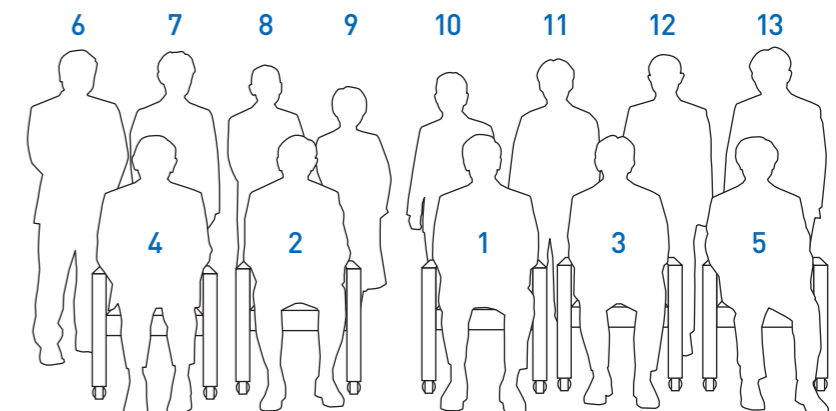
Outside Director
Audit and Supervisory Committee Member

Since March 2018 Director (Audit and Supervisory
Committee Member) of the Company
Main concurrent positions: Certified Tax Accountant
(Nobuhiko Takano Tax Accountant Office), Outside
Auditor of NICHIAS Corporation

⑬ Koichi Danno

Outside Director
Audit and Supervisory Committee Member

Since March 2020 Director (Audit and
Supervisory Committee Member) of the
Company
Career Highlights: (Former) Director,
Sumitomo Mitsui Banking Corporation;
(Former) President and Representative
Director, SMBC Friend Securities Co., Ltd.



Message from an Outside Director

We look forward to growth as a player that can make a better impact on society through the power of materials



Yuichiro Mori
Outside Director
Lawyer

— Impression of Toagosei and role as an outside director

Since assuming the position of outside director in March 2021, my impression of the company has been that of a traditional Japanese chemical company that seeks to grow and develop itself in the midst of drastic changes in society, while maintaining solid and stable management. I believe that the role of an outside director is to support the growth and development of the company by providing a multifaceted perspective in these uncertain, unstable, and inscrutable times, and to monitor the company closely so that it can contribute to its diverse stakeholders as a public institution of society. In particular, as an attorney, I participate in board discussions with an awareness of whether the discussions are logically built up and whether they are fact-based.

— Strengths and challenges of Toagosei's Board of Directors

One of the first things that surprised me when I attended our board meetings was that our outside directors speak freely and actively. Our outside directors comprise people from diverse backgrounds, and each one of them expresses his or her thoughts on the agenda based on his or her own experience and knowledge, and also checks the details of the agenda with a keen eye for detail. Each of the directors has demonstrated a commitment to the development of the Company to enhance its corporate value. On the other hand, in order to make full use of outside directors, the Company is also willing to provide them with information to deepen their understanding of the Company's business. There is not the slightest sense that anything untoward is being hidden, and I sense a strong will to develop our company by enriching discussions in an open environment. This transparency, fairness, objectivity, and diversity are the strengths of our corporate governance. One of the challenges is to strengthen the PDCA cycle based on feedback on the application of what was discussed at the board meetings and follow-up on decisions made by the board. I believe that our governance will be further refined by reviewing past decisions and encouraging attempts to use them for future decisions.

— Evaluation of the 2025 Medium-Term Management Plan

Starting this year, we have formulated and are implementing a new 2025 Medium-Term Management Plan, "Leap Forward to the Next 2025." The Medium-Term Management Plan seeks to create a vision of where we want to be in 2030, and is ambitious about generating sustainable profits while helping solve environmental and social issues through our business activities. Since last year, outside directors have also been given the opportunity to actively express their opinions on the Medium-Term Management Plan, including at Board of Directors meetings. I recognize that the Company reflected our various opinions, with the introduction of ROIC from 2023 based on business-by-business BS, for instance, and the creation of the content of the Medium-Term Management Plan with an awareness of internal and external perspectives. In addition, the speed of change in this era of sustainability management, especially in recent years, is only accelerating, and I believe that we, too, are steadily evolving toward sustainable development despite the difficulties of our position as a chemical company. In particular, the emphasis in the Medium-Term Management Plan on the expansion and development of human capital is something that has not been included in such plans before, and it is commendable that the Company is firmly addressing a factor that has recently received increasing attention, especially in management that incorporates ESG factors.

— A word about expectations for the Toagosei Group and the challenges we face

We are a chemical company in a traditional industry, yet we strive to steadily evolve and develop with an awareness of the changing times. While such values and attractiveness of our company can be understood by people within the company, we believe that we have not yet sufficiently communicated them to our external stakeholders, including investors. This is not that we are concerned about the public eye on us, but we hope that if we can further raise the external reputation of our company by having our merits widely recognized, our employees will be motivated to contribute further to the development of our Company, which will lead to a virtuous cycle of further corporate growth.

Corporate Governance

P	D	C	A
Targets for 2022	Results in 2022	Achievement	Targets for 2023
Continue capital policies under the Medium-Term Management Plan	<ul style="list-style-type: none"> Share buyback of 4.3 billion yen in 2022 Consolidated dividend payout ratio of 35.5% in 2022, for a consolidated total return ratio of 69.7% 	★★★	Further strengthening of capital policy based on the Medium-Term Management Plan
Strengthening corporate governance	<ul style="list-style-type: none"> Publication of English translations of financial results summaries and governance reports Website posting of an evaluation report on our company by an investment appraisal agency Publication and website posting of quarterly financial results presentation materials 	★★★	Strengthening corporate governance
Timely and appropriate information disclosure to stakeholders	<ul style="list-style-type: none"> Organization of data items collected from overseas subsidiaries 	★★★	Further disclosure of non-financial information
Control and supervision of Group companies and provision of appropriate guidance		★★★	Control and supervision of Group companies and provision of appropriate guidance

Our approach and policies (Vision)

Our Group has established the Toagosei Group Basic Policy on Corporate Governance. Based on the corporate philosophy of "Through the endless possibilities of chemistry, we bring happiness created by highly functional materials," the Group strives to fulfill its corporate social responsibility by positioning the enhancement of corporate governance as a key priority for management. The Group pursues transparent, fair, swift and resolute decision-making through effective corporate governance, to achieve sustainable growth and to increase its corporate value over the medium and long term. The Group is committed to the continuous enhancement of corporate governance.

The Group's basic approach to corporate governance is shown on the right.

Basic Approach to Corporate Governance

1. Respect shareholders' rights and ensure their equality.
2. Consider the interests of various stakeholders, including shareholders, customers, business partners, employees and local communities. Build good relationships with these stakeholders and cooperate appropriately with them.
3. Disclose corporate information appropriately and ensure transparency.
4. Strive to ensure effective supervisory functions for business execution by the Board of Directors.
5. Engage in constructive dialogue with shareholders who have an investment policy that aligns with medium- to long-term shareholder profits.

Corporate Governance System

We are a company with an Audit and Supervisory Committee, and have a system to accelerate decision-making by securing management oversight functions. This is done by separating business execution by directors and executive officers from the supervision by the Board of Directors, which includes outside directors, of management decision-making and business execution.

Progress of initiatives to strengthen corporate governance

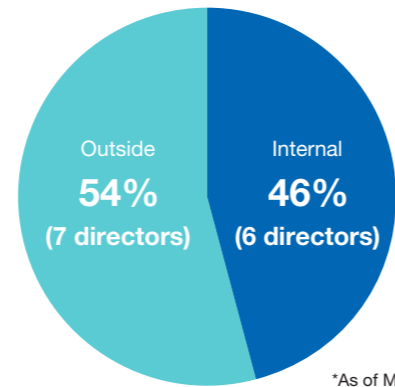
Year	Item	Change in the number of outside directors
2001	Executive officer system introduced of outside directors	
2003	Appointment of outside directors started	
2006	Internal Control Section established	1
	Basic Policy on Internal Control established by resolution	
2016	Toagosei Group Basic Policy on Corporate Governance established	5
	Transition to a company with an audit & supervisory committee	
2017	Start of assessment for the effectiveness of the Board of Directors	
2018	The proportion of outside directors in the voluntary Nomination Committee/ Remuneration Committee increased to a majority	
2019	Increase the number of outside director to seven	
2020	Introduction of stock compensation plan	7
2022	Outside Directors will be in the majority for the first time (6 internal and 7 outside). Move to the Tokyo Stock Exchange Prime Market	

Directors and the Board of Directors

Toagosei's Board of Directors consists of 13 directors (including five directors who serve as Audit and Supervisory Committee Members). The seven independent outside directors play the roles mainly in strengthening the Board's oversight over the management. At the meetings of Toagosei's Board of Directors, the directors, including outside directors, engage in lively discussions. The Board of Directors makes decisions on important management matters, such as Toagosei's management policy and management strategy, and fulfills the role of supervision of business execution of directors and executive officers.

The Company selects a well-balanced mix of candidates for directors who possess extensive experience and abundant knowledge in various business fields including R&D, technology, production, sales, corporate administration, accounting and legal affairs. The Board also includes a female director, as part of the Company's efforts to maintain the diverse structure of the Board of Directors.

Composition of the Board of Directors



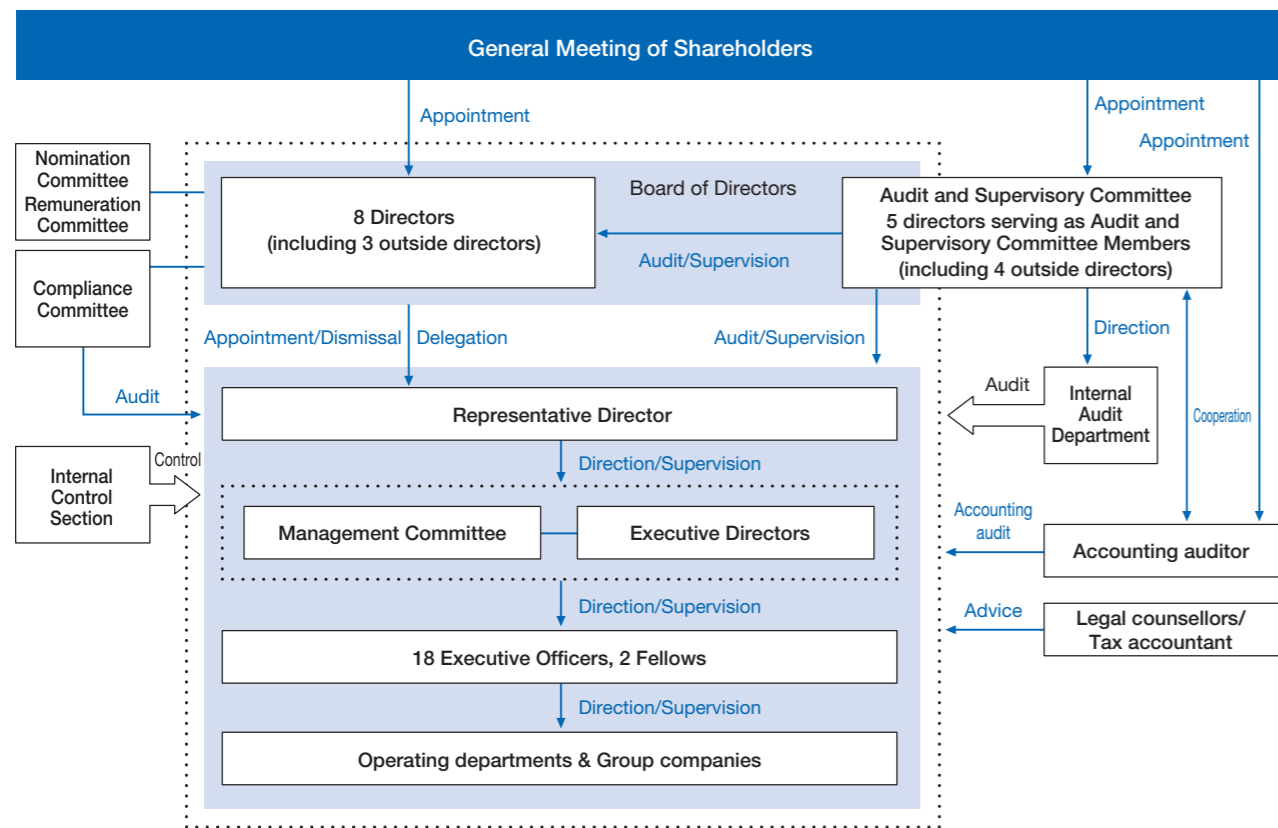
Audit and Supervisory Committee

The five-member Audit and Supervisory Committee consists of one director who serves as a full-time Audit and Supervisory Committee Member and four outside directors. The Audit and Supervisory Committee is responsible for contributing to the Company's sound and sustained growth through the audit of legal compliance with respect to the performance of duties by directors and other officers, the appropriateness of the Company's business operations, the status of internal control systems construction and operation, financial conditions, and other matters.

Management Committee

The Management Committee, composed of five executive directors, meets every week, in principle, for the purpose of accelerating management decision-making and improving the efficiency of business advancement. It engages in practical discussions, from an operational perspective, of matters delegated to it based on resolutions by the Board of Directors.

Corporate Governance System



Profile of Directors

Name	2022 Attendance at the Board of Directors meetings (times)	Fields of experience							
		Corporate management/planning	Sales/marketing	R&D technology/production DX	Finance/accounting	Legal affairs	HR/labor affairs	Global	Sustainability
Mikishi Takamura	13/13	●			●		●		●
Susumu Miho	13/13	●	●	●				●	●
Masahiro Kimura	13/13			●				●	●
Taizo Serita	10/10*		●	●	●	●	●		●
Hidenori Kobuchi	-		●	●					
Yuichiro Mori Outside	13/13					●		●	
Hidetoshi Furukawa Outside	9/10*	●			●			●	
Takashi Kato Outside	-			●				●	●
Yoshitaka Suzuki	13/13	●			●	●	●		●
Nobuhiko Takano Outside	13/13				●				
Kiyoko Ishiguro Outside	13/13					●			●
Masahiko Yasuda Outside	13/13	●			●			●	
Koichi Danno Outside	13/13	●			●			●	

*Since appointment to office in March 2022

Nomination Committee, Remuneration Committee

To enhance objectivity and transparency in corporate management, the Board of Directors has established, as its advisory bodies, the Nomination Committee and the Remuneration Committee, comprising one director who is not an independent outside director and several independent outside directors.

Upon request from the Board of Directors for advice, the Nomination Committee deliberates and reports to the Board of Directors on matters such as succession planning for representative directors, procedures for appointing candidates to directorships or representative directorships, candidate qualifications and reasons for appointment, as well as on independence criteria for independent outside directors, including perspectives on diversity of personal attributes and skills.

The Remuneration Committee, upon request from the Board of Directors for advice, deliberates on the remuneration system for directors as well as individual director's remuneration, and reports to the Board of Directors. The amounts of remuneration of individual directors (excluding directors who serve as Audit and Supervisory Committee Members) are determined by the members of the Remuneration Committee, which is entrusted with the task, in line with the calculation criteria established by the Board of Directors, based on the results of deliberation submitted by the Remuneration Committee, and by resolution of the Board of Directors.

Selection of Directors

The Company has prescribed the selection standards for the Company's directors (excluding directors who also serve as Audit and Supervisory Committee Members and independent outside directors who do not serve as Audit and Supervisory Committee Members) as follows to clarify the qualities expected of directors:

1. Persons who possess outstanding knowledge and abilities and extensive experience in regard to the business administration and operational management of the Group, or persons who possess sufficient understanding of the Group's business activities, along with the experience and knowledge needed to appropriately and fairly supervise the business execution of the Company's directors and other personnel, thereby contributing to the achievement of the Group's medium- to long-term management plans.
2. Persons who are fair-minded and possess excellent character, views, and job execution capabilities as well as have the ability to execute fair and appropriate supervision of business administration, operational management, and business execution based on high ethical standards.

The Committee deliberates on matters such as appointment procedures, qualification and reasons for appointment regarding proposals on candidates for directorships prepared by the representative director, and reports to the Board of Directors.

➤ Remuneration for Directors

Remuneration for the Company's directors consist of three parts, namely, fixed remuneration, performance-linked remuneration, and share-based remuneration, and is paid within the amount approved by the General Meeting of Shareholders.

The amounts of fixed remuneration are determined and paid in consideration of each director's duties, responsibilities, performance and other matters. For the directors who serve as Audit and Supervisory Committee Members, fixed remuneration is paid in consideration of the role and duties of each director.

The amounts of the performance-linked remuneration are determined and paid based on the Company's performance in the previous business year, such as consolidated operating income, as well as duties and responsibilities according to the positions and the business environment, among other factors. Performance-linked remuneration is not paid to directors who serve as Audit and Supervisory Committee Members or to independent outside directors, in light of their important role in overseeing corporate management from independent viewpoints.

Under the stock compensation plan, the Company allocates restricted shares as remuneration to eligible directors, in a number commensurate to the duties and responsibilities of each director, for the purpose of providing incentives to them to sustainably enhance the Company's corporate value and to further promote the sharing of value with the Company's shareholders. As with performance-linked remuneration, the Company does not pay stock-based compensation to directors who serve as Audit and Supervisory Committee Members or to independent outside directors.

➤ Compliance Committee

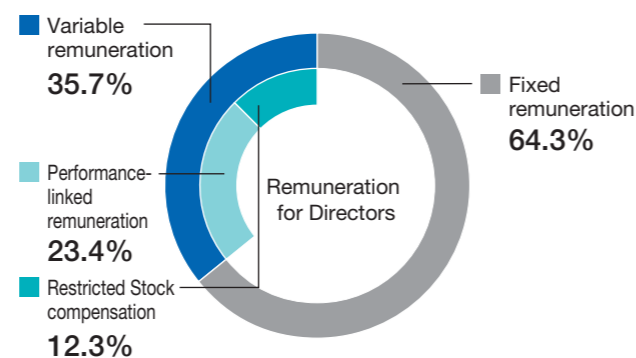
The Group has established the Compliance Committee as a body that monitors the status of compliance of the entire Group and provides recommendations as needed.

The committee consists of three directors, two executive officers, one in-house attorney, and one outside attorney, for a total of seven members, who engage in lively discussions from the perspectives of corporate planning, sales, technology, environmental safety, quality assurance, and legal affairs.

Breakdown of Remuneration for Directors (January 2022-December 2022)

Classification	Total amount of remuneration (Millions of yen)	Total amount by remuneration type (Millions of yen)			Number of directors (Persons)
		Fixed remuneration	Performance-linked remuneration	Stock-based compensation	
Directors (not serving as Audit and Supervisory Committee Members)	213	147	43	22	11
of which, Outside Directors	28	28	-	-	4
Directors (Audit and Supervisory Committee Member)	52	52	-	-	6
of which, Outside Directors	37	37	-	-	4

Percentages of remuneration by category (excluding directors serving as Audit and Supervisory Committee Members and independent outside directors not serving as Audit and Supervisory Committee Members)



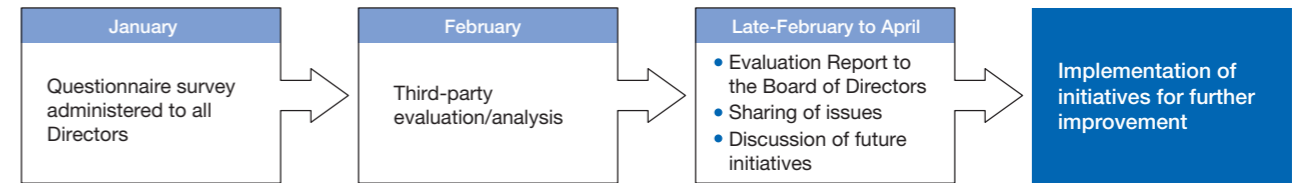
➤ Internal Control Section

The Company has established the Basic Policy on Internal Control by the resolution of the Board of Directors in order to strengthen corporate governance. In accordance with the said policy, the Internal Control Section confirms the operating status of internal control from an independent perspective, reports such results to the Audit and Supervisory Committee Members, and performs duties related to internal control (duties to ensure appropriate financial reporting), based on Japan's internal control reporting system (J-SOX).

In cooperation with the Internal Audit Department (an auxiliary organ of the Audit and Supervisory Committee Members) and the accounting auditor, the Internal Control Section ensures that the Group's business operations as a whole are conducted appropriately in compliance with relevant laws and regulations.

➤ Assessment for the Effectiveness of the Board of Directors

Each year, the Company's Board of Directors conducts a questionnaire survey of all directors and analyzes and evaluates the effectiveness of the Board of Directors based on the results of the survey and the opinions received. We assign a third party to tabulate, analyze, and evaluate the questionnaires to ensure objectivity and transparency of the assessment. Based on the issues identified as a result of the evaluation and the feedback received, the Board of Directors discusses and strives to make improvements.



1 Questions asked in the survey

The following items are answered on a 3-point scale and with free response

- Structure and operation of the Board of Directors
- Enhancement of Board Meeting agenda and discussions
- System supporting the Board of Directors
- Constructive dialogue with shareholders
- Contribution to the Board of Directors (self-assessment)
- New Medium-Term Management Plan

This year, based on the revised Corporate Governance Code and the results of previous evaluations, we have reviewed the questionnaire items overall and made significant revisions in order to make the evaluation more conducive to improving governance. Specifically, questions on items that continue to receive high ratings were consolidated, and items related to the agenda of board meetings and the quality of discussions were revised to focus on open-ended responses rather than a step-by-step evaluation. In addition, the method has been changed to one in which subjects are identified by name.

2 Assessment results

The following is a summary of the results of the survey conducted in February 2023.

Almost all survey items received a majority "Appropriate" assessment, indicating that the effectiveness of the Company's Board of Directors has generally been secured.	Items eliciting high ratings	Items identified as future issues
The questionnaire format was substantially revised, including more free-response fields and changing to a named respondent format, but the responses were not passive, and it is commendable that regular discussions have been conducted actively.	<ul style="list-style-type: none"> • Operation and support structure of the Board of Directors • Opportunities and atmosphere conducive to uninhibited discussion • Sharing awareness of directors' remuneration • The process of developing the 2025 Medium-Term Management Plan • Major revisions to the questionnaire 	<ul style="list-style-type: none"> • Operational innovations to enhance board discussions • Increase opportunities for uninhibited discussion on topics to be addressed from a broader perspective, aside from agenda resolutions. • Deepen discussion on our overall approach to internal control and risk management systems • Discussion on the future structure of the Board of Directors • Overall approach to discussions by the Remuneration Committee and Nominating Committee, and information-sharing measures • Overall approach to successor development and policies

3 Issues and future initiatives

- Create multiple opportunities for free discussion on topics that should be addressed from broad-ranging perspectives, such as capital policy and financial strategy, management direction, ESG-related issues, executive personnel, and the overall state of internal control and risk management systems.
- To ensure more productive discussions, the Board of Directors will consider the selection of appropriate agenda items, reporting methods, and agenda management methods.
- The Remuneration Committee and Nominating Committee will discuss the future structure of the Board of Directors, the respective roles and composition of inside and outside directors, and other issues based on the opinions expressed in the open-ended comments in the effectiveness evaluation questionnaire, and consider how to share the content of the discussions with the Board of Directors.

Opinions stated in the free-text column from outside directors

- The Company's Board of Directors ensures opportunities and an atmosphere conducive to speaking freely, and the comments themselves are active. On the other hand, each statement was one-off, and did not lead to cumulative, serial discussions.
- The atmosphere allows the opinions of outside directors and other directors to be listened to positively and reflected as much as possible. For example, opinions that are received with the response, "I will look into it and get back to you later" are responded to within a few days, and opinions that are deemed "Under consideration" always receive response status reports at a later date.
- The major revision of the questionnaire, focusing on the free-response section, clearly shows the company's willingness to reform the Board of Directors, which is commendable.
- Throughout the process of developing the 2025 Medium-Term Management Plan, there were multiple opportunities to discuss the direction the Group should take. In particular, the free discussions at the plenary meetings of all executive officers, left a lasting impression.
- The Board of Directors rarely discusses topics such as risk management, compliance, and internal controls. There should be more opportunities for free discussion on these and other broad policies aside from agenda resolutions.

Support System for Outside Directors

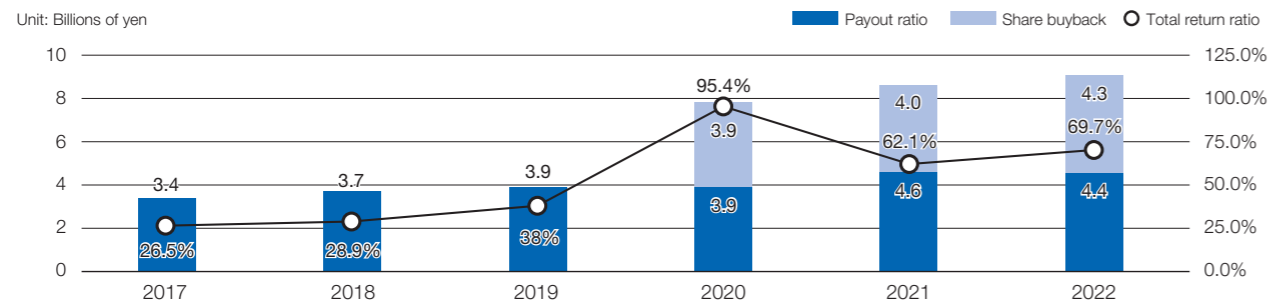
We have taken various steps to establish the environment that enables outside directors to properly supervise that midium and long-term management directions are deliberated in a multi-dimensional way and the Company's management strategies are executed appropriately. Specifically, we provide outside directors with opportunities to visit each business site of the Company periodically with a view to deepen their understanding of the Company's business. Furthermore, they receive monthly briefings regarding the contents discussed by the Management Committee, and share their understanding of the Company's management issues, constructively exchanging opinions as needed through attendance at important meetings regarding research and development, sustainability policy, etc.

Returning Profits to Our Shareholders

The Company's basic policy is to maintain stable dividends and increase the consolidated total return ratio, aiming for a consolidated payout ratio of approximately 30% and a consolidated total return ratio of approximately 50%.

In fiscal 2022, the Company paid a dividend of 36 yen per share (interim: 18 yen, term-end: 18 yen) and bought back 4,299 million yen of its own shares, with a consolidated payout ratio of 35.5% and a consolidated total return ratio of 69.7%. In addition, the 2025 Medium-Term Management Plan calls for the acquisition of approximately 20 billion yen in treasury stock during the period of this plan.

Consolidated Total Return Ratio



Dialogue with Shareholders and Investors, and Information Disclosure

Basic Policy and Framework

In the Toagosei Group Basic Policy on Corporate Governance, the Company stipulates that we "respect the rights of our shareholders and ensure their equality," and that we "engage in constructive dialogue with shareholders who have an investment policy that aligns with medium- to long-term shareholder profits."

In terms of information disclosure, we act in compliance with rules on the handling of important information (insider information) specified in the Financial Instruments and Exchange Act, etc., the Regulation on Fair Disclosure, the Rules of Tokyo Stock Exchange and other related regulations. In addition, in order to disclose information to all stakeholders in a timely, appropriate, and fair manner, and to enable an accurate understanding of our Group, we are actively promoting the disclosure of release text and financial statements in English in order to eliminate uneven amounts of information depending on the language.

Dialogue with Stakeholders

We strive to disclose information proactively based on not only legal disclosure under applicable laws and regulations and timely disclosure under the Rules of Tokyo Stock Exchange, but also the voluntary disclosure of information that does not meet the above disclosure standards. We hold financial results briefings (twice

annually) and individual interviews with institutional investors and the media, and for stakeholders who were unable to attend the financial results briefings, in addition to disclosing transcripts of the briefings, from FY2022, briefing materials for the first quarter and third quarter financial results are also available on our website.

General Meeting of Shareholders

Considering that a General Meeting of Shareholders is a place for more productive dialogue, we disclose the notices of convocation on the Company's website and through the TSE, one business day earlier than the day on which the notices are sent, for early information disclosure to our shareholders. In addition, in view of the increase in the number of foreign shareholders, a summary of the notice of convocation, reference documents and the notice of resolution are translated into English and disclosed on the Company's website and through the TSE concurrently with the Japanese version.

Amid the transition from the spreading-contagion phase of the COVID-19 pandemic to an era of living with COVID-19, the General Meeting of Shareholders in March 2023 was held, following the one in March 2022, under ongoing infection control measures, including a live broadcast of the meeting.

Risk Management

P	D	C	A
Targets for 2022	Results in 2022	Achievement	Targets for 2023
Periodic risk assessment by the Risk Management Committee	<ul style="list-style-type: none"> Meetings of the Risk Management Committee (twice) Restructuring of the risk management system to include reporting to the Board of Directors for more effective risk management 	★★★★	Establishment and operation of a risk management system that enables departments and workplaces to respond more autonomously and flexibly
Continuation and enhancement of a crisis response drill jointly conducted by the Head Office and sites	Joint training conducted with head office and business sites	★★★★	Consideration and implementation of more effective crisis response training
Improvement of drills at each site including in preparation for earthquakes, accidents	Disaster prevention drills and safety confirmation drills, etc., conducted at each site	★★★★	Improvement drills at each site including in preparation for earthquakes, accidents

Risk Management Method

Based on the Toagosei Group Risk Management Regulations, the Toagosei Group designates a department in charge of each risk and implements appropriate risk countermeasures, including the formulation of a business continuity plan (BCP) and risk management for the purpose of prevention and avoidance, led by the department in charge. The Management Committee and the Board of Directors regularly assess Group-wide risks and confirm the adequacy of countermeasures. In the event that a risk materializes, a Group Task Force is established to respond flexibly to the crisis situation.

Based on this thinking, we revised our risk management system in 2022 so that each department can proactively implement risk countermeasures and the Board of Directors can regularly assess the overall risk picture. This has created a system that enables us to respond to risks more promptly.

Information Leakage Risk Countermeasures

In accordance with the "Regulations for Management of Confidential Information," the Toagosei Group prepared a "list of confidential information" that specifies confidential information of the respective departments, and promoted countermeasures for the risk of information leakage. In addition to education for spreading awareness regarding information management and handling rules, we are continuously improving the information security system.



Joint crisis response training

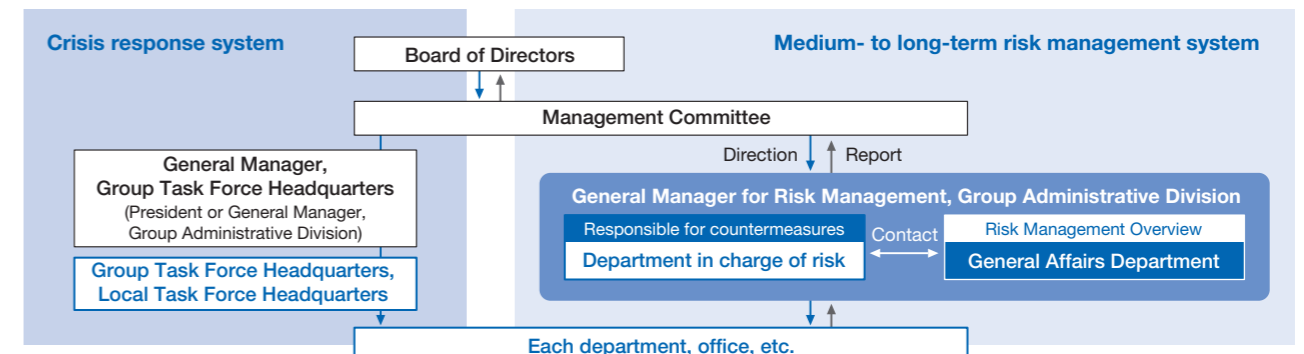
BCP and Response in the Event of a Crisis

To continue business operations even in the event a risk is materialized, we have formulated the BCP that determines the standards for businesses that should be prioritized to continue operation, as well as the target recovery time according to the damage status.

The Toagosei Group has established the Toagosei Group Crisis Response Rules that specify the organizational framework and concrete measures in the event of a crisis. Moreover, the Emergency Action Manuals have been

prepared according to respective phenomenon and office, and training is conducted regularly.

In 2022, joint crisis training was held by the Head Office and the Nagoya Plant. In addition, media training was conducted to ensure Toagosei disseminates accurate information and messages. Issues for consideration that are identified during the training, as well as departmental risk management initiatives, are shared with each department, and actions are taken to improve them.



Compliance

P	D	C	A
Targets for 2022	Results in 2022	Achievement	Targets for 2023
Continuous compliance education	<ul style="list-style-type: none"> Compliance courses held for newly hired and promoted employees Education through e-learning 	★★★★	<ul style="list-style-type: none"> Continuation of compliance education Compliance Handbook revision
Continuation of monitoring and checks by the Compliance Committee	<ul style="list-style-type: none"> Compliance Committee meetings held (twice) Harassment Questionnaire Survey administered 	★★★★	Continuation of monitoring and checks by the Compliance Committee
No major violation	Three cases of administrative guidance occurred	★	No major violation

Corporate Ethics and Legal Compliance

Code of Conduct and Manual of Behavioral Standards

As fundamental guidelines and the basis for the correct behavior for all officers and employees to act as exemplary citizens, the Group has established the Toagosei Group Code of Conduct and the Toagosei Group Manual of Behavioral Standards.

Both of these are included in the Compliance Handbook, which is carried by all employees of the Group, to ensure that all employees are aware of them.

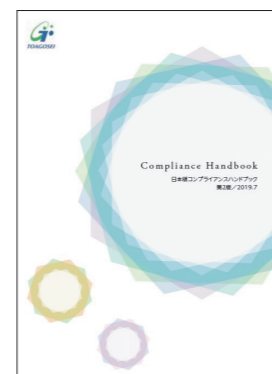
Compliance Committee

The Company has established a Compliance Committee that includes external members (outside legal counsel). The Committee periodically monitors the status of implementation of compliance measures at Toagosei's sites and Group companies (including overseas subsidiaries) and provides recommendations for improvement in order to ensure management that emphasizes compliance.

Compliance Education

In addition to education of employees according to positions and Group-wide education, the Group is promoting voluntary education at workplaces in order to inculcate compliance awareness. In addition to providing education for new employees and managers by job rank, the Group ordinarily conducts training at each workplace using a compliance handbook and other materials. In an easy-to-understand manner, the handbook describes various matters to be careful about in business activities as well as relevant laws and regulations, contributing to comprehensively raising awareness among employees.

We also implement educational programs as needed, using our e-learning system and websites. In 2022, e-learning on document management and a contract seminar using a web conferencing system were conducted and attended by numerous employees.



Compliance Handbook



e-learning

TOPICS Conducting the Harassment Questionnaire Survey

We conducted a survey on harassment and other issues in 2020, and based on the results, we then held seminars on harassment prevention for directors and employees in 2020 and 2021. In 2022, we again conducted a questionnaire survey on harassment and other issues to ascertain the effectiveness of this seminar. Based on the results of this survey, the Group will further promote the creation of a harassment-free workplace.

Compliance regarding Business Activities

To ensure that the Group's business activities are in compliance with laws and regulations, we establish rules and conduct reviews by internal organizations.

For example, regarding the Antimonopoly Act and the Subcontractor Act, we stipulate Toagosei's guidelines and describe initiatives in the Antimonopoly Act Compliance Manual. In addition, we require a review by the Antimonopoly Act Compliance Committee upon the revision of product prices in an effort to prevent any violation of laws and regulations.

Respect for Human Rights

The Group supports international human rights standards and principles, including the UN Guiding Principles on Business and Human Rights and the Guidelines for Respecting Human Rights in Responsible Supply Chains formulated by the Japanese government. We do not engage in human rights abuses, including forced labor, child labor, discrimination, and harassment.

To clarify this thinking, the Group has established the Toagosei Group Human Rights Policy, approved by our Board of Directors in 2022, which has been published on our website. In accordance with this policy, we are also promoting the establishment of a human rights due diligence mechanism and working to identify, prevent and mitigate human rights issues.

In 2022, in order to ensure that our suppliers understand our stance on issues such as human rights, we established the Toagosei Group Sustainable Procurement Guidelines and published them on our website.

Corporate Ethics Helplines

The Group has both in-house and external Corporate Ethics Helplines, which are whistleblower hotline systems for early detection and resolution of compliance issues. The Helpline is available via dedicated telephone line or email.

Furthermore, the Group has established a dedicated helpdesk for sexual harassment, etc., in an effort to provide a better work environment regardless of gender. In 2022, we established regulations to improve the effectiveness of the whistleblowing system and provide whistleblowers with the protection of anonymous reporting.

Toagosei Group Human Rights Policy (excerpt)

1 Basic Policies

The Toagosei Group supports international human rights standards and principles, including the International Bill of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and the United Nations Guiding Principles on Business and Human Rights, and we will implement initiatives that respect their principles. Our Group understands and complies with the laws and regulations applicable in the countries and regions in which we operate. Where there is a conflict between internationally recognized human rights standards and the requirements of national or regional laws and regulations, we will seek ways to ensure that international human rights principles are respected.

2 Respect for Human Rights

Our Group recognizes that our business activities may impact human rights, and we aim to fulfill our responsibility to respect the human rights of our own employees, business partners, local communities, and other stakeholders in the value chain. In all areas of our business activities, we will endeavor not to cause or encourage human rights violations through our own activities.

3 Conduct of Human Rights Due Diligence

Our Group will establish human rights due diligence mechanisms to identify and assess negative human rights impacts, and will work to prevent and mitigate them. If it becomes clear that the Group has caused or encouraged human rights violations, we will work to correct and remedy such violations through appropriate means. To address potential or actual negative human rights impacts, we will engage in constructive dialogue with relevant stakeholders to understand, improve, and resolve human rights issues.

4 Complaint Handling Mechanism

The Group has established a point of contact where employees can report concerns regarding business activities, including negative impacts on human rights, without fear of retaliation. In addition, the Group prohibits any disadvantageous treatment of whistleblowers because of their reporting. We will continue to work on establishing effective mechanisms for handling grievances.

Financial Highlights

		100th term 2012	101st term 2013	102nd term 2014	103rd term 2015		104th term 2016	105th term 2017	106th term 2018	107th term 2019	108th term 2020	109th term 2021	110th term 2022 ⁴
Key financial results													
Net sales	(Millions of yen)	148,203	151,081	148,912	139,848		135,382	144,708	150,066	144,955	133,392	156,313	160,825
Operating income	(Millions of yen)	14,583	14,501	12,015	12,347		16,147	17,543	16,408	13,782	12,336	17,676	14,382
Ordinary profit	(Millions of yen)	15,250	15,346	12,892	13,201		16,935	18,492	17,403	15,230	13,054	18,983	16,446
Net income attributable to owners of parent	(Millions of yen)	9,699	9,605	8,414	6,696		13,801	12,911	12,748	10,387	8,142	13,771	12,494
Net assets	(Millions of yen)	136,240	148,148	157,349	163,020		173,003	187,487	191,296	198,579	197,642	206,612	210,807
Total assets	(Millions of yen)	181,451	193,086	201,168	208,018		219,520	239,338	241,164 ³	247,211	241,832	258,955	265,135
Cash flows from operating activities	(Millions of yen)	23,293	18,023	16,098	23,313		21,989	15,166	19,841	18,615	20,671	21,219	10,988
Cash flows from investing activities	(Millions of yen)	(15,041)	(6,852)	(13,981)	(4,592)		(17,673)	(23,186)	(11,910)	(15,855)	(11,362)	(10,239)	(3,579)
Cash flows from financing activities	(Millions of yen)	(3,377)	(2,094)	(3,063)	(3,949)		(3,939)	(4,047)	(4,908)	(4,582)	(8,491)	(8,644)	(9,464)
Key indicators													
Net assets per share ¹	(yen)	1,001.99	1,090.91	1,159.65	1,201.46		1,276.10	1,387.36	1,416.24	1,472.09	1,505.69	1,613.90	1,700.75
Net income per share ¹	(yen)	73.58	72.88	63.88	50.86		104.83	98.08	96.85	78.91	62.43	108.14	101.31
Net worth ratio	(%)	72.8	74.4	75.9	76.0		76.5	76.3	77.3 ³	78.4	79.8	77.9	77.7
ROE (ratio of net income to shareholders' equity)	(%)	7.6	7.0	5.7	4.3		8.5	7.4	6.9	5.5	4.2	7.0	6.1
ROA (ratio of ordinary profit to total assets)	(%)	8.7	8.2	6.5	6.4		7.9	8.1	7.3 ³	6.2	5.3	7.6	6.3
PER (price earnings ratio)	(times)	9.2	12.3	15.0	20.5		11.0	14.6	12.5	16.1	19.4	10.7	11.0
Other indicators													
Capital investment	(Billions of yen)	12.8	7.4	7.8	5.8		5.1	10.0	12.5	15.8	13.6	11.9	22.8
Research and development expenses	(Billions of yen)	4.4	3.8	3.9	3.7		3.6	3.7	3.6	3.7	4.0	4.3	4.7
Interest-bearing debt	(Billions of yen)	12.2	13.1	13.2	12.6		12.3	12.1	11.6	11.5	11.3	11.2	11.0
Cash dividend per share ²	(yen)	10.00	10.00	12.00	18.00		26.00	26.00	28.00	30.00	30.00	36.00	36.00
Payout ratio	(%)	27.2	27.4	37.6	47.2		24.8	26.5	28.9	38.0	48.1	33.3	35.5
Number of employees		2,509	2,483	2,442	2,441		2,411	2,393	2,429	2,473	2,527	2,539	2,517

¹ The Company has implemented the share consolidation of common stocks at a ratio of one share per two shares effective on July 1, 2015. Net assets per share and net income per share are calculated assuming that the share consolidation was executed at the beginning of the 98th term.

² For the 103rd term (fiscal 2015), the total annual dividend of ¥18 per share consists of an interim dividend of ¥6 per share and a term-end dividend of ¥12 per share. As the Company implemented the share consolidation of common stocks at a ratio of one share per two shares effective on July 1, 2015, the interim dividend of ¥6 per share is an amount before the share consolidation and the term-end dividend of ¥12 per share is an amount after the share consolidation.

³ Effective from the beginning of the 107th term (fiscal 2019), the Company has adopted the "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28 issued on February 16, 2018), etc., and figures for the consolidated financial position for the 106th term have been restated by retrospective application of the said accounting standard, etc.

⁴ The Accounting Standard for Revenue Recognition (ASBJ Statement No. 29, March 31, 2020) has been applied from the beginning of the 110th term, and the key management indicators for the 110th term are those after the application of the said accounting standard.