

Stage up for the Future

TOAGOSEI GROUP REPORT 2020

Corporate philosophy



Editorial policy

The Toagosei Group publishes the Toagosei Group Report to facilitate stakeholders' understanding of the Group's business strategies and initiatives. In addition to the management orientation, strategies, and business overview, non-financial information on environmental and social aspects is included.



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

Toagosei Co., Ltd. and Toagosei Group companies are covered by this report. The environmental data reported in this report are aggregate data corresponding to companies and sites in Japan engaged in manufacturing specified on Page 52 ("Business Activities and Environmental Impacts"). If the name of a plant is not preceded by a company name, it means it is a Toagosei plant.

Reference guidelines

Environmental Reporting Guidelines (Fiscal Year 2018 Version) published by the Ministry of the Environment of Japan
The International Integrated Reporting Council (IIRC) International Integrated Reporting Framework

Date of issue of the Japanese version

March 2020 (Previous issue: March 2019. Next issue scheduled for March 2021)

Period covered

Graphs and tables in this report present aggregate data for one year from January 1 to December 31, 2019. Some articles include information on activities conducted in 2020.

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Our communication tools

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For everyone



Toagosei Corporate Website
<http://www.toagosei.co.jp/english>

For shareholders



Shareholder Newsletter
for the 107th Term

For all stakeholders

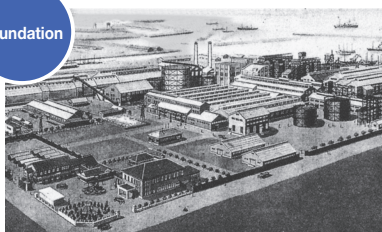


Toagosei Group
Report 2020

Corporate History

The Toagosei Group has been creating new value by leveraging the power of chemicals to meet the needs of a rapidly changing society. In 1960, Toagosei was the first company in Japan to commercialize acrylic esters (acrylates). First produced in 1963, Aron Alpha® redefined adhesives for the world. Going forward, the Toagosei Group will develop new products and new technology that meet the expectations of society and make every effort to enhance medium- to long-term corporate value.

Foundation



1944

Yahagi Kogyo merged with Showa Soda, Hokkai Soda and Rayon Soda to form "Toagosei Chemical Industry," marking the founding of the Company.

Phase 1 1910s-1960s

Development of commodity chemicals

The business was initially built mainly on soda, ammonia, ammonium sulfate and sulfuric acid, during a period when Japanese industry needed electrolysis products as basic materials and Japan's farmers needed fertilizer to boost food production.

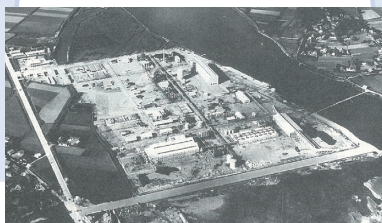
1950

Oaklite Industrial (renamed Aronkasei in 1973) was established. In 1951, it became the first in Japan to develop rigid PVC pipes.



1957

The Company opened a new plant in Tokushima to produce caustic soda and organic solvents.



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.

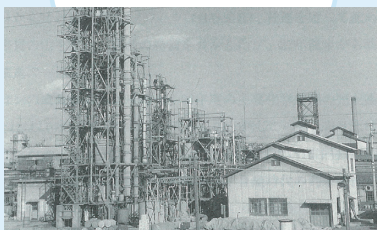
1963

The Company commenced manufacturing of Aron Alpha®, the first instant glue in Japan, at the Takaoka Plant.



1960

The Company successfully commercialized Japan's first acrylic ester production line plant.



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 such as Aron Alpha® and ARONIX®, positioning them as mainstays of the business.

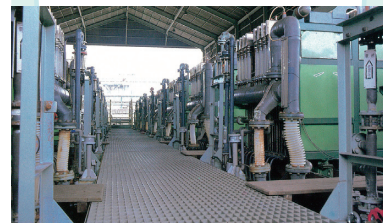
1983

Oita Chemical Co., Ltd. was established to produce acrylic acid.



1985

The Nagoya Plant changed the method for its caustic soda manufacturing facilities from the mercury method to the ion exchange membrane method.



1989

The Company's first overseas subsidiary Toagosei America Inc. and overseas joint-venture company Borden Toagosei Co. (current Elmer's & Toagosei Co.) were established.

Gaining a strong presence in technologies and high-value-added products

化学のオドロキ
未来のトキメキ

Toward the **100th** anniversary

Who are the Toagosei Group?

Toagosei Group's Vision and Growth Strategy

Sustainability Management Underpinning Growth

1999

Production facilities at Singapore Acrylic Ester Pte. Ltd. (currently Toagosei Singapore Pte Ltd.) were completed and commenced operation.



2000

Taiwan Toagosei Co., Ltd. and Toa-Jet Chemical Co., Ltd. were established.

1995

Toagosei (Zhuhai) Limited was established.

2003

TG Corporation was established.

2001

Toa Techno-Gas Co., Ltd. was established. The industrial gas business was spun off.



2019

The Group's corporate philosophy was revised, taking the opportunity of the 75th anniversary of Toagosei's founding.

1994

A plant for filling and packaging Krazy Glue® was completed near Columbus, Ohio in the U.S.



2004

TOA-DIC Zhangjiagang Chemical Co., Ltd. was established to manufacture and market ARONIX®.



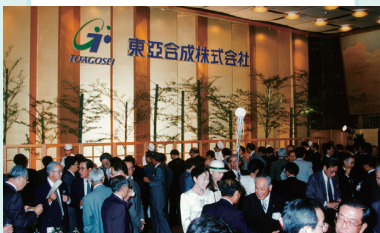
2018

Aronkasei (Thailand) Co., Ltd. was established. Construction of an elastomer compound plant was commenced (completed in 2019).



1994

Toagosei Chemical Industry was renamed "Toagosei Co., Ltd.," taking the opportunity of the 50th anniversary.



2006

MT AquaPolymer, Inc. was established.



2016

Toagosei (Thailand) Co., Ltd. was established.



1991

The Company opened the Tsukuba Research Laboratory (currently the Institute for Advanced Sciences) to develop new technologies and products.



1993

Toagosei Hong Kong Limited was established.

2011

Toagosei's General Center of Research and Development and Aronkasei's Monozukuri Center were opened.



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.

Company Profile

Establishment	July 17, 1944
Head Office	1-14-1 Nishi-Shimbashi, Minato-ku, Tokyo, Japan
President	Mikishi Takamura
Capital	20,886 million yen
Number of employees	2,473 on a consolidated basis (as of December 31, 2019)

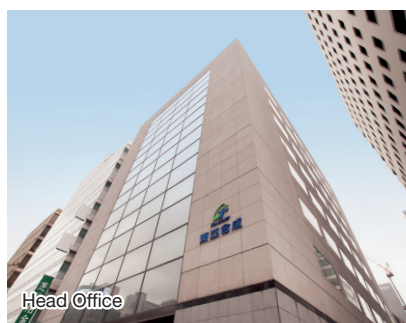
Main business lines

Segment	Products
Commodity Chemicals	Caustic soda, caustic potash, sodium hypochlorite and other inorganic chlorides, sulfuric acid, acrylic monomers, industrial gases, etc.
Polymer & Oligomer	Acrylic polymers, polymer flocculants, UV-curable resins, etc.
Adhesive Material	Instant glues, functional adhesives
Performance Chemicals	High-purity inorganic chemicals, inorganic functional materials
Plastics	Piping equipment, products for construction and civil engineering, nursing care products, elastomer compounds, and environmental products



About the corporate logo

Featuring the “T” of Toa and “G” of Gosei, the logo embodies Toagosei’s aspirations to demonstrate ingenuity based on “Trust” and “Technology” expressed by the “T” emphasized in the logo. The element of “T” expresses “power,” the loop of “G” symbolizes “sensitivity,” and the three dots express the possibilities inherent from their integration.



Head Office



Nagoya Plant



Yokohama Plant



Takaoka Plant

ASIA

China

- Toagosei Hong Kong Limited
- Toagosei (Zhuhai) Limited
- TOA-DIC Zhangjiagang Chemical Co., Ltd.



TOA-DIC Zhangjiagang Chemical Co., Ltd.

Taiwan

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

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, Kawasaki Plant, Hirono Plant
General Center of Research and Development, Institute for Advanced Sciences

Singapore

- Toagosei Singapore Pte Ltd.

Thailand

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

South Korea

- Toagosei Korea Co., Ltd.

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



AMERICA

USA

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



Toagosei America Inc.

Principal Affiliated Companies

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



Nagoya Plant, Aronkasei



Sakaide Plant, MT AquaPolymer

Toagosei Group's Products Serve

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 ▶ P.23

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.



● ARONFLOC® polymer flocculant

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

● ARONIX® UV-curable resins

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 ▶ P.25

● 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.



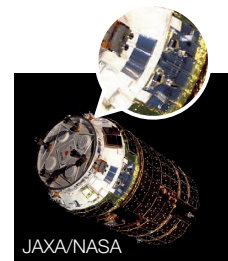
● Functional adhesives

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



● SQ Series

Applications include contamination-resistant coatings exploiting the high resistance of these resins to radioactive and ultraviolet rays. Used for protecting the vehicle identification mark (Japanese flag) on transfer vehicles to the Space Station, the SQ Series is helping extend the lives of materials used in space.



Commodity Chemicals ▶ P.21

Commodity Business

● Caustic soda

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



● Sodium hypochlorite

Sodium hypochlorite is used for sterilizing swimming pool water, as well as tap water and in sewage treatment. Our products with minimal chloric acid or bromic acid underpin the supply of safe and clean water.



● 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.

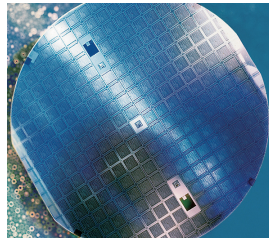


Society

Performance Chemicals ▶ P.27

● 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.



● NOVARON® inorganic antimicrobial agent

Effective against a wide range of microbes as well as for disabling various viruses, NOVARON® is contributing to clean, comfortable living.



● 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.



● 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.



Plastics ▶ P.29

● 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.



● Anju-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 compounds

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.



● 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.



Toagosei Group's Presence

Toagosei Group's earnings structure (2019)

Net sales (outer circle)

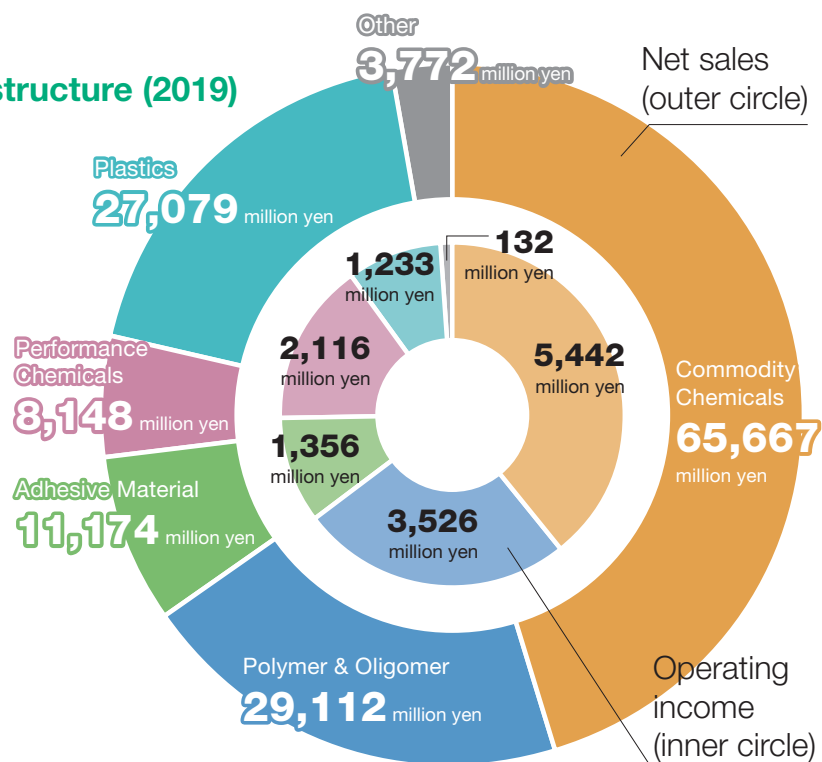
144,955

million yen

Operating income (inner circle)

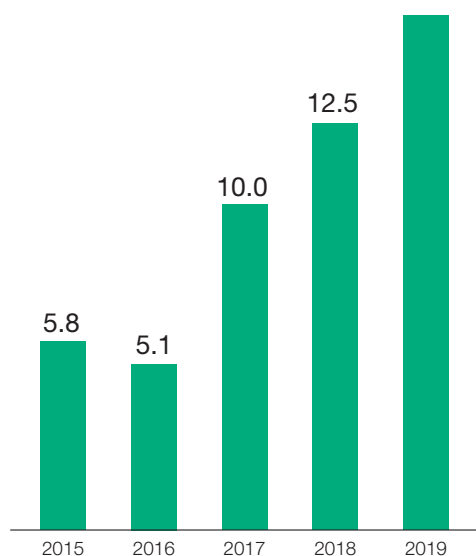
13,782

million yen



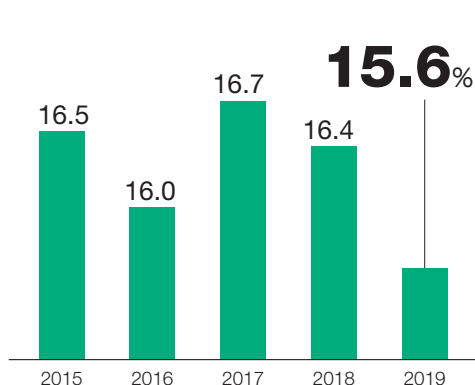
Capital investment (Billions of yen)

15.8 billion yen



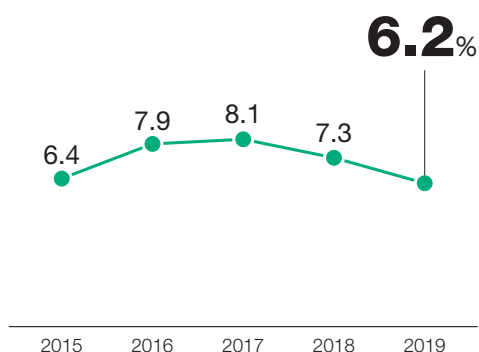
During the period covered by the previous medium-term management plan "Trajectory Toward Growth 2019," Toagosei vigorously executed extensive capital investment for implementation of the growth strategy targeting high-value-added products, strengthening of the commodity business, and improvement of the infrastructure. Cumulative capital investment for the three years amounted to 56.0 billion yen (approval basis), exceeding the initial plan of 42.0 billion yen.

Overseas net sales ratio (%)



Overseas net sales decreased in 2019 because the production of certain products at Toagosei Singapore was terminated and, in addition, profit contributions of the first phase (acrylic polymer) and the second phase (elastomer compound) of the project at Toagosei Thailand envisaged in the performance forecast have yet to materialize.

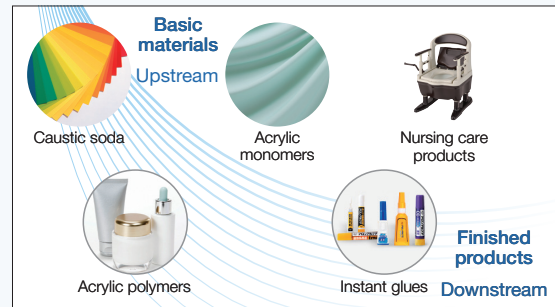
Ratio of ordinary profit to total assets (ROA) (%)



Although total assets on a consolidated basis has been increasing since 2010 partly because of an increase in shareholders' equity, the ratio of ordinary profit to total assets decreased owing to a decrease in ordinary profit along with the decrease in operating income.

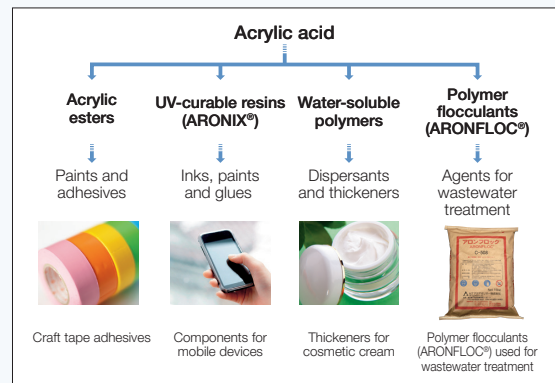
Well-balanced business structure

The Group's business, which consists of five segments, supplies a wide variety of products ranging from commodity chemicals including basic industrial materials such as electrolysis products and acrylic monomers to finished products for ordinary consumers such as Aron Alpha® instant glues and Anju-brand nursing care products. This diverse product lineup has enabled us to build a well-balanced business structure that is less sensitive to economic fluctuations.



Product structure from upstream to downstream

Originally engaging in businesses of electrolysis products and other commodity chemicals in Phase 1 "Development of commodity chemicals," we developed products such as acrylic esters in Phase 2 "Development of petrochemicals," and are currently in Phase 3 "Development of functional chemicals" mainly supplying glues and acrylic polymers. Throughout our long history, we have built a product structure from upstream to downstream in the electrolysis products business and the acrylic products business, enabling the Group to integrally perform business operations and establish a solid business foundation.



Products holding a top market share

We offer products holding a high market share both inside and outside Japan. These drivers of our business growth include Aron Alpha® instant glues, which are synonymous with the Group; ARONIX® special acrylic monomers and oligomers, which are used as a material of UV-curable resins; ARONFLOC® polymer flocculants, which are used to treat wastewater and sludge; and Anju, which is a pioneering nursing care product brand.



Effective response to ESG (Environment, Society and Governance)

The Group contributes to the sustainable development of society by not only focusing on its corporate social responsibility (CSR), including responsible care (RC) activities, but also pursuing ESG-conscious management through activities for harmonious coexistence with local communities, promotion of employees' work-life balance, strengthening of corporate governance, and achievement of SDGs.



Financial and Non-financial Highlights

Financial data

		97th term 2009 (Dec. 2009)	98th term 2010 (Dec. 2010)	99th term 2011 (Dec. 2011)	100th term 2012 (Dec. 2012)
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Key financial results

Net sales	(millions of yen)	140,033	153,779	153,007	148,203
Operating income	(millions of yen)	11,158	21,271	17,338	14,583
Ordinary profit	(millions of yen)	11,538	20,941	17,569	15,250
Net income attributable to owners of parent	(millions of yen)	3,541	13,133	13,000	9,699
Net assets	(millions of yen)	113,700	125,027	127,776	136,240
Total assets (*3)	(millions of yen)	161,609	173,847	171,046	181,451
Cash flows from operating activities	(millions of yen)	22,701	24,843	17,828	23,293
Cash flows from investing activities	(millions of yen)	(6,174)	(10,155)	(9,041)	(15,041)
Cash flows from financing activities	(millions of yen)	(13,992)	(4,117)	(7,320)	(3,377)

Key indicators

Net assets per share (*1)	(yen)	788.06	874.34	939.23	1,001.99
Net income per share (*1)	(yen)	27.70	104.10	101.99	73.58
Net worth ratio (*3)	(%)	61.5	63.4	72.4	72.8
ROE (ratio of net income to shareholders' equity)	(%)	3.6	12.5	11.1	7.6
ROA (ratio of ordinary profit to total assets)	(%)	6.9	12.5	10.2	8.7
PER (price earnings ratio)	(times)	25.2	7.3	6.2	9.2

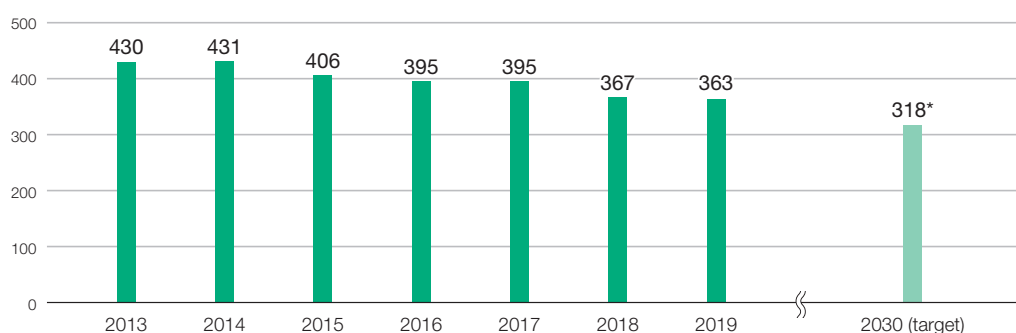
Other indicators

Capital investment	(billions of yen)	5.9	10.3	10.4	12.8
Research and development expenses	(billions of yen)	4.5	4.5	4.6	4.4
Interest-bearing debt	(billions of yen)	15.7	13.5	12.5	12.2
Cash dividend per share (*2)	(yen)	6.00	9.00	10.00	10.00
Payout ratio	(%)	43.3	17.3	19.6	27.2
Number of employees		2,561	2,533	2,534	2,509

*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 97th term.

Non-financial data

CO₂ emissions (Thousand tons, CO₂ equivalent)

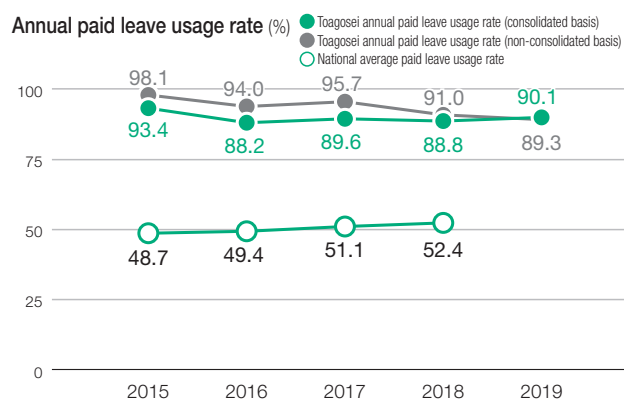


*The target for 2030 is 26% lower than the result for 2013.

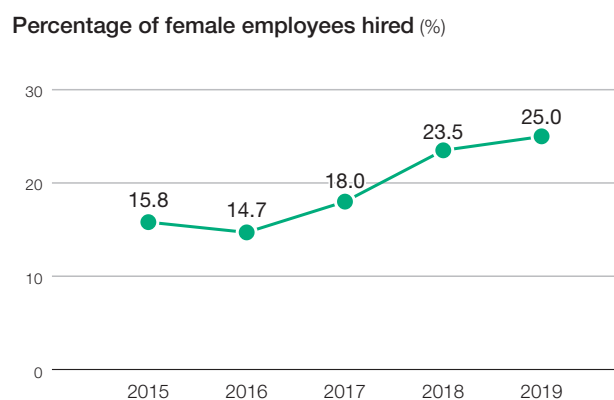
101st term 2013 (Dec. 2013)	102nd term 2014 (Dec. 2014)	103rd term 2015 (Dec. 2015)	104th term 2016 (Dec. 2016)	105th term 2017 (Dec. 2017)	106th term 2018 (Dec. 2018)	107th term 2019 (Dec. 2019)
151,081	148,912	139,848	135,382	144,708	150,066	144,955
14,501	12,015	12,347	16,147	17,453	16,408	13,782
15,346	12,892	13,201	16,935	18,492	17,403	15,230
9,605	8,414	6,696	13,801	12,911	12,748	10,387
148,148	157,349	163,020	173,003	187,487	191,296	198,579
193,086	201,168	208,018	219,520	239,338	241,164 ^(*)	247,211
18,023	16,098	23,313	21,989	15,166	19,841	18,615
(6,852)	(13,981)	(4,592)	(17,673)	(23,186)	(11,910)	(15,855)
(2,094)	(3,063)	(3,949)	(3,939)	(4,047)	(4,908)	(4,582)
1,090.91	1,159.65	1,201.46	1,276.10	1,387.36	1,416.24	1,472.09
72.88	63.88	50.86	104.83	98.08	96.85	78.91
74.4	75.9	76.0	76.5	76.3	77.3 ^(*)	78.4
7.0	5.7	4.3	8.5	7.4	6.9	5.5
8.2	6.5	6.4	7.9	8.1	7.3 ^(*)	6.2
12.3	15.0	20.5	11.0	14.6	12.5	16.1
7.4	7.8	5.8	5.1	10.0	12.5	15.8
3.8	3.9	3.7	3.6	3.7	3.6	3.7
13.1	13.2	12.6	12.3	12.1	11.6	11.5
10.00	12.00	18.00	26.00	26.00	28.00	30.00
27.4	37.6	47.2	24.8	26.5	28.9	38.0
2,483	2,442	2,441	2,411	2,393	2,429	2,473

*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.



*National average paid leave usage rate: General Survey on Working Conditions (Ministry of Health, Labour and Welfare)





Medium-Term Management Plan “Stage up for the

Review of the previous medium-term management plan “Trajectory Toward Growth 2019”

Results

Net sales: **145.0** billion yen

Operating income: **13.8** billion yen

Capital investment: **56.0** billion yen

Main initiatives and results

Implementation of growth strategy

Polymer & Oligomer Segment

- Started operation of a new acrylic polymer plant in Thailand
- Started operation of the facility for binders for LIB negative electrode
- Started operation of the facility for ester interchange oligomer

Adhesive Material Segment

- Accelerated overseas expansion of general-purpose adhesives
- Enhanced production capacity of functional adhesives
- Launched mobility-related products

Performance Chemicals Segment

- Improved production and shipment capacity for high-purity inorganic products
- Accelerated expansion into new markets and application of inorganic functional products

Plastics Segment

- Started operation of a new elastomer compound plant in Thailand
- Accelerated development and launch of new nursing care related products

Strengthening of commodity business

Commodity Chemicals Segment

- Improved productivity of the caustic potash manufacturing facility
- Improved profitability of a subsidiary in Singapore

Plastics Segment

- Restructured the production system of a piping material plant

To grow and evolve into a corporate group that demonstrates a higher presence toward our 100th anniversary,

We continue to promote growth investment into the future

Investment proved to be effective, a promising sign of our growth

Overview of the Medium-

The Medium-Term Management Plan for 2020 to 2022 is expansion of our high-value-added products by strengthening

1

— Basic policies —

Expand high-value-added products businesses

Expand high-value-added products businesses by implementing solid initiatives to strengthen sales and new product development in businesses that are leading growth, and achieve net sales of 163.0 billion yen in 2022.

Creation of new business units, including the “fourth core” business that will underpin the future of Toagosei Group

Create multiple new business units, leveraging the Toagosei Group’s core technologies to handle new key materials and services that expand beyond the scope of our existing businesses.

Strengthen core businesses and execute business reorganization

Push ahead with planned investment and the continued rationalization of core businesses in order to strengthen our profit base, and reorganize and downsize existing businesses that lack growth.

for 2020 to 2022 Future”

Term Management Plan for 2020 to 2022 “Stage up for the Future”

positioned as a stage that follows the previous medium-term management plan “Trajectory Toward Growth 2019.” We will pursue further new business creation and research and development functions.

2

— Key initiatives —

Strengthen the new business creation function and the R&D function

Accelerate the new business creation function of the newly established New Business Planning Department, strengthen open innovation and intellectual property strategy, and promote greater efficiency and enhancement of research and development through the introduction of materials informatics (MI).

Promote the overseas expansion of the instant glues business

Restructure the business in North America, and commence full-scale entry into emerging markets, especially in Asia.

Enhance competitive advantage and function through digital transformation (DX)

Promote product development and innovation in production to meet customer needs, through the integration of company-wide information processing networks and advanced information utilization.

Secure and cultivate human resources to drive our growth strategy

Review and enhance our methods of recruiting and cultivating human resources, and actively promote overseas personnel, to establish a corporate environment in step with increasingly diverse societies.

Promote sustainable management, co-existence and co-prosperity with stakeholders

Centering on the newly established Sustainability Promotion Department, promote the development of new businesses and new products that will contribute to global environmental protection, and strengthen stakeholder engagement.

3

— Quantitative targets —

FY2022 targets

Net sales	163.0 billion yen
Operating income <small>[Operating income to net sales ratio]</small>	17.0 billion yen [10.4%]
EBITDA <small>(Earnings before interest, taxes, depreciation and amortization)</small>	27.0 billion yen
High-value-added product to net sales ratio	47%
Capital investment	44.0 billion yen <small>(cumulative for 3 years from 2020 to 2022)</small>
Overseas net sales <small>[Overseas net sales ratio]</small>	32.5 billion yen [20%]
EPS (Earnings per share)	106 yen
ROA (Return on assets)	7.0%

Capital investment plans

Continuing on from the previous medium-term management plan, we plan total capital investment of 44.0 billion yen over the three years from 2020-2022, focusing on investment in high-value-added products, as well as facilities renewal and factory automation in our commodity chemicals business, and the strengthening of information-related investment to drive digital transformation.

Overseas expansion plans

We will promote active overseas expansion of our high-value-added products businesses, primarily in the polymer & oligomer, adhesive material and performance chemicals businesses, and target an overseas net sales ratio greater than 20% in 2022.

Capital policy

Promote the following capital policies to improve capital efficiency and enhance shareholder return.

- Enhance and improve profitability and capital efficiency, with EPS and ROA as numerical indicators.
- Improve consolidated total shareholder return and EPS, by maintaining stable dividends aiming at a dividend payout ratio of 30% or greater and conducting share buybacks (around 10.0 billion yen over the three years from 2020-2022).



President

高村美己志

Message from Management

Focusing on creation of the “fourth core” to help build a sustainable society by ensuring investment made so far leads to growth

Having celebrated its 75th anniversary in 2019, Toagosei has transitioned to a new phase with a view to the centenary, the next milestone. We will strive to ensure that the achievement of the capital investment executed under the previous medium-term management plan “Trajectory Toward Growth 2019” leads to increases in net sales and profits. At the same time, the newly established organizations, namely, the New Business Planning Department, the DX Promotion Department, and the Sustainability Promotion Department, will spearhead our efforts to become an enterprise that can help build a sustainable society.



● Toward the centenary

As chemical manufacturers, we are urged to contribute to society and resolution of global environmental issues.

Damage attributable to abnormal weather in recent years and mounting concern about marine plastic pollution have made the global environment a focus of increasing urgency over the past 12 months. Society is changing faster than ever. Since the beginning of 2020, the spread of COVID-19 from its place of origin in China has been posing a global threat. Chemical manufacturers are asked how they can help both to enrich people's lifestyles and realize a sustainable

society. For example, they have to do much more than ensure their plants are working to reduce CO₂ emissions in manufacturing processes. They are urged to vigorously tackle development of new products while constantly thinking about how those products can best contribute to society and to resolution of global environmental issues. And as for products, over and above sales, what is required is a comprehensive approach encompassing the entire supply chain from product development, purchasing, and manufacturing through to logistics, consumption, recycling, and disposal, considering usage of energy and resources.

Creating products that contribute to sustainability is an essential yet difficult task. Every year, in early January I visit Toagosei's business sites where I engage our employees in discussion so as to communicate my message: "Don't just pick an easy task you can finish quickly and be satisfied by completing it. Start with an inherently important and difficult challenge." From now on, I am certain we will be urged to contribute to society and resolution of global environmental issues through manufacturing from a global perspective, rather than from our perspective as a single company.

● Review of 2019

We executed several action plans toward future growth although we did not achieve the targets of the medium-term management plan.

In 2019, the final year of the medium-term management plan "Trajectory Toward Growth 2019," the business environment in which the Group operates deteriorated in the second half as foreign demand weakened and the domestic economy, which had remained robust in the first half, lost momentum. In this environment in which many companies, not least manufacturers, lowered their earnings forecasts, the Toagosei Group was no exception and we did not achieve the initial targets.

On the other hand, in R&D and capital investment,

we accomplished action plans that constitute our springboard toward the centenary, our next milestone, and we have high expectations.

At Toagosei Thailand, our base in Southeast Asia where economic growth is rapid, following the acrylic polymer plant, constructed in the first phase of the project, the elastomer compound plant, constructed in the second phase, started operation. With diverse applications ranging from the automotive, pharmaceuticals, and cosmetics to adhesives and glues, the market for acrylic polymers is expected to expand and the Group intends to continue vigorously cultivating the Asian market.

In Japan, the Nagoya Plant's production system for polymers for lithium-ion batteries has been established. Shipping is increasing smoothly with further expansion expected in 2020.

For liquid hydrogen chloride, a high-purity inorganic chemical with semiconductor applications, we executed capital investment to strengthen the supply system by beefing up product analysis, automatic filling, inspection, etc. Despite a decrease in worldwide semiconductor production in 2019, the impact on the Group was relatively small. The capital

investment we executed in 2019 is expected to greatly contribute to profit from 2020 onward.

Toward creation of the “fourth core”

We aim to create a “fourth core” responsive to new needs in new markets

The Toagosei Group has continued to grow, responding to change in the era and strengthening the business foundation by consistently executing capital investment for existing products. As a result, we have established systems capable of generating stable profit. However, from a medium- to long-term perspective, I have some reservations. For example, if we were to maintain the same product lines, could we generate sufficient profit 10 or 20 years from now? I recognize this is an issue we have to address with determination.

Our product lines can be roughly classified into three categories: commodity chemicals, a business that was already developed by the 1960s; petrochemicals, a business developed from the 1960s onward; and functional chemicals, a business developed from the 1970s up to the present. We need to develop products to constitute a “fourth core” following on from these three product lines as soon as possible.

The outline of the “fourth core” is as yet unclear. As a chemical manufacturer, we have an affinity with products that are a natural extension of our existing products that exploit chemical reactions, such as the synthesis and polymerization in which the Group excels, and envisage them becoming the next core. On the other hand, markets and needs will be different from the previous ones. New needs are emerging with a view to realizing a sustainable society. Our task is to create new product lines capable of meeting new needs in new markets, unconstrained by our current fields, through the leveraging of our expertise as a chemical manufacturer.



● **Basic policies and key initiatives of the Medium-Term Management Plan “Stage up for the Future”**

We will focus on initiatives to “expand high-value-added product businesses,” “increase overseas net sales” and “cultivate and secure excellent motivated employees” to support these endeavors.

The medium-term management plan launched in 2020 is outlined on Pages 13-14. Let me highlight the three key points described below. The subtitle of the new medium-term management plan is “Stage up for the Future.” This embodies our aspirations to become an enterprise on a higher stage by establishing a foothold for creating the “fourth core” for the future while ensuring expansion of the high-value-added product businesses and the overseas business development on which we are currently focusing.

① Expand high-value-added product businesses

The Group uses two approaches for developing new products. One approach is development of a new product based on a hypothesis. We establish a hypothesis concerning new applications of a new chemical substance that we create, in view of its properties, such as higher thermal resistance, then propose such application ideas to existing and prospective customers who have potential needs for products using the substance. The other approach is joint development with a customer. Customers who have confidence in our R&D and production technology capabilities request us to develop materials with particular properties in a specific timeframe for the new products they have in mind and we accordingly tackle joint development of new materials. The deployment of two approaches for development of high-value-added products is among the Group's strengths. We will continue to reinforce development of new high-value-added products by pursuing these two approaches.

② Increase overseas net sales

In order to grow our global business, in addition to expanding sales of acrylic polymers in Southeast Asia

centering on our base in Thailand, we will strive to expand sales of Aron Alpha® household instant glues, launched in Japan in 1971, in East Asia and Southeast Asia. Aron Alpha® became an official Guinness World Record® holder on September 18, 2019, as the longest-selling consumer super glue brand (48 years). However, mindful that its excellent performance and the brand are not necessarily well known throughout the world, we have set up the Global Adhesive Material Division to promote global sales expansion. As well as strengthening sales in the U.S. market (marketed under the Krazy Glue® brand) and in the Hong Kong market (marketed under the AA超能膠 brand) where we already have a certain market share, we will emphasize efforts to expand our market share in East Asia and Southeast Asia where economic growth is rapid.

Besides, we will vigorously promote the Group's distinctive high-value-added products overseas, including polymers and oligomers, inorganic functional materials, and Aronkasei's elastomer compounds, to enhance the overseas sales ratio.

③ Cultivate and secure excellent motivated employees

While strengthening hiring of human resources who will play the central role in development of new products, we are also emphasizing education and training by the Human Resources Development Department. Enhancing operational efficiency of administrative departments through the introduction of IT systems, we will shift the freed-up human resources to R&D and sales departments to maximize their impact. The Group has been promoting workstyle reform, including an increase in the annual paid leave usage rate and reduction of overtime, and Toagosei was certified as a White 500 for the second consecutive year under the program of the Ministry of Economy, Trade and Industry. We will continue our initiatives to improve the workplace environment.

In 2018, partly because of the start of operation of a new plant at our site in Thailand, we expanded local recruitment. We have heard from our overseas sites that, although their employees know Toagosei as a chemical manufacturer, many of them do not know that Toagosei manufactures Aron Alpha® and other products

for general consumers and are unaware of Toagosei's history. Toagosei will issue a book on its corporate history as part of the 75th anniversary project. Reflecting our desire to enable every employee to demonstrate their full potential based on a sure grasp of the Group's identity, we will be distributing a digest of the corporate history book not only in English but also in Chinese and Thai. The translated digest will be used in the education of local employees, deepening their understanding of the Group so as to enable every employee to engage in work with awareness and pride as a member of the Toagosei Group. We are endeavoring to cultivate a sense of unity throughout the Group and enhance the quality of human resources from a long-term perspective.

● Issues in 2020 and reorganization

With the aim of creating the “fourth core” to drive medium- to long-term growth, we established the New Business Planning Department, the DX Promotion Department, and the Sustainability Promotion Department.

We conducted a reorganization on January 1, 2020 as described below. The objectives are to “strengthen priority fields,” “address contemporary themes,” and “promote Group management and administration.”

① Strengthen priority fields

● Establishment of the New Business Planning Department

The New Business Planning Department was newly established as a department dedicated to creation of the “fourth core.” While conducting cross-departmental activities to extract knowledge within the company, the New Business Planning Department will also deepen collaboration with external parties, such as through promotion of open innovation.

● Establishment of the Global Adhesive Material Department

We established a new department whose mission is to develop new markets, such as East Asia and Southeast Asia.

● Repositioning of the Mobility Development Project

The Mobility Development Project was launched in January 2019. However, recognizing completion of the preparatory phase for mobility development following establishment of a production system for polymers for lithium-ion batteries and other developments at the Nagoya Plant, we established a mobility products development section within each division to proceed to the next phase.

② Address contemporary themes

● Establishment of the Digital Transformation (DX) Promotion Department

The Group has been using AI, for example, for gathering and processing plant operational data. Recognizing that application of AI can be expanded to development of chemicals and materials in line with the progress of AI technology, we established the DX Promotion Department.

● Establishment of the Sustainability Promotion Department

Society's requirements concerning sustainability are evolving rapidly in terms of their scope and level. Previously, the Environment & Safety Department, the Quality Assurance Department, the General Affairs & Legal Department, the Investors & Public Relations Department, and other departments had been engaged in ESG (Environment, Society and Governance) activities as concurrent duties. Recognizing that a dedicated department is required to satisfy the scope and level of society's requirements, we established the Sustainability Promotion Department. We have high expectations of this new department. As well as addressing issues related to SDGs that Toagosei can help resolve, the new department will spearhead our efforts to develop products useful for protection of the global environment and new businesses.

③ Promote Group management and administration

● Repositioning of the Information System Department as part of the Corporate Strategy Division

We are streamlining business processes by utilizing IT systems while promoting standardization of administrative processing. Since certain elements of administrative processing cannot transition in their entirety to processing by IT systems, considerable human resources remain occupied with administrative processing. Therefore, we will promote streamlining more strategically. Besides, many of the business processes of the Information System Department can be executed by telework. I think the department can be a model case for workstyle reform.

Strengthening corporate governance

In 2017, five out of 13 directors of Toagosei were outside directors. Now, in 2020, of 14 directors, seven are outside directors, including one female director. The increase in the number of outside directors is resulting in positive changes. For example, discussion at the Board of Directors has become vitalized and during audits of business sites, directors engage in dialogue with employees at the sites and their findings are summarized and reported at the Board of Directors.

In pursuit of more open management, we abolished the takeover defense measures in 2019 and introduced a stock compensation plan for remuneration for directors in 2020.

To our stakeholders

We will promote management to meet our shareholders' and investors' expectations.

The Toagosei Group Basic Policy on Corporate Governance was revised in December 2019. We added Article 9 Paragraph 2, stating, "The Group shall make due efforts on sustainability issues such as social and environmental issues to achieve the sustainable development of society as well as enhance the Group's corporate value." As part of ESG initiatives, Toagosei expressed its support for the Task Force on Climate-related Financial Disclosures (TCFD) in June 2019. Moreover, Article 4 Paragraph 1 of the Toagosei Group Basic Policy on Corporate Governance now states, the Company shall "improve consolidated total return ratio." Accordingly, we announced a plan for share buybacks in January 2020 as part of efforts to strengthen the shareholder return policy.

The increase in the number of investors with long-term perspectives owing to expansion of SDG investing and ESG investing is a favorable trend for us. The Group will meet shareholders' and investors' expectations by promoting management that adopts shareholders' perspectives. In closing, we sincerely ask shareholders, investors and other stakeholders for further understanding and continued support of the Toagosei Group.

Mikishi Takamura

Profile

April 1980	Joined the Company
April 2002	General Manager, Finance Group, Administrative Department
April 2005	General Manager, Human Resources & General Affairs Group, Administrative Department
April 2006	General Manager, Human Resources & General Affairs Group and General Manager, Investor Relations & Public Relations Section, Administrative Department
April 2008	Deputy Plant Manager, Nagoya Plant
March 2010	Director, General Manager, Administrative Department
April 2012	Director, General Manager, Administrative Division
March 2013	Director, General Manager, Corporate Strategy Department
March 2015	Vice President and Representative Director and General Manager, Corporate Strategy Division
November 2015	President and Representative Director (to present)



Business Overview and Growth Strategy

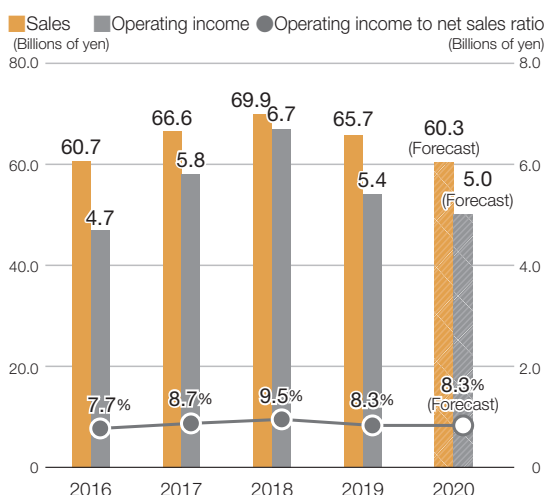
Commodity Chemicals



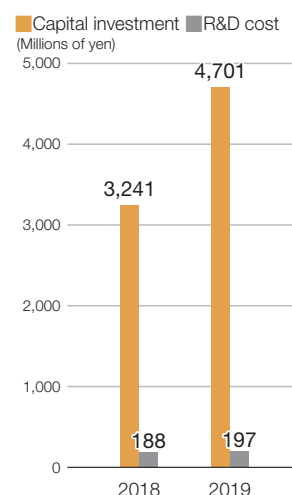
Shoji Takayama

Executive Officer
General Manager,
Commodity Chemicals Division

Sales and Operating Income by Segment



Capital investment and R&D cost



Business Overview

Among Toagosei's wide variety of businesses, the inorganic chemical business has the longest history. Toagosei supplies products such as caustic soda, caustic potash, hydrochloric acid, chlorine, sodium hypochlorite, various chlorides, sulfuric acid and industrial gases. These inorganic chemicals are widely used as indispensable products in diverse industries, supporting people's lives.

The acrylic business is one of the core businesses of the Toagosei Group. We have established an integrated acrylic chain with product lines extending from upstream to downstream. Acrylic monomers are the starting point of this acrylic chain. Distinguished by high quality and cost competitiveness, the acrylic monomer business contributes to the business expansion of downstream acrylic derivatives, such as polymers and oligomers.



Acrylic ester plant at the Nagoya Plant

Topics

Acquired Halal Certification

In view of prospects for increasing demand for halal products, eight inorganic industrial chemicals, such as caustic soda and sodium hypochlorite manufactured at the Nagoya Plant, have been certified as halal products by the Japan Muslim Association.



Updated the Electrolysis Equipment for Caustic Potash

To ensure the stable supply of caustic potash and to enhance its competitiveness, the aging electrolysis equipment for caustic potash was updated to the latest facility. We are aiming to optimize the production structure including the production of high-purity products to keep up with the recent growth of these chemicals.

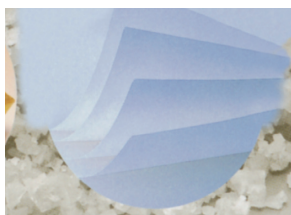


Medium- to Long-term Growth Strategy

The foundation of the Toagosei Group, Commodity Chemicals advances through ongoing capital investment and the improvement of productivity, underpinning expansion of high-value-added products such as high-purity inorganic chemicals and downstream acrylic products.

Electrolysis business

In the electrolysis business, we are striving to establish a stable and efficient production base, strengthening competitiveness through vigorous investments to ensure that profit is maintained and increased. In 2013, our Tokushima plant became the first in Japan to install an electrolysis machine for commercial operation using the gas diffusion electrode method, which can cut electricity consumption by 30%, and is currently continuing power-saving operation. In 2016, the Tokushima Plant installed a manufacturing facility for sodium hypochlorite that satisfies the special grade standards specified by the Japan Water Works Association (JWWA). Additionally, in 2017, we upgraded the electrolysis equipment for caustic potash.



Caustic soda and sulfuric acid are used in the manufacture of paper and pulp, and sodium hypochlorite is used in sterilizing tap water and sewage treatment.

Acrylic monomer business

In the acrylic monomer business, a new 80,000-ton facility for acrylic acids was launched at Oita Chemical in 2014 to prepare for increasing demand for downstream acrylic products over the medium to long term and to strengthen cost competitiveness. We are working to establish a new business scheme for production and sales in Japan and overseas, including the Singaporean operations, to further improve our earnings power.



Acrylic acid is a raw material for highly-water-absorbent resins and thickeners. Acrylic esters are used for raw materials for pressure-sensitive adhesives and paints.

Industrial gas business

In the industrial gas business, we have been pursuing an aggressive strategy to expand business by strengthening industrial gas sales in the Chubu and Hokuriku regions to boost facility utilization at the production base, establishing an efficient supply system. A large-scale capital investment plan with the objective of maintaining stable production far into the future is being implemented.

Relevant SDGs



Addressing Social Issues

Protection of the marine environment

Social issues

Ballast water is local seawater or river water that is taken up in empty ships' special tanks at an unloading port for vessel stabilization. It is later discharged at the loading port. Disruption of ecosystems caused by non-native marine organisms or bacteria carried with the ballast water has become an issue.

Toagosei Group's initiatives

The ballast water management system developed by the Toagosei Group with JFE Engineering Corporation combines the filtration of large plankton and the chemical treatment of ballast water. An environmentally friendly solution is realized by the use of TG Ballastcleaner®, a chlorinated mixture manufactured by Toagosei, for killing aquatic microorganisms in the ballast water (main ingredient: sodium hypochlorite) and TG Environmentalguard®, which detoxifies any chlorine residue in the treated ballast water (main ingredient: sodium sulfite) and helps avoid any secondary pollution by the chemical treatment. In cooperation with business partner JFE Engineering Corporation, Toagosei is developing a global supply network for chemical agents and striving to spread the ballast water management system.



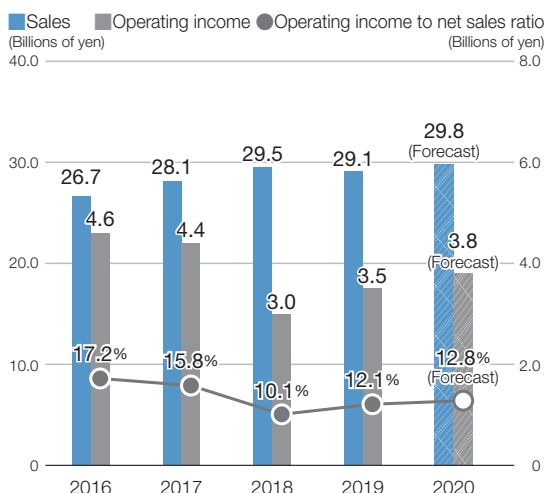
Business Overview and Growth Strategy

Polymer & Oligomer

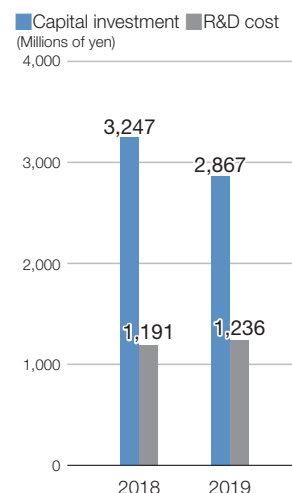


Hidenori Kobuchi
Executive Officer
General Manager,
Polymer & Oligomer Division

Sales and Operating Income by Segment



Capital investment and R&D cost



Business Overview

Acrylic polymers comprise a large group of products created from various combinations of molecular weights and copolymerization compositions based on acrylic acid or acrylic esters. These acrylic polymers, including dispersants, thickeners, gelling agents, flocculants, pressure-sensitive adhesives and coating agent, are contributing to society in various fields. We also have a wide product lineup developed utilizing proprietary technologies such as SYMAC® and RESEDA® graft polymers, ARUFON® solvent-free acrylic polymer, and high-performance powder products.

Regarding UV-curable resins, the Company offers ARONIX® special acrylic monomers and oligomers and ARON OXETANE® cationic curable resins. These resins can be cured in a short time by exposure to UV light and do not require solvents, thus eliminating the need for a drying process. They offer advantages such as enhanced productivity, energy saving and low environmental impact, and are used in a variety of products including adhesives, inks, paints and display materials.



Polymer products are also used for eco-cars and cosmetics

Topics

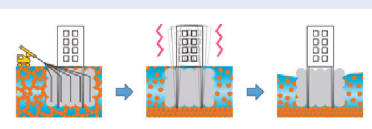
Special Acrylic Polymers for Lithium Ion Batteries

We have developed special acrylic polymers for lithium ion batteries (LIB) using our unique polymerization technology. They are applied as electrode materials that improve battery performance and durability. Their sales are rising in line with the diffusion of electric vehicles. We are responding to the demand through high-quality production at a dedicated plant.



CXP Grout for Soil Stabilization as a Liquefaction Countermeasure

The incidence of large-scale natural disasters, including earthquakes, is increasing. Toagosei's high-strength, high-durability, safe, proprietary polymer CXP is highly effective as a measure against liquefaction. By helping to protect social infrastructure from liquefaction, CXP is contributing to realization of a sustainable society. (For details, refer to Feature on P33.)



Medium- to Long-term Growth Strategy

We aim to expand high-value-added products in the downstream acrylic products field, create new businesses based on outstanding seed technology, and expand our international businesses.

Polymer business

In order to expand the polymer business both in Japan and overseas, we will aggressively engage in new development while continuously launching high-value-added products that meet current needs. In particular, with the aim of establishing a high-performance powder business as a new mainstay, we will proceed with the development of materials for the automobile and cosmetics sectors. Moreover, by positioning Toagosei (Thailand) Co., Ltd. as the production and development base in Asia, we will promote high-performance and high-value-added products in Asia.



Toagosei (Thailand)

Oligomer (UV-curable resins) business

In the oligomer business, we aim to increase our market share in Asia by offering distinctive products, including products focused on local needs. Taiwan Toagosei Co., Ltd. and Toa-Jet Chemical Co., Ltd. in Taiwan, and TOA-DIC Zhangjiagang Chemical Co., Ltd. in China are bolstering their local technology development capabilities, and expanding sales locally and to adjacent countries. They will also strive to vigorously capture demand related to 5G while endeavoring to eliminate the use of solvents and responding to other trends.



TOA-DIC Zhangjiagang Chemical

Flocculant business

The Group's MT Aqua Polymer, Inc. manufactures and sells the high-quality polymer flocculant, ARONFLOC®. We offer outstanding products and appropriate solutions for wastewater and sludge purification processes, which are becoming increasingly diverse. We will promote overseas business development centering on Asia, which is a promising market, through collaboration with wastewater treatment plant manufacturers and other partners.



Relevant SDGs



Addressing Social Issues

Environmentally friendly UV-curable resins

Social issues

The need to tackle various social issues, such as global warming and air pollution, is spurring strong demand for environmentally friendly products. UV-curable resins, an example of environmentally friendly products, are contributing to greater energy saving, higher productivity, and lower environmental impacts compared with solvent-based or water-based molding materials.

Toagosei Group's initiatives

The lineup of ARONIX® UV-curable resins was enriched with the addition of new multifunctional acrylates by employing a new transesterification process based on Toagosei's proprietary technology. This new process 1) eliminates the use of toluene, 2) achieves higher-purity products, and 3) realizes industrial-scale production of products that was unattainable using the conventional process. Thanks to the elimination of toluene use, products such as paints, inks, and adhesives can meet the market needs for environmental friendliness and their higher purity enables satisfaction of high quality requirements in applications for electronic materials, etc. Use of glycerol and sorbitol, which are plant-derived raw materials, resulted in realization of acrylates with unconventional characteristics such as low viscosity, quick hardening, and complete water-solubility. This new process will enable us to satisfy various market needs and contribute to society.



Business Overview and Growth Strategy

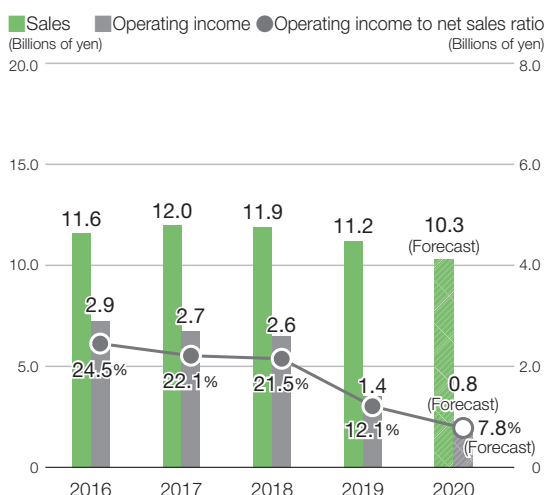
Adhesive Material



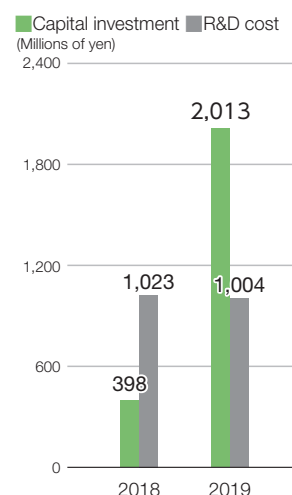
Kazutaka Yamada

Executive Officer
General Manager,
Adhesive Material Division

Sales and Operating Income by Segment



Capital investment and R&D cost



Business Overview

The Adhesive Material Division has been contributing to customers' technological innovations in pursuit of lighter and thinner products and parts, productivity improvement, and cost reduction through the adhesion of different materials such as plastics, metals, wood, rubber and leather.

The Adhesive Material Division offers Aron Alpha®, which is synonymous with instant glues, as well as a wide range of functional adhesives including Aron Mighty®, ARON MELT® and ARONIX® that meet diverse needs for industrial adhesives in the electronic materials, automotive and precision equipment fields. In addition, we are striving to develop products that leverage our proprietary technologies such as the Aron Powder® powder paint and the SQ Series of silsesquioxane derivatives.

Our business provides countless opportunities to enrich lives through our products.



A diverse product lineup for a wide range of uses including Aron Alpha®, which is synonymous with instant glues

Topics

Awarded Guinness World Record

Aron Alpha® became an official Guinness World Record holder on September 18, 2019 as the longest-selling consumer super glue brand (48 years).



Participated in the 3rd JOINING JAPAN —Adhesion & Joining Expo—

We exhibited products of the Adhesive Material Division, the Polymer & Oligomer Division, the Performance Chemicals Division and Aronkasei. We welcomed many visitors not only from Japan but also other Asian countries, indicating the strong interest in the Toagosei Group's products.



Global Adhesive Material Division

Our instant glues for consumer applications maintain high market shares in Japan, the U.S. and Hong Kong. The Global Adhesive Material Division was established in 2020 with the aim of marketing our instant glues for consumer applications in more countries around the world. In 2019, our project team conducted global market research and prioritized the candidate countries for our market entry. Having formulated a plan for market entry in the candidate countries and put in place local organizational structures, we are starting full-scale market development from 2020.

We will focus on development of China and Southeast Asian countries, following Japan and the U.S. It will be a new challenge for us as Asian markets are changing rapidly and trade practices there are different from those in our existing markets, such as Japan and the U.S. In the Asian markets, while fully leveraging the brand capability of Aron Alpha® cultivated in Japan, we will conduct marketing rooted in the local markets and promote development of original local products and their market introduction. Moreover, we will vigorously engage in e-commerce in addition to sales at physical stores.

Through establishment of a new business model for emerging markets, we will promote the global strategy for Aron Alpha® and drive overseas business expansion of the entire Group.



Shigeyuki Aota
Executive Officer
General Manager,
Global Adhesive Material Division

Medium- to Long-term Growth Strategy

In the instant glue business we aim to maintain our position as the top brand by enhancing brand recognition. In the functional adhesives business, we will develop highly functional products that meet the needs in this growing field.

Instant glue business

Aron Alpha® is the leading brand among instant glues. To maintain and increase our market share by further bolstering its brand power, we are vigorously executing advertising and sales promotion. In recent years, we have been emphasizing efforts to increase brand recognition, mainly among young people, by utilizing the Internet.

In addition to development of glue products, we are focusing on development of packaging to meet new market needs.



Advertisement "Kuttsuke Seishun Project"

Functional adhesives business

We will emphasize development of glues used for substrate materials and various parts, targeting the telecommunication field, mindful that commercial 5G next-generation wireless communication services were launched in Japan in spring 2020, and the rapidly evolving mobility field.

We will also emphasize initiatives in the painting and processing fields in order to enhance our proposal capabilities in the value chain.

Relevant SDGs



Addressing Social Issues

Efficient utilization of resources

Social issues

In view of the growing scarcity of resources, there is an increasing need to recycle aged or broken goods. Adhesives are used for repairing or strengthening products used in the home, making it possible for people to use cherished items for a long time.

Toagosei Group's initiatives

Toagosei's Aron Alpha® instant glues are familiar adhesives used in the home that contribute to efficient utilization of resources. The Aron Alpha® lineup includes several types corresponding to different applications so as to meet the diverse needs of customers.

Business Overview and Growth Strategy

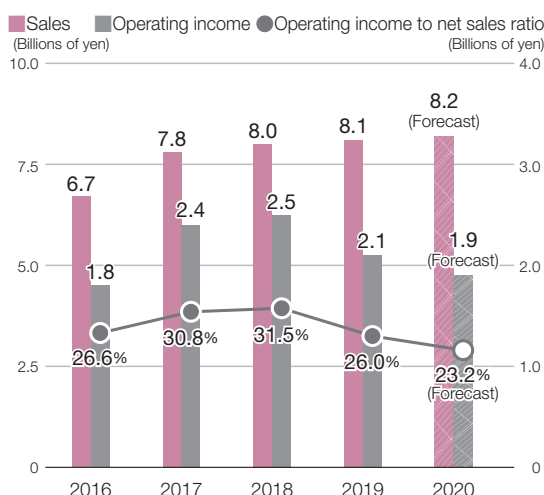
Performance Chemicals



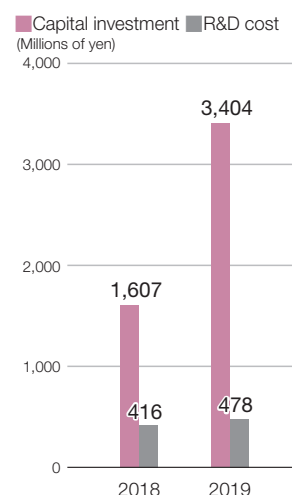
Fumito Furukawa

Executive Officer
General Manager,
Performance Chemicals Division

Sales and Operating Income by Segment



Capital investment and R&D cost



Business Overview

The Performance Chemicals Division handles inorganic chemicals indispensable for safer, more comfortable and more convenient lifestyles. We supply products with the maximum purity such as liquid hydrogen chloride and hexachlorodisilane which are applicable to miniaturization and integration of semiconductor devices. In the inorganic functional materials business we manufacture unique products, such as IXE® and IXEPLAS® ion-trapping agents, which are additives that increase the reliability of electronic materials, and KESMON® and NOVARON®, which perform antimicrobial, deodorizing and other comfort-enhancing functions in textile and plastic materials.



Topics

Tokushima Plant's Analytical Lab to Be Refurbished

Following the Yokohama Plant in 2019, we will refurbish the analytical lab at the Tokushima Plant to further strengthen the quality management system and enhance quality.



New analytical lab at the Yokohama Plant completed in 2019

Tokushima Plant's Manufacturing Facilities Enriched

Needs for deodorizing, antibacterial and other functions that contribute to a comfortable living environment are increasing. In order to meet such needs, we have enriched manufacturing facilities for inorganic functional materials at the Tokushima Plant. We are ready to satisfy increasing demand while meeting needs for ever-higher quality.



Medium- to Long-term Growth Strategy

We will pursue further enhancement of purity and functionality to unlock the potential of inorganic chemicals.

High-purity inorganic chemicals business

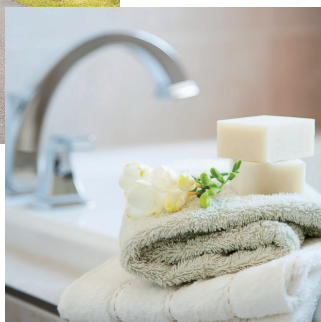
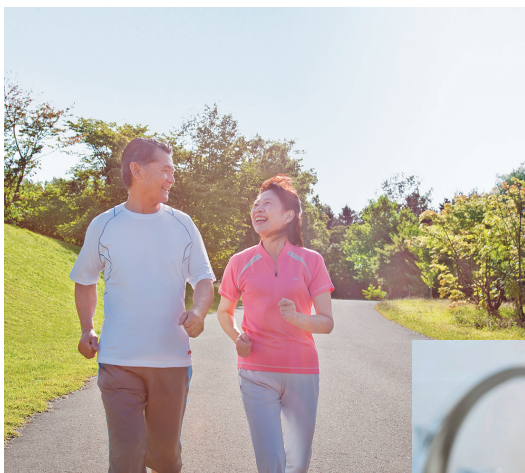
Demand for semiconductors, which are used in various fields, is expected to continue to grow centering on communication and mobility. We will expand our facilities and strengthen the stable supply system to fulfill our supply responsibilities as a leading manufacturer of liquid hydrogen chloride in Asia where semiconductor plants are concentrated. Capitalizing on our track record with our existing products, we are also emphasizing development of new products.



Tube container filling yard at the Tokushima Plant

Inorganic functional materials business

We are continuing to expand our marketing of the deodorant KESMON[®] and antimicrobial agent NOVARON[®], which create a clean and comfortable living environment, and the IXE[®] ion-trapping agent, which supports miniaturization of electronic components. We are also strengthening our collaboration with our overseas bases in the growth markets of Asia including Taiwan, South Korea, China and Thailand.



Relevant SDGs



Addressing Social Issues

Creation of comfortable space

Social issues

Formaldehyde and acetaldehyde are substances that potentially cause sick building syndrome (SBS). In Japan, measures to eliminate aldehyde gas in living spaces include replacement with an aldehyde-free material and the use of aldehyde deodorant. Today, efforts are being made in many Asian countries to eliminate aldehyde gas.

Toagosei Group's initiatives

The KESMON[®] chemisorption deodorant series developed by Toagosei absorbs various unpleasant odors existing in living spaces and is also highly effective for reduction of aldehyde gas. We intend to expand the marketing area beyond Japan to throughout Asia so as to contribute to the creation of comfortable and safe living spaces. The lineup has been enriched and the KESMON[®] series is increasingly used in such fields as housing and building materials, interiors, and automobile interior materials.



Business Overview and Growth Strategy

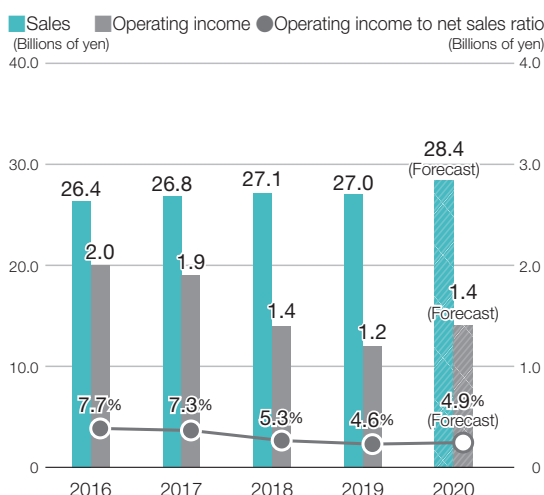
Plastics



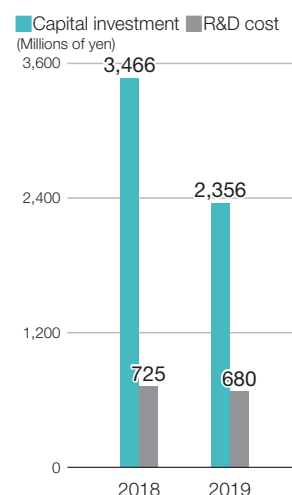
Shinichi Sugiura

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

Sales and Operating Income by Segment



Capital investment and R&D cost



Business Overview

In 1951, Aronkasei Co., Ltd. developed the first rigid PVC piping product in Japan, called ARON PIPE®. Ever since, Aronkasei has been a pioneer in the field of piping equipment, offering joints, chambers and other items. Aronkasei has launched various products utilizing its processing technology as a leading manufacturer of nursing care products, under the Anjyu brand. Leveraging its long-cultivated technological expertise, Aronkasei also provides elastomer compounds endowed with sophisticated new functions to users in Japan and overseas. Aronkasei is vigorously developing business while broadening its business field, which currently centers on piping equipment, construction repair materials, nursing care products, and elastomers, from items that contribute to comfortable daily living to infrastructure development sustaining entire communities.



Aronkasei's strengths

Topics

Elastomer Plant in Thailand Comes on Stream

Construction of an elastomer plant on the site of Toagosei Thailand was completed in August 2019. It is Aronkasei's first overseas production base. Through its sales subsidiary Aronkasei (Thailand) Co., Ltd., Aronkasei began sales of elastomer mainly in Asia where demand is growing.



Anjyu-Brand's 25th Anniversary

Our nursing care brand "Anjyu" celebrated its 25th anniversary. At this milestone, under the catchphrase "Transform what you want to do to what you can do," we released new products, including the Ikotto Air® stylish lightweight rollator and bathing care products with enhanced functions, such as shower chairs, bathtub steps, and non-slip mats for bathrooms.

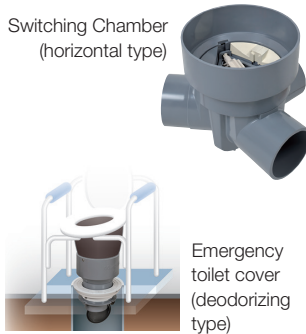


Medium- to Long-term Growth Strategy

We are utilizing our creative manufacturing capabilities, collaborating with each Group company and proactively taking on the challenge of expanding sales both in Japan and overseas.

Piping equipment business

In our efforts to develop the piping equipment business, we are focusing on three priority fields that offer good prospects for rising demand: flooding and water seepage countermeasures, earthquake resistance and disaster prevention measures, and countermeasures for aging infrastructure. In pursuit of further expansion of construction repair materials, we will bolster proposal-driven sales targeting the growing refurbishment market.



Nursing care products business

In the rental market for nursing care products, which is expected to experience continued growth, in 2019 we released the Ikotto Air® rollator and added new models to the AT-C lineup of rental handrails. We aim to further increase our share by rolling out new products. Moreover, we will vigorously promote entry in new areas not covered by long-term care insurance and strengthen overseas sales.



Elastomer compound business

Centering on application fields such as household items, automotive, home appliances, healthcare, and food, we will continue to work closely with domestic and overseas customers in our development activities and contribute to society as a high-performance elastomer compound manufacturer. Through sales subsidiary Aronkasei (Thailand) Co., Ltd., we will endeavor to expand sales of elastomer compounds in the Asian market where demand is growing.



An example application of elastomer compounds (Pen grips)

Relevant SDGs



Addressing Social Issues

Support for seniors' lifestyles

Social issues

With a quarter or more of Japan's population aged 65 or over, population aging has progressed further in Japan than in any other country, making Japan the world's first super-aged society. The constraints on the availability of hospital or nursing home beds mean that many will require care at home. The need to improve living conditions for in-home care and reduce the burden on care givers is becoming an increasingly pressing social issue.

Toagosei Group's initiatives

Aronkasei is developing a line of nursing care products under the Anju-brand to support safer and more comfortable in-home care for the elderly, including portable toilets and handrails that can be installed easily without the need for construction work. The Toagosei Group is committed to supporting better lifestyles for seniors through the manufacture and sale of nursing care products for use in various settings.



R&D

Supporting the Growth Strategy



General Center of R&D

R&D at the Toagosei Group

The Toagosei Group's basic policy on research and development is fourfold:

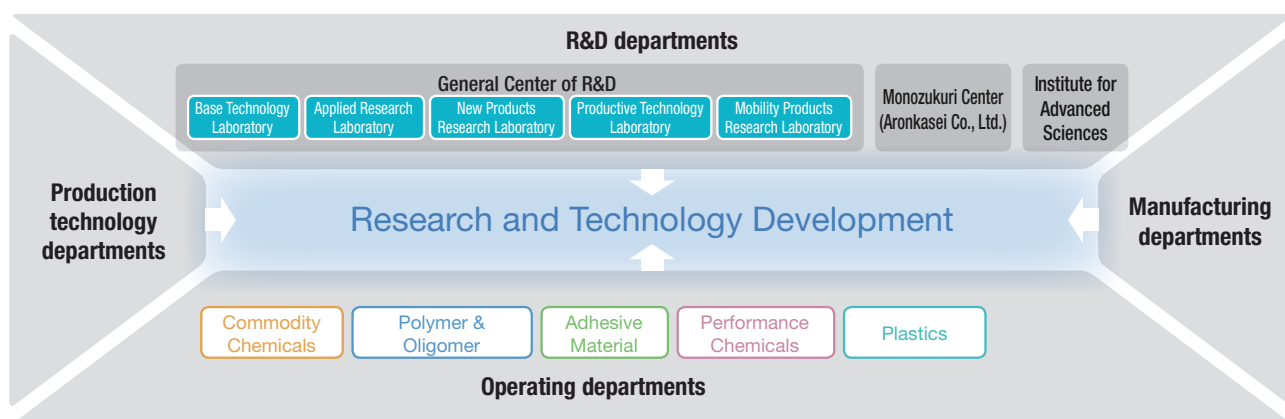
- (1) Concretization of R&D themes leading to creation of new businesses that will comprise the fourth core
- (2) Promotion of open innovation and R&D utilizing external resources
- (3) Acceleration of R&D through the introduction of electronic lab notebooks and a materials informatics (MI) system
- (4) Intellectual property strategy contributing to expansion of high-value-added business and creation of new business units

On the research 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.

R&D System

The Toagosei Group aims to benefit society while ensuring the Group's sustainable development by supplying a wide range of useful chemical products. To accelerate product development in existing areas and hasten the development of products in new areas with growth potential, the General Center of R&D management is organized so all R&D activities from basic and applied research to product 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.

R&D System



“TREND,” the Group’s Annual R&D Report

Since 1998, the Group has published an annual R&D report entitled “TREND” to review the year’s activities in R&D and the development of production technology. Articles on the latest Group research can also be viewed on the company website.

“TREND” is available on the Toagosei website in Japanese. From the top page, select R&D, and then select TREND.

<http://www.toagosei.co.jp/develop/theses/> (in Japanese only)





Institute for Advanced Sciences

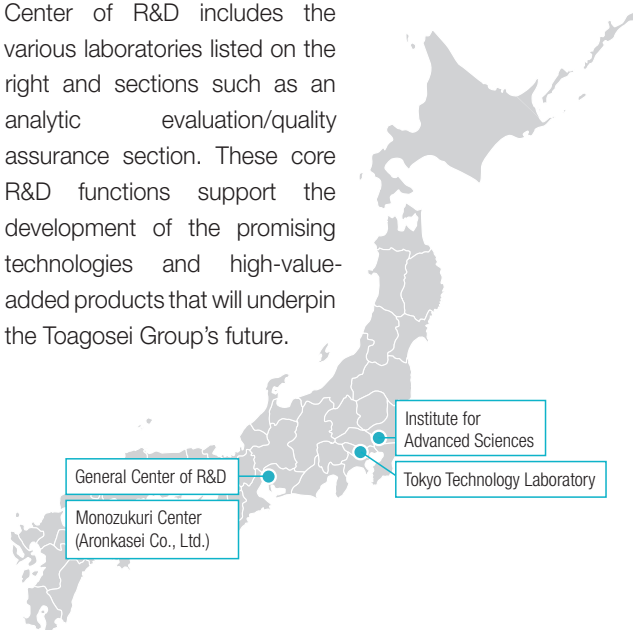


Monozukuri Center (Aronkasei Co., Ltd.)

R&D Bases and Initiatives

General Center of R&D

Opened in 2011, the General Center of R&D includes the various laboratories listed on the right and sections such as an analytic evaluation/quality assurance section. These core R&D functions support the development of the promising technologies and high-value-added products that will underpin the Toagosei Group's future.



Base Technology Laboratory	<ul style="list-style-type: none"> In addition to actively supporting research and development for production lines, focusing on the four pillars of "analysis," "physical properties evaluation," "new synthesis," and "inquiry," we aim to establish elemental technologies that will constitute strengths of the Toagosei Group in the future.
Applied Research Laboratory	<ul style="list-style-type: none"> We also conduct blue-skies research outside our current business and in areas where we lack the technologies to commercialize products, from the first stage all the way to product realization.
New Products Research Laboratory	<ul style="list-style-type: none"> We aim to develop new products in partnership with customers by leveraging the technologies we have cultivated through basic research, applied research, product development, and production technology development.
Productive Technology Laboratory	<ul style="list-style-type: none"> In addition to improving production capabilities, reducing costs and enhancing quality in existing business, we work together with the laboratories in the General Center of R&D to accelerate the development process.
Mobility Products Research Laboratory	<ul style="list-style-type: none"> The Mobility Products Research Laboratory was established for the purpose of swiftly offering solutions to the mobility industry, including the automotive sector. We are conducting R&D of innovative adhesion and processing technologies indispensable for production of next-generation batteries, etc.

Institute for Advanced Sciences

The mission of the Institute for Advanced Sciences is to create new business from a mid- to long-term perspective. Our R&D ranges from basic research to applied studies based on the diverse biotechnologies we have cultivated, especially bioinformatics and peptide design technologies via joint programs with the Center for iPS Cell Research and Application, Kyoto University and with the Graduate School of Agricultural and Life Sciences, the University of Tokyo.

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 plastics technology as well as nursing care products, the Monozukuri Center is also developing new fabrication technology for elastomer compounds and other products through collaboration with the General Center of R&D.

Topics

Takaoka Creation Laboratory to be built at the Takaoka Plant

Takaoka Creation Laboratory is under construction at the Takaoka Plant, the Group's principal base for the adhesive material business, for the purpose of reinforcing and expediting the development function for instant glues and various other adhesive agents. The lab is scheduled for completion in mid-2020. Featuring dedicated zones for product display and tour visits, the lab is intended to be a facility that is open to the local community and customers.



Feature: Unique Products



Contributing to Sustainable Community Development

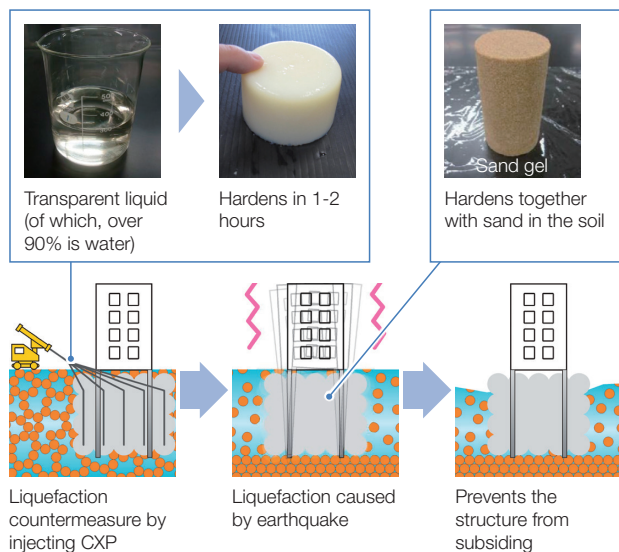
Grout for soil stabilization as a liquefaction countermeasure (CXP)



Toagosei has developed a new method for use as a liquefaction countermeasure jointly with Konoike Construction Co., Ltd. Introduced below are the features of CXP, a grout for soil stabilization, applied for the new method.

Liquefaction countermeasure using CXP grout for soil stabilization

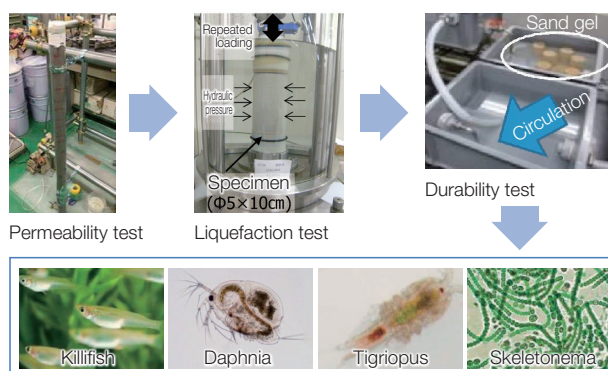
CXP is a liquid resin. Injected into the soil, CXP becomes a polymer gel by chemical reaction in the soil, solidifying the soil to prevent liquefaction.



CXP's features

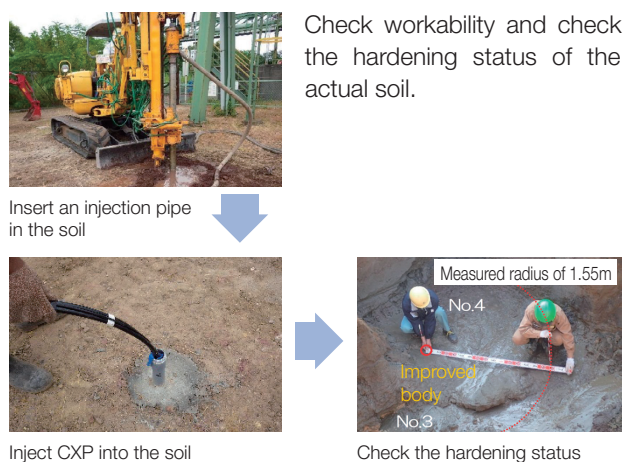
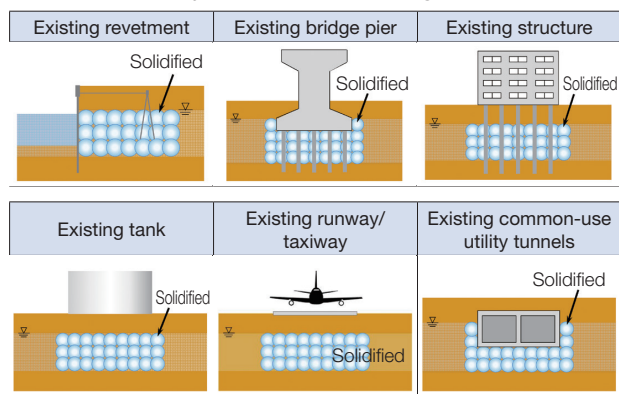
- Highly permeable because of low-viscosity liquid
- Swift polymerization in the soil and exhibition of strengths
- Highly durable with stable skeleton

Commercialization following various evaluations of physical properties, durability, and safety



Application of CXP

Implementation of liquefaction countermeasures for the soil adjacent to various existing structures



New product

Resin Sheet Alternative to Glass ARONIX® Sheet

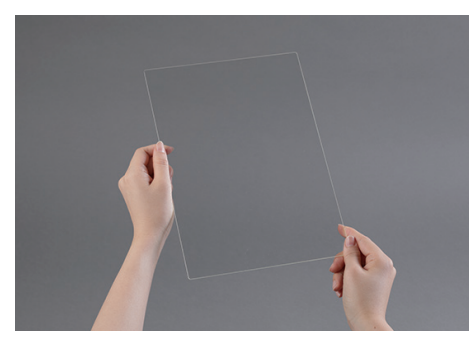
Glass is used for various applications, such as for smartphones, tablets, and automotive displays, but weight and proneness to breakage when dropped are issues. Using proprietary polymerization control technology, Toagosei has developed a resin sheet as an alternative to glass. The newly developed ARONIX® Sheet is a high-definition, lightweight resin sheet that does not break easily.

ARONIX® Sheet will contribute to technological innovation of mobile equipment and automotive products for which light weight and strength are required.

ARONIX® Sheet's features

ARONIX® Sheet is a high-definition, transparent sheet made of Toagosei's special oligomer hardened in a glass mold. Its features, including high heat resistance and low phase difference, are similar to those of glass, unlike other transparent resins, such as acrylic sheets and polycarbonate sheets.

- **High transparency:** Total light transmittance of 92%
- **Heat resistance:** Maintains high elasticity even at temperature of 200°C or higher
- **High degree of hardness:** Pencil hardness of 4H
- **Low phase difference:** Phase difference of 4 nm or less
- **High chemical resistance:** High resistance to a wide range of chemicals
- **High workability:** Precision processing is possible with numerical control routers, etc.



Resin sheet alternative to glass

Heat resistance comparison with other transparent resins

	ARONIX® Sheet 200°C×30min	Acrylic sheet 150°C×5min	Polycarbonate sheet 180°C×5min
After heating			
	Shape maintained	Deformed	Deformed

Chemical resistance comparison with other transparent resins

	ARONIX® Sheet	Acrylic sheet	Polycarbonate sheet
Acetic acid			
Acetone			
	○ (No change)	× (Dissolved)	× (Whitened)

Application

Evaluation of application of ARONIX® Sheet to various products is underway, taking advantage of superior heat resistance and chemical resistance in addition to high definition.



Smartphone and tablet



Automotive display



Cover for sensors for autonomous driving

Directors



1 **President and Representative Director**
Mikishi Takamura (Date of birth: March 28, 1956)

April 1980 Joined the Company
 April 2002 General Manager, Finance Group, Administrative Department
 April 2005 General Manager, Human Resources & General Affairs Group, Administrative Department
 April 2006 General Manager, Human Resources & General Affairs Group and General Manager, Investor Relations & Public Relations Section, Administrative Department
 April 2008 Deputy Plant Manager, Nagoya Plant
 March 2010 Director, General Manager, Administrative Department
 April 2012 Director, General Manager, Administrative Division
 March 2013 Director, General Manager, Corporate Strategy Department
 March 2015 Vice President and Representative Director and General Manager, Corporate Strategy Division
 November 2015 President and Representative Director (to present)

4 **Director**
General Manager, Supply Chain Management Division and General Manager, Tokyo Sales Department
Moriyuki Kenjo (Date of birth: April 18, 1957)

April 1982 Joined the Company
 April 2007 General Manager, Sales Administrative Group, Supply Chain Management Department
 March 2012 Executive Officer, General Manager, Tokyo Sales Department
 January 2016 Executive Officer, Branch Manager, Osaka Branch
 March 2018 Director, General Manager, Supply Chain Management Division and General Manager, Logistics Department, Supply Chain Management Division
 January 2019 Director, General Manager, Supply Chain Management Division and General Manager, Tokyo Sales Department
 January 2020 Director, General Manager, Supply Chain Management Division, General Manager, Sales Administrative Department, Supply Chain Management Division and General Manager, Tokyo Sales Department (to present)

7 **Director** **Audit & Supervisory Committee Member**
Katsuyuki Ito (Date of birth: August 27, 1957)

April 1981 Joined the Company
 April 2007 General Manager, Business Support Department, Aron Kasei Co., Ltd.
 June 2007 General Manager, Corporate Strategy Department, Aron Kasei Co., Ltd.
 June 2008 Resigned from the Company
 Director, Aron Kasei Co., Ltd.
 March 2015 Director, General Manager, Administrative Division of the Company
 January 2017 Director, General Manager, Group Management Division and General Manager, Human Resource Development Department, Group Management Division
 January 2020 Director of the Company
 March 2020 Director (Audit & Supervisory Committee Member) of the Company (to present)

2 **Vice President and Representative Director**
General Manager, Corporate Strategy Division
Nobuhiro Ishikawa (Date of birth: January 8, 1955)

April 1977 Joined the Company
 April 2001 General Manager, Productive Technology Group, Manufacturing Department, Nagoya Plant
 April 2002 General Manager, Manufacturing Department II, Nagoya Plant
 April 2005 General Manager, Acrylic Products Group, Acrylic Products Department
 April 2007 General Manager, UV-curable Resins Group, Functional Materials Department
 March 2008 Executive Officer, General Manager, Acrylic Products Department
 March 2010 Executive Officer, Plant Manager, Nagoya Plant
 March 2014 Director, General Manager, Technology & Production Administrative Division
 January 2016 Vice President and Representative Director and General Manager, Corporate Strategy Division (to present)

5 **Director**
General Manager, Technology & Production Administrative Division and General Manager, Research & Development Administrative Division
Susumu Miho (Date of birth: November 12, 1959)

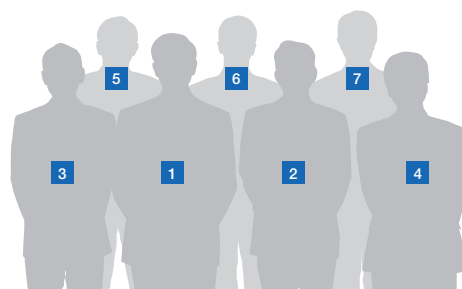
April 1984 Joined the Company
 April 2006 Research Manager, Productive Technology Laboratory, Technology Administrative Department
 December 2006 Chief Executive Officer, TOA-DIC Zhangjiagang Chemical Co., Ltd.
 February 2012 Deputy Plant Manager, Nagoya Plant of the Company
 April 2013 General Manager, Monomer & Oligomer Group, Acrylic Products Department
 March 2016 Executive Officer, General Manager, Acrylic Products Department
 January 2017 Executive Officer, General Manager, Polymer & Oligomer Division and General Manager, New Product Development Department, Polymer & Oligomer Division
 March 2018 Director, General Manager, Technology & Production Administrative Division and General Manager, Research & Development Administrative Division (to present)

3 **Director**
General Manager, Group Administrative Division
Yoshitaka Suzuki (Date of birth: September 14, 1958)

April 1982 Joined the Company
 April 2012 Deputy Plant Manager, Nagoya Plant
 April 2014 General Manager, General Affairs & Legal Department, General Manager, Human Resources Department, and General Manager, Investor Relations & Public Relations Section, Administrative Division
 September 2014 General Manager, General Affairs & Legal Department and General Manager, Human Resources Department, Administrative Division
 March 2017 Director, General Manager, Administrative Division
 January 2019 Director, General Manager, Group Administrative Division
 January 2020 Director, General Manager, Group Administrative Division, General Manager, General Affairs & Legal Department and General Manager, Human Resource Development Department, Group Administrative Division (to present)

6 **Director**
President and Representative Director, Aron Kasei Co., Ltd.
Shinichi Sugiura (Date of birth: August 4, 1955)

April 1978 Joined the Company
 April 2005 General Manager, UV-curable Resins Group, Functional Materials Department
 April 2007 General Manager, Chlorine & Alkali Products Group, Commodity Chemicals Department
 March 2008 Executive Officer, General Manager, Commodity Chemicals Department
 March 2013 Director, General Manager, Supply Chain Management Division
 March 2015 Director of the Company and President and Representative Director, Aron Kasei Co., Ltd. (to present)



Director **Outside****8 Satoru Nakanishi** (Date of birth: August 31, 1953)

April 1976 Joined Mitsui Bank
 April 2004 Executive Officer, Sumitomo Mitsui Banking Corporation
 April 2006 Managing Executive Officer, Sumitomo Mitsui Banking Corporation
 April 2009 Senior Managing Executive Officer, Sumitomo Mitsui Financial Group, Inc. Director and Senior Managing Executive Officer, Sumitomo Mitsui Banking Corporation
 June 2009 Director, Sumitomo Mitsui Financial Group, Inc.
 April 2011 Representative Director, Sumitomo Mitsui Financial Group, Inc. Representative Director and Deputy President, Sumitomo Mitsui Banking Corporation
 April 2013 Director, SMFG Card & Credit, Inc.
 June 2013 President and Representative Director, Cedyne Financial Corporation Director, SMBC Finance Service Co., Ltd.
 March 2017 Director of the Company (to present)
 June 2019 Audit & Supervisory Board Member, Sotetsu Holdings Co., Ltd. (to present)

Director **Outside****9 Yasuhiro Koike** (Date of birth: April 7, 1954)

April 1983 Research Associate, Faculty of Science and Technology, Keio University
 April 1992 Associate Professor, Faculty of Science and Technology, Keio University
 April 1997 Professor, Faculty of Science and Technology, Keio University (to present)
 April 2004 Director, Keio Leading-edge Laboratory of Science and Technology
 April 2010 Director, Keio Photonics Research Institute (to present)
 November 2010 Councillor, Keio University (to present)
 March 2018 Director of the Company (to present)

Director **Outside****10 Yasuo Kitamura** (Date of birth: March 8, 1965)

April 1988 Joined The Industrial Bank of Japan, Limited
 April 1996 Registered as a lawyer
 February 2001 Registered as a lawyer in New York State, the United States
 October 2007 Partner, Kitamura & Hiraga Law Office (to present)
 November 2013 Director, Zakkaya Bulldog Co., Ltd.
 March 2015 Audit & Supervisory Board Member of the Company
 March 2016 Director (Audit & Supervisory Committee Member) of the Company
 December 2018 Audit & Supervisory Board Member, AIMECHATEC, Ltd. (to present)
 March 2019 Director of the Company (to present)
 June 2019 Audit & Supervisory Board Member, G-TEK CORPORATION (to present)

Director **Outside** **Audit & Supervisory Committee Member****11 Nobuhiko Takano** (Date of birth: October 8, 1956)

July 2006 District Director, Moji Tax Office, Fukuoka Regional Taxation Bureau
 April 2007 Chief Investigator, Criminal Investigation Department, Tokyo Regional Taxation Bureau
 July 2009 Chief Examiner, First Taxation Department, Tokyo Regional Taxation Bureau
 July 2010 Director, Second Personnel Division, Planning and Administration Department, Tokyo Regional Taxation Bureau
 July 2012 Director, First Personnel Division, Planning and Administration Department, Tokyo Regional Taxation Bureau
 July 2014 Director, (Health and Welfare), Commissioner's Secretariat, National Tax Agency
 July 2015 Chief Internal Inspector, Commissioner's Secretariat, National Tax Agency
 July 2016 Regional Commissioner, Kumamoto Regional Taxation Bureau
 August 2017 Registered as a Certified Public Tax Accountant (to present)
 March 2018 Director (Audit & Supervisory Committee Member) of the Company (to present)

Director **Outside** **Audit & Supervisory Committee Member****12 Kiyoko Ishiguro** (Date of birth: February 21, 1960)

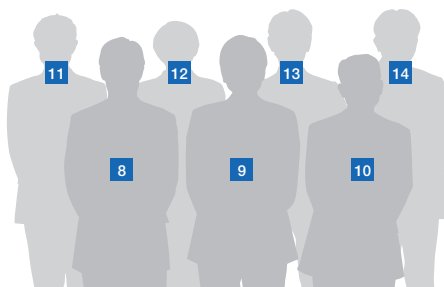
April 1991 Registered as a lawyer
 April 1995 Partner, Noda, Aibara & Ishiguro Law Office (currently Noda Memorial Law Office) (to present)
 April 2000 General Manager, Research Department, Tokyo Bar Association
 April 2006 Chairperson, Public Relations Committee, Tokyo Bar Association
 April 2010 Civil Defense Instructor, Legal Training and Research Institute, The Supreme Court
 June 2010 Director, SATO HOLDINGS CORPORATION
 September 2017 Corporate Auditor, TORAJI CORPORATION (to present)
 March 2019 Director (Audit & Supervisory Committee Member) of the Company (to present)

Director **Outside** **Audit & Supervisory Committee Member****13 Masahiko Yasuda** (Date of birth: September 15, 1963)

November 1988 Joined Aoyama Audit Corporation
 May 1993 Registered as a certified public accountant
 October 2006 Managing Director, PwC Advisory Co., Ltd.
 July 2008 Partner, PwC Advisory Co., Ltd. and Representative Partner, PwC Aarata
 March 2012 President and Representative Director, Benedi Consulting Co., Ltd. (to present)
 August 2012 Chief, Yasuda Masahiko Certified Public Accountant Office (to present)
 March 2019 Director (Audit & Supervisory Committee Member) of the Company (to present)

Director **Outside** **Audit & Supervisory Committee Member****14 Koichi Danno** (Date of birth: July 27, 1954)

April 1978 Joined Mitsui Bank
 April 2004 Executive Officer, Sumitomo Mitsui Banking Corporation
 April 2008 Managing Executive Officer, Sumitomo Mitsui Banking Corporation
 April 2011 Senior Managing Executive Officer, Sumitomo Mitsui Financial Group, Inc. Director and Senior Managing Executive Officer, Sumitomo Mitsui Banking Corporation
 June 2011 Director, Sumitomo Mitsui Financial Group, Inc.
 June 2013 President, Representative Director and COO, SMBC Friend Securities Co., Ltd.
 June 2018 President and Representative Director, Muromachi Co., Ltd. (to present)
 March 2020 Director (Audit & Supervisory Committee Member) of the Company (to present)



Yoshitaka
Suzuki

Director, General Manager, Group Administrative Division, General Manager, General Affairs & Legal Department and General Manager, Human Resource Development Department, Group Administrative Division

Susumu
Miho

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



Establishment of the Sustainability Promotion Department in pursuit of corporate value enhancement

Feature
Management
Dialogue

In January 2020, Toagosei established the Sustainability Promotion Department within the Group Administrative Division. In this dialogue, Mr. Yoshitaka Suzuki, General Manager of the Group Administrative Division, and Mr. Susumu Miho, General Manager of the Technology & Production Administrative Division and Research & Development Administrative Division, discuss the Toagosei Group's mission of contributing to realization of a sustainable society, the background to and purpose of establishing the Sustainability Promotion Department, and the role it will play in contributing to the Group's growth.

Background and purpose of establishing the Sustainability Promotion Department

Suzuki Stage up for the Future, the medium-term management plan covering the period from 2020 to 2022, was formulated in accordance with the principle of reliably fulfilling Toagosei's social responsibilities by making social changes, such as the growing emphasis on the SDGs and ESG investment, catalysts for corporate growth. The Company established the Sustainability Promotion Department on January 1, 2020, to achieve this. Since the Toagosei Group is a chemicals manufacturer, we give due consideration to the environment in the course of our business activities. Looking back, when Toagosei first introduced corporate social responsibility (CSR), our approach was to reorganize activities, which we were practically already implementing, based on the concept of CSR.

linking these CSR initiatives to our business activities while adopting a broad perspective on social issues such as by applying the concept of SDGs in product development. Although the Technology & Production Administrative Division will continue to be responsible for formulating and executing environmental protection policies and measures, management considered it appropriate to set up the Sustainability Promotion Department under the Group Administrative Division in order to accelerate groupwide initiatives.

The Toagosei Group's ESG initiatives and the role of the Sustainability Promotion Department

Miho Since chemicals manufacturing is such an energy-intensive industry, CO₂ emissions reduction is the most important task for chemicals manufacturers in regard to the environmental aspect of ESG (Environment, Society, and Governance). The

Linking global changes, such as growing emphasis on the SDGs and ESG investment and tightening of environmental regulations, to corporate growth

However, this time was totally different. Our purpose in establishing the Sustainability Promotion Department was to make it a driving force linking CSR to manufacturing. Although the Sustainability Promotion Department doesn't engage in product development, we want to make it an organization that serves as a bridge between society and the Toagosei Group.

Miho With climate change, marine plastic pollution, and other environmental problems coming to the fore, the Technology & Production Administrative Division, which I manage, has set numerical targets each year and implemented environmental impact reduction initiatives aimed at reducing greenhouse gas emissions, energy consumption, waste, and environmentally hazardous substances as part of our CSR activities. Until now, these initiatives consisted mainly of activities pursued at manufacturing sites on the basis of annual targets. From now on, we must be more proactive in

manufacture of caustic soda and chlorine by electrolysis of a saline solution is one of the Toagosei Group's original businesses, with large amounts of energy used in the electrolysis process. Therefore, we have prepared a roadmap for reducing CO₂ emissions by 26% from the fiscal year 2013 baseline by 2030 and are implementing initiatives to save energy in the electrolysis process. Also, since the boilers that produce steam used in our manufacturing processes also use large amounts of energy, we are reducing CO₂ emissions by switching boiler fuel from heavy oil and kerosene to natural gas. Even as these energy-related measures at our plants remain key environmental protection activities, contributing to society through environmentally friendly products will become another important initiative. There is growing momentum within the Group to identify social changes and transform them into business opportunities, which



I think that Toagosei is a company capable of winning even greater accolades from investors.

is an effort that includes focusing on reduction of automobile fuel consumption, exhaust cleaning, and the development and supply of materials related to electric vehicles and fuel cell vehicles. Since Toagosei is a company focusing on business-to-business transactions, in some respects our outreach to the general public and to shareholders and investors has been inadequate. Going forward, the Sustainability Promotion Department will spearhead an effort to emphasize how our products contribute to reducing automobile CO₂ emissions.

Suzuki Looking at the social aspect of ESG, since Toagosei is a chemicals manufacturer, we have been modest in our advertising, promotion, and publicity activities compared to B-to-C companies, with the exception of Aron Alpha® instant glues. However, in recent years we have served as an official sponsor of the T League table tennis league and a platinum sponsor of the Minato City Half Marathon, held in Tokyo's Minato Ward, where our head office is located. In this way, we have deepened our involvement with society as a corporate citizen and developed a corporate culture grounded in the desire to be of service to people.

With regard to the governance aspect of ESG, Toagosei transitioned to a company with an audit & supervisory committee governance structure in 2016, and the Company currently has seven inside directors and seven outside directors. At the time of the transition, the Company clearly defined matters to be

resolved by the Board of Directors and the Management Committee, enabling effective discussions by the Company's deliberative bodies. The Company takes pride in having developed a governance structure that facilitates the active adoption of external perspectives.

In addition, to comment further on the environmental aspect of ESG, since 2012 as a member of the Mitsui Group, Toagosei, has participated in a renewable energy power generation project in Tahara City, Aichi Prefecture, with capacity to generate 50 MW of solar power and 6 MW of wind power. I believe that, led by the Sustainability

Promotion Department, the Group's promotion of such social contribution activities that will lead to greater use of clean energy will enhance the Group's presence and increase corporate value.

Miho Although more and more companies are defining the materiality of the SDGs and publicizing their companywide initiatives, the Toagosei Group has yet to fully address these issues. I think that the first task for the Sustainability Promotion Department should be to systematically indicate the Group's current initiatives, future priority areas, and materiality.

Suzuki Since it is individual employees who actually engage in activities, a change of consciousness on the part of all employees will also be important. In addition to instilling awareness and understanding of ESG initiatives using the in-house newsletter, seminars, and other means employed to date, I think it will be necessary to create opportunities to promote discussion among employees as well.

The Toagosei Group's vision to be achieved by strengthening ESG initiatives

Miho It's important, of course, to develop and provide environmentally friendly products. However, to actually enhance corporate value, it's important to offer environmentally friendly products globally, continuously generate profits from these products as a business, and expand this business. Toagosei's R&D and new product development in large measure reflect social needs. Since the Group is increasing investments

aimed at realizing a sustainable society, awareness has grown that we can naturally grow together with society by providing products related to that goal.

Although at one time the point of view that CSR was all about making social contributions and something separate from business activities was firmly entrenched, I think this is not the case with sustainability. One mission of the Sustainability Promotion Department is to link SDGs with Toagosei's products and activities while considering how best to communicate information so as to contribute to global-scale problem-solving. I want to use sustainability as a theme emphasizing that Toagosei is a company capable of changing society. Creation of the "fourth core" business is the key to the Group's medium- to long-term growth. I believe it should naturally be something aligned with realization of a sustainable society.

Suzuki Without question the Toagosei Group is currently moving in the direction of sustainability. Corporate value enhancement is the mission of all employees, and, first of all, our highest-priority should be to define materiality and decide the direction for the Group's sustainability management.

I want to use sustainability as a theme to emphasize that Toagosei is a company that will change society.



As the person responsible for corporate value enhancement initiatives from the perspective of ESG investment, I consider corporate value to be simultaneously a numerical evaluation on the stock market and the value experienced by shareholders and investors who are glad to have invested in Toagosei. I want to give people a deeper understanding of the Toagosei Group by more accurately communicating information to investors. Toagosei will continue to engage in management mindful of the environment, society, and governance, and I intend to further increase corporate value by fully showcasing these efforts.

Endorsement of the Task Force on Climate-Related Financial Disclosures

In June 2019, Toagosei endorsed the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD), which was created by the Financial Stability Board. Electricity is the principal input for the electrolysis facilities used in the production of soda, which is at the heart of Toagosei's business. Accordingly, increases in the cost of electricity pose a significant risk to the business. In recent years, the Group has launched, where feasible, energy efficiency improvement initiatives that go beyond conventional energy conservation measures. Moreover, recognizing that shutdowns and chemical substance leaks resulting from facilities damage or power outages associated with an increase in the number of typhoons, torrential downpours, and other disasters pose a significant business risk, we are

taking appropriate countermeasures.

At the same time, viewing demand for materials necessary for decarbonization of the mobility sector as an opportunity, the Group is strengthening the production system and developing new materials.

Although the Group's disclosure is not yet fully consistent with TCFD guidance on financial disclosures, we will endeavor to provide sufficient, easy-to-understand information disclosure going forward.

TCFD | TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Sustainability Management

Toagosei Group's Corporate Philosophy and Sustainability Management System

Sustainability Policy

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

The Toagosei Group has been offering environmentally friendly products.

We will step up our efforts to continue to develop and offer products contributing to a sustainable and affluent society.

Corporate Philosophy

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

Declaration

(Resolution to achieve the corporate philosophy)

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

We will continue to challenge ourselves. Building on 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.

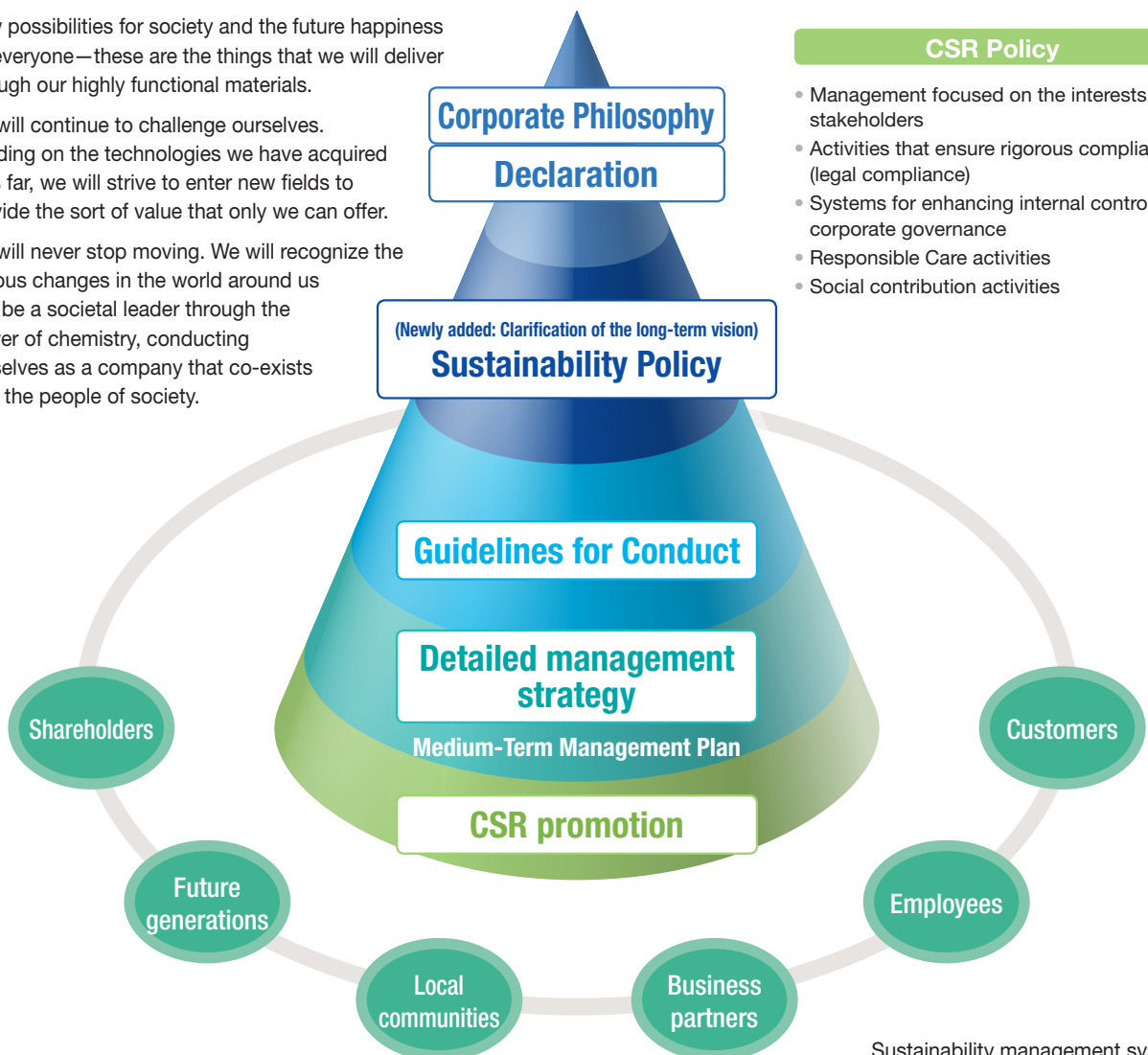
We will never stop moving. We will recognize the various changes in the world around us and be a societal leader through the power of chemistry, conducting ourselves as a company that co-exists with the people of society.

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.

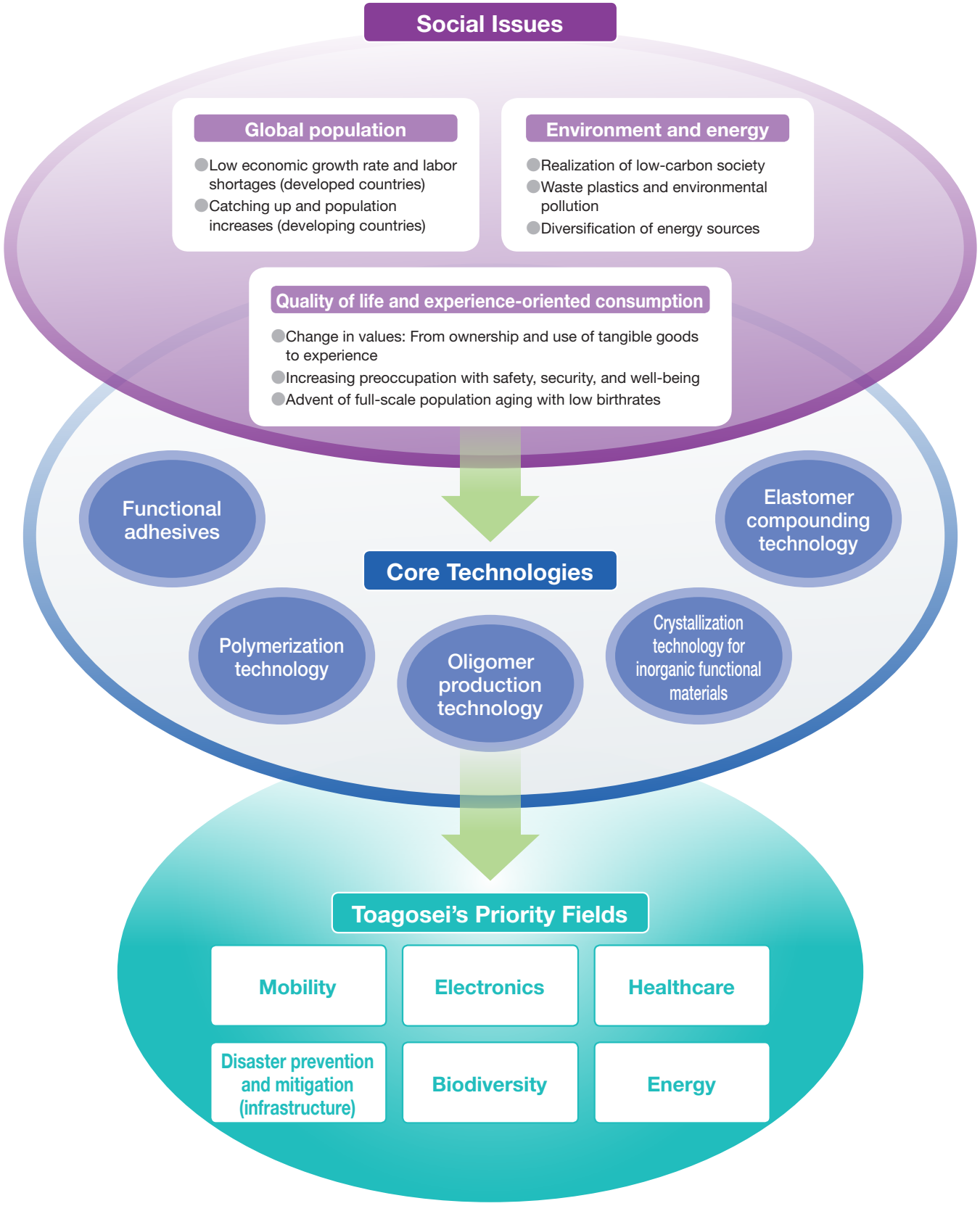
CSR Policy

- Management focused on the interests of stakeholders
- Activities that ensure rigorous compliance (legal compliance)
- Systems for enhancing internal control and corporate governance
- Responsible Care activities
- Social contribution activities










Sustainability management system

External Environment in Which the Toagosei Group Operates, Social Issues, and Priority Fields



Toagosei Group's Initiatives for Sustainable —Provision of Social Value through Business and Strengthening of

1. Provision of Social Value through Business: Priority Fields and Materiality

	Priority fields	Relevant SDGs	Materiality (key issues)	Examples of products
Provision of social value through business	Mobility		Reduction of environmentally hazardous substances concerning automobiles	<ul style="list-style-type: none"> Highly functional materials for batteries for automotive applications Resin as a glass alternative
	Electronics		Industrial innovation/information infrastructure improvement	<ul style="list-style-type: none"> High-purity inorganic chemicals for semiconductor manufacturing Adhesives for information and communication applications
	Healthcare		Creation of a healthy and comfortable living environment	<ul style="list-style-type: none"> Instant glues for medical applications, resins for cataplasms, materials for cosmetics Inorganic antimicrobial agents, deodorants, anti-mold agents
			Enhancement of the quality of life of seniors and people requiring care	<ul style="list-style-type: none"> Nursing care products
	Infrastructure Disaster prevention/ mitigation	 	Stable supply of high-quality water through water and sewage treatment	<ul style="list-style-type: none"> Water treatment chemicals Wastewater treatment agents
			Prevention and mitigation of damage caused by natural disasters	<ul style="list-style-type: none"> Soil solidifying agent as a liquefaction countermeasure Equipment for flooding and water seepage and earthquake countermeasures, piping systems for sewers
	Biodiversity		Marine biodiversity conservation	<ul style="list-style-type: none"> Ballast water treatment agents
	Energy		Mitigation of climate change by reducing CO ₂ emissions	<ul style="list-style-type: none"> Substantial reduction of CO₂ emissions
Initiatives geared to future needs			<ul style="list-style-type: none"> Creation of new business units for new key materials, services, etc. Provision of new value through digital transformation (DX) 	

Development of Society the Corporate Foundation —

Product features

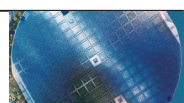
Acrylic polymers used for LIB plates. Realizing large-capacity, high-output, long-life batteries for automotive applications



Special resin with excellent optical performance and heat resistance. Used as an alternative to glass for automotive displays and mirrors, etc., it also contributes to vehicle weight reduction.



We supply high-purity liquid hydrogen chloride, high-purity caustic potash, etc. used for electronic materials manufacturing processes.



Functional materials for bonding substrate materials used for manufacturing equipment for 5G (next-generation communication standard) and various components



We offer products for medical applications that exploit the features of Aron Alpha® instant glues, namely, safety, because solvent-free, and instant solidification. We also produce materials for cataplasms and for cosmetics.



We produce highly functional antimicrobial agents, deodorants, and anti-mold agents that contribute to a healthy and comfortable living environment.



Anjyu-brand includes various nursing care products such as rollators, shower chairs, and handrails for modular baths.



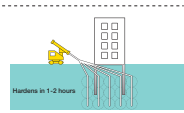
We ensure stable supply of sodium hypochlorite that satisfies the special grade standards indispensable for water purification to produce drinking water.



We supply wastewater treatment agents that flocculate and remove precipitated suspended solids contained in sewage, thereby contributing to reliable sewage treatment.



We develop and produce grout for soil stabilization that is effective for preventing liquefaction in the event of a major earthquake.



We manufacture chambers that enable hygienic use of existing toilets, even if sewage pipes are damaged in the event of an earthquake, by switching the wastewater flow to a sewage tank.



We supply chemical agents for safe treatment of ballast water of ships that can adversely affect the ecosystems of marine organisms when discharged at locations other than its point of origin, thereby contributing to maintenance of ecosystems.



Conversion of fuels for utility facilities
Innovation of manufacturing processes by introducing new technology



Search for new technologies and new products that contribute to society
Visualization of information in the supply chain, provision of new value
Development of new materials by utilizing digital technology

2. Strengthening of the Corporate Foundation: Overview of CSR Activities

	Classification	Focus in 2019	Relevant SDGs	Targets for 2019
Strengthening of the Corporate Foundation	 Environmental Protection	<ul style="list-style-type: none"> Mitigation of global warming 	    	<ul style="list-style-type: none"> CO₂ emissions: 366k tons or less Energy consumption per unit of output: 99% or less from the previous year (CO₂ emissions target for 2030: At least 26% decrease from the result for 2013) Final landfill rate: 0.5% or less Understanding of the details of generated waste, recycling, promotion of waste reduction and understanding of waste generation per unit
		<ul style="list-style-type: none"> Waste reduction and recycling 		
		<ul style="list-style-type: none"> Reduction of emissions of chemical substances 		<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 44 tons or less
	 Process Safety and Disaster Prevention	<ul style="list-style-type: none"> Strengthening of accident prevention measures 		<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials
	 Occupational Health and Safety	<ul style="list-style-type: none"> Promotion of the Zero-accident Campaign 	 	<ul style="list-style-type: none"> Zero lost-time injuries
	 Product Safety	<ul style="list-style-type: none"> Enhanced management of chemical substances 	 	<ul style="list-style-type: none"> Proper response to laws and regulations regarding chemical management Appropriate provision of information to customers etc.
	 Quality Assurance	<ul style="list-style-type: none"> Continuous improvement of product quality 		<ul style="list-style-type: none"> Reduction in the total number of complaints
	 Physical Distribution Safety	<ul style="list-style-type: none"> Enhancement of quality and safety of physical distribution 		<ul style="list-style-type: none"> Reduction in the number of physical distribution problems
	 Corporate Governance	<ul style="list-style-type: none"> Strengthening of corporate governance 		<ul style="list-style-type: none"> Execution of measures to strengthen corporate governance in accordance with the revised version of the Toagosei Group Basic Policy on Corporate Governance Efficient self-inspection and implementation of improvement items without fail Control and supervision of Group companies and provision of appropriate guidance
		<ul style="list-style-type: none"> Strengthening of responses to risk 		<ul style="list-style-type: none"> Periodic risk assessment by the Risk Management Committee Continuation of implementation of measures for reducing risk at each site Continuation of drills at each site in preparation for earthquakes/accidents
<ul style="list-style-type: none"> Timely and appropriate information disclosure to stakeholders 			<ul style="list-style-type: none"> Effective information disclosure from an all-Group perspective 	
 Compliance	<ul style="list-style-type: none"> Inculcation of awareness of the vital importance of compliance. 		<ul style="list-style-type: none"> Offering of education to fully disseminate the new corporate philosophy and the new Guidelines for Conduct of the Toagosei Group Continuous compliance education Periodic delivery of information regarding compliance 	
	<ul style="list-style-type: none"> Thorough understanding of and compliance with laws and regulations relevant to operations 		<ul style="list-style-type: none"> No major violation 	
 Human Resources	<ul style="list-style-type: none"> Establishment of a fulfilling working environment for a diverse workforce 		<ul style="list-style-type: none"> Maintenance of employment rate of persons with disabilities of 2.4% or higher Promotion of work-life balance (achievement of an average annual leave usage rate of 100%) 	
			<ul style="list-style-type: none"> Promotion of active participation by women (execution of the action plan for promoting active participation by women) 	
			<ul style="list-style-type: none"> Promotion of health management (reduction of the number of persons who are on long-term absence due to mental problems; reducing overwork/long-time work; increasing the rate of persons who maintain appropriate weight; decrease of smoking rate; 100% uptake rate for those who need reexamination) 	
 Enhancement of Contributions to Society and Communication	<ul style="list-style-type: none"> Promotion of social contribution activities 		<ul style="list-style-type: none"> Contribution to the development of next-generation personnel through support for academic research, culture & art, and sports Promotion of conservation activities for biodiversity 	

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%)

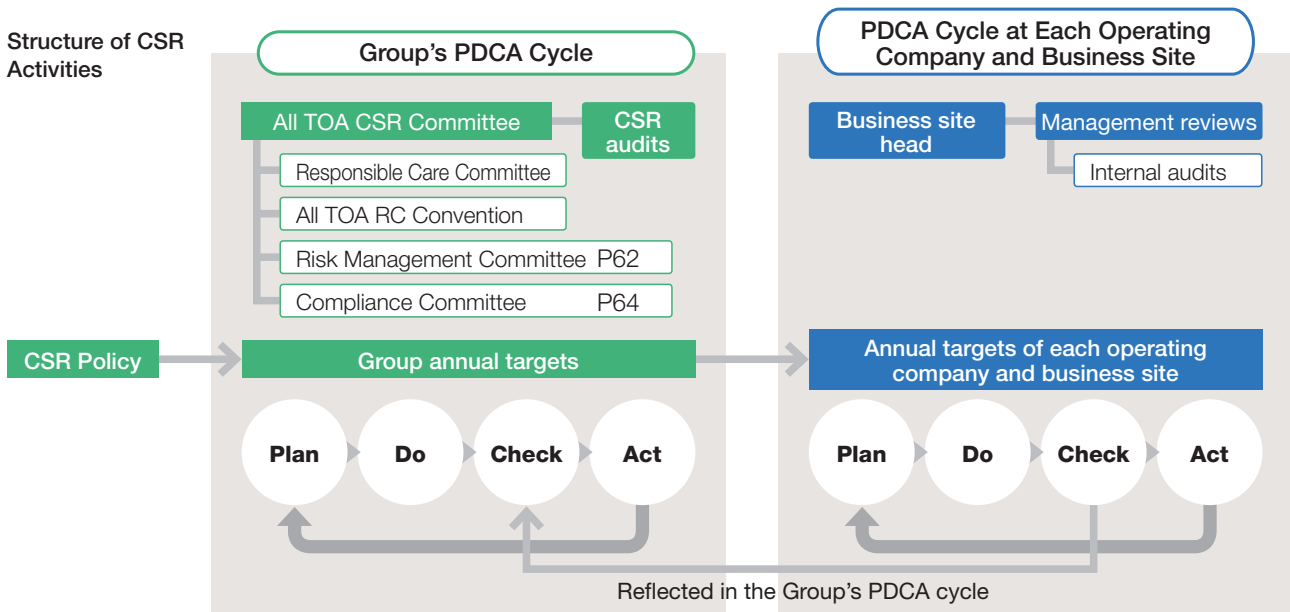
D Results in 2019	C Achievement	A Targets for 2020	Relevant page(s)
<ul style="list-style-type: none"> CO₂ emissions: 363k tons Energy consumption per unit of output: 91% of the previous year 	★★★	<ul style="list-style-type: none"> CO₂ emissions: 361k tons or less Energy consumption per unit of output: 99% or less from the previous year (CO₂ emissions target for 2030: At least 26% decrease from the result for 2013) 	
<ul style="list-style-type: none"> Final landfill rate: 0.55% Details of generated waste identified, recycling promoted 	★	<ul style="list-style-type: none"> Final landfill rate: 0.5% or less Maintaining of sorting of waste and appropriate disposal Promotion of recycling and waste volume reduction 	P49 P52
<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 55 tons 	★	<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 41 tons or less 	
<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials 	★★★	<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials 	P53
<ul style="list-style-type: none"> Seven lost-time injuries (two involving employees, four at partner business sites, one overseas) 	★	<ul style="list-style-type: none"> Zero lost-time injuries 	P54
<ul style="list-style-type: none"> Responded to domestic and overseas chemicals-related laws and regulations Responded to requests to submit SDS and various other surveys 	★★★	<ul style="list-style-type: none"> Response to domestic and overseas laws and regulations Expansion of the scope of usage of the chemicals management system Ensuring of preparation and updating of SDS in accordance with GHS 	P55
<ul style="list-style-type: none"> 1% decrease from the previous year 	★★★	<ul style="list-style-type: none"> Reduction in the total number of complaints 	P56
<ul style="list-style-type: none"> The number of problems increased by 17% from the previous year 	★	<ul style="list-style-type: none"> Reduction in the number of physical distribution problems 	P57
<ul style="list-style-type: none"> Realized diversity of the composition of the Board of Directors (appointment of a female director) Examined appropriateness of cross-shareholdings by comparing the benefit of the shareholding and the capital cost and divested the shares for which the appropriateness of the shareholding was low. Each operating company and site performed self-inspection of principal business processes and internal control audits appropriately. 	★★★	<ul style="list-style-type: none"> Switch to full compliance with the corporate governance code Efficient self-inspection and implementation of improvement items without fail Identification of unexpected situations and organizing of countermeasures 	
<ul style="list-style-type: none"> Received minutes of meetings of the Board of Directors of Group companies and checked them periodically. Integrated administrative operations of Toagosei with those of Aronkasei, performed integrated audits 	★★★	<ul style="list-style-type: none"> Control and supervision of Group companies and provision of appropriate guidance Initiatives for Group governance (inculcation of the policy in Group companies and provision of support to them) 	P58 P63
<ul style="list-style-type: none"> Held the Risk Management Committee (twice) The Head Office and sites jointly conducted a crisis response drill. Conducted drills at each site in preparation for earthquakes/accidents 	★★★	<ul style="list-style-type: none"> Periodic risk assessment by the Risk Management Committee Continuation of implementation of measures for reducing risk at each site Continuation of a crisis response drill jointly conducted by the Head Office and sites Continuation of drills at each site in preparation for earthquakes/accidents 	
<ul style="list-style-type: none"> Toagosei Group Report issued, information, including shareholder newsletters/corporate website, enriched 	★★★	<ul style="list-style-type: none"> Effective information disclosure from an all-Group perspective 	
<ul style="list-style-type: none"> The New Year issue of the internal newsletter featured the new corporate philosophy Provided education on the new corporate philosophy to new career-track employees and regular service employees Revised the Compliance Handbook and distributed it to each department with a message to the departmental manager Started a series in the internal newsletter introducing legal information by referring to familiar cases 	★★★	<ul style="list-style-type: none"> Continuous compliance education Continuation of monitoring and checks by the Compliance Committee Execution of a questionnaire survey on compliance 	P64
<ul style="list-style-type: none"> No major violation 	★★★	<ul style="list-style-type: none"> No major violation 	
<ul style="list-style-type: none"> Achieved employment rate of persons with disabilities: 2.93% 	★★★	<ul style="list-style-type: none"> Maintenance of employment rate of persons with disabilities of 2.4% or higher 	
<ul style="list-style-type: none"> Average annual leave usage rate: 90.1% 	★★	<ul style="list-style-type: none"> Promotion of work-life balance (achievement of an average annual leave usage rate of 100%) 	
<ul style="list-style-type: none"> Executed the action plan for promoting active participation by women based on the Act on Promotion of Women's Participation and Advancement in the Workplace Implemented initiatives to raise employees' awareness, adopted improvement proposals, implemented initiatives to increase employment of women 	★★	<ul style="list-style-type: none"> Promotion of active participation by women (execution of the action plan for promoting active participation by women) 	P65 P70
<ul style="list-style-type: none"> Conducted workplace improvement activities (feeding back the results of the stress check to workplaces) and held mental health training at two sites Provided guidance to each site for thorough implementation of time management, paying attention to the number of hours spent at work 50% uptake rate for those who need reexamination 	★★	<ul style="list-style-type: none"> Promotion of health management (reduction of the number of persons who are on long-term absence due to mental problems; reducing overwork/long-time work; 100% uptake rate for those who need reexamination; increasing the rate of persons who maintain appropriate weight; decrease of smoking rate) 	
<ul style="list-style-type: none"> Conducted plant tours, voluntary clean-ups, etc. in the areas where the Group's business sites are located Continued participation in the Human Resources Fostering Program in Chemistry of the Japan Chemical Industry Association, continued donations to the "Tobitate! (Leap for Tomorrow) Young Ambassador Program," continued sponsorship of T League, supported activities of the International Chemistry Olympiad as a member of the donation committee 	★★★	<ul style="list-style-type: none"> Promotion of harmonious coexistence with local communities and communication with the communities Contribution to the development of next-generation personnel through support for academic research, culture & art, and sports Promotion of conservation activities for biodiversity 	P71 P72

CSR Management

The Group is continually improving CSR activities in accordance with the CSR Policy by implementing the PDCA cycle to improve its ISO certified environmental and quality management.

In light of the Toagosei Group’s policy and targets, each operating company establishes its own policy and targets, based on which each operating company and its business sites draw up individual action plans to promote and review activities.

We hold meetings of the CSR Committee and the Responsible Care Committee and perform CSR audits in order to collectively monitor CSR activities at each operating company and business site as well as progress toward fulfilling policies and attaining targets. This information is used to make continual improvements across the entire Toagosei Group.



Functions and Activities of CSR Promotion Organizations

All TOA CSR Committee

The All TOA CSR Committee is the highest decision-making body for deliberating and deciding upon policies, targets and plans to maintain and improve the status of the entire Group’s CSR initiatives.

The 2019 All TOA CSR Committee meeting was held on November 5. The Committee reviewed CSR activities in the year in the fields of compliance, corporate governance, RC management, and social contribution & communication, and deliberated on CSR policies and targets for 2020.

CSR Audits

CSR audits are carried out prior to the All TOA CSR Committee meeting. Audit Administrators, designated by the Chairperson of the CSR Committee, visit each operating company and business site to audit the status of CSR initiatives. The results of these audits are reported back to the CSR Committee. For domestic plants, a manager and deputy manager of another plant are included as audit members.

In 2019 CSR audits of 12 business sites, including four overseas subsidiaries, were conducted. Findings, improvements and requests, and good points identified by CSR audits of

business sites are shared throughout the Group and reflected in improvement of CSR activities.

Responsible Care Committee

The Responsible Care (RC) Committee exhaustively examines the status of RC activities at each operating company and business site. It also considers how best to pursue RC activities in the following fiscal year. The 2019 RC Committee meeting was held on October 15 and the Committee reviewed the status of implementation of RC activities and issues.

All TOA Responsible Care Convention

The All TOA Responsible Care (RC) Convention is held to enhance the quality of RC activities at each Group company and promote horizontal deployment of best practices.

At the 2019 All TOA RC Convention held at the Yokohama Plant on June 12 and 13, 11 cases of RC activities related to safety, the environment and quality were presented. In addition, we also invited a guest speaker who made a presentation on the theme “Practical Safety Activities to Invigorate People and Workplaces—Manufacturing Is to Foster HR—,” and also organized factory tours at the Yokohama Plant and the Kawasaki Plant.



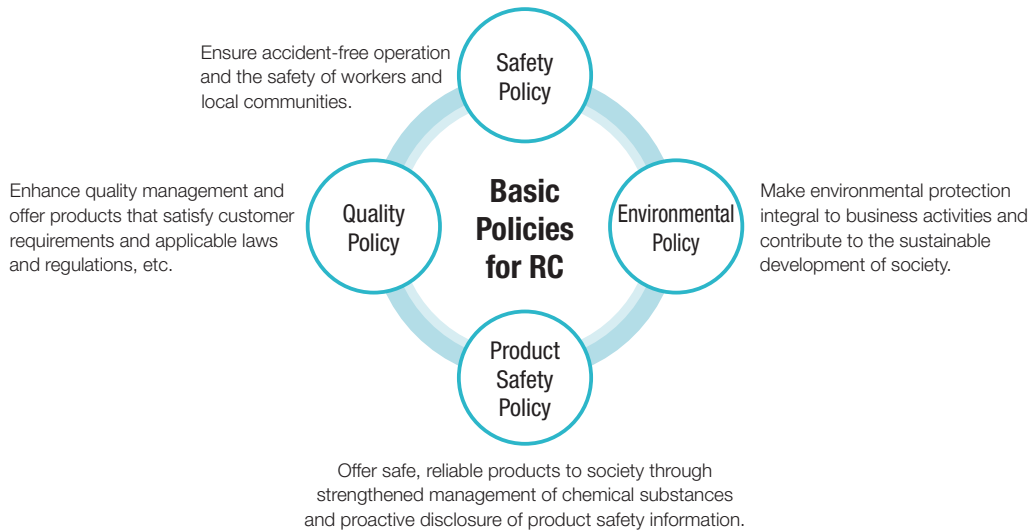
Responsible Care Management

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, process safety and disaster prevention, product safety, and physical distribution safety) and 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.

The Toagosei Group is committed to ensuring the safety of its products, as well as workforce safety and hygiene, and to reducing the impact on the environment of these products and their manufacturing processes at all stages from development through use to final disposal. By these means, the Group raises its reputation for trustworthiness among both its customers and society at large.



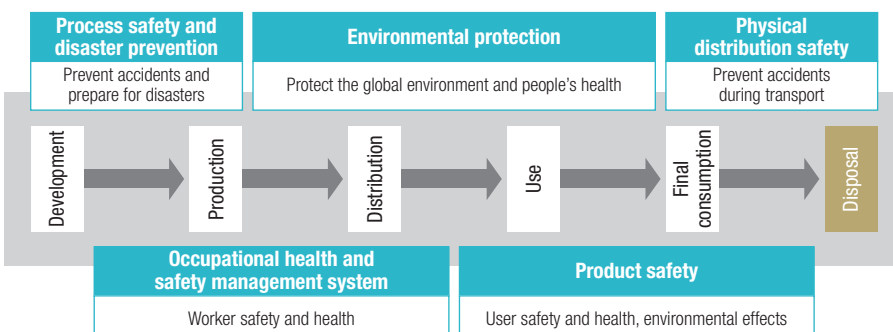
Toagosei Group and Responsible Care

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

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> CO₂ emissions: 366k tons or less Energy consumption per unit of output: 99% or less from the previous year (CO₂ emissions target for 2030: At least 26% decrease from the result for 2013) 	<ul style="list-style-type: none"> CO₂ emissions: 363k tons Energy consumption per unit of output: 91% 	★ ★ ★	<ul style="list-style-type: none"> CO₂ emissions: 361k tons or less Energy consumption per unit of output: 99% or less from the previous year (CO₂ emissions target for 2030: At least 26% decrease from the result for 2013)
<ul style="list-style-type: none"> Final landfill rate: 0.5% or less Understanding of the details of generated waste, recycling, promotion of waste reduction and understanding of waste generation per unit 	<ul style="list-style-type: none"> Final landfill rate: 0.55% Details of generated waste identified, recycling promoted 	★	<ul style="list-style-type: none"> Final landfill rate: 0.5% or less Maintaining of sorting of waste and appropriate disposal Promotion of recycling and waste volume reduction
<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 44 tons or less 	<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 55 tons 	★	<ul style="list-style-type: none"> Emissions of substances subject to PRTR: 41 tons or less

Global Warming Mitigation Measures

Reducing CO₂ Emissions by Reducing Energy Consumption

Since 2017, the Toagosei Group has been working to enhance production efficiency by strengthening production systems and facilities in growth fields. As a result, despite a 117% increase in production in 2019 compared with 2016, energy consumption volume was almost flat and energy consumption per unit greatly improved.

The Group's CO₂ emissions have been decreasing both in Japan and overseas at a pace that will enable achievement of the target for 2030, partly because generation of electricity, which accounts for the major share of Toagosei's energy consumption, is trending toward low-carbon sources worldwide.

We have set a target to reduce CO₂ emissions produced from production activities by 26% compared with the emissions volume in 2013 in light of the global targets for 2030 adopted in the Paris Agreement (COP21). Although we are still seeking to identify global warming mitigation measures with a view to 2050, we think technological innovation in energy procurement throughout the Group is indispensable and will address the issue.

Activities to Prevent Leakage of Fluorocarbons

In line with the Law concerning the Recovery and Destruction of Fluorocarbons, we strive to identify the amount of leaked fluorocarbons and implement necessary measures to prevent the leakage. In 2019, the amount of leaked fluorocarbons was 303 tons (converted to CO₂) for the entire Group in Japan due mainly to malfunctions in equipment using fluorocarbons and the age-related deterioration of facilities. We are working to prevent

leakage of fluorocarbons through meticulous inspection of equipment and implementation of measures to prevent malfunctions and by systematic replacement with equipment that uses refrigerant whose global warming potential (GWP) is low.

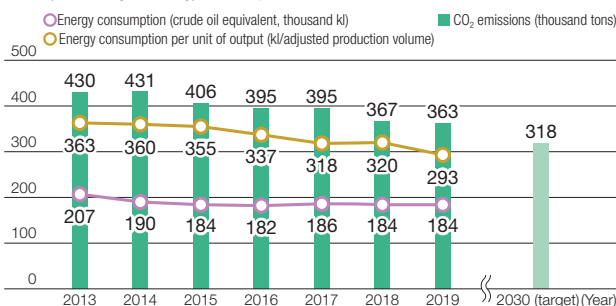
Topics Hydrogen-fired Boiler Introduced

A boiler solely fired by hydrogen was introduced at the Tokushima Plant and began full-scale operation in April 2019. This boiler uses hydrogen, a by-product generated at the electrolysis plant. Thus, it is possible to reduce CO₂ emissions because of the reduction in the use of the existing boilers that use fossil fuels. A positive impact has started to become evident as indicated by the results of energy savings and reduction of CO₂ emissions at the Tokushima Plant up to the end of 2019. This boiler has been well received because it is compact and simple to operate, and thus is not burdensome for operators. Going forward, hydrogen-fired boilers will be introduced at other sites and are expected to greatly contribute to energy saving.

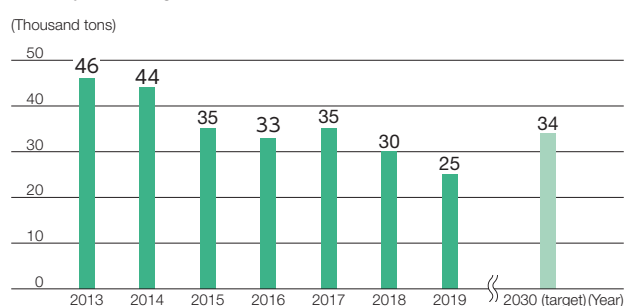


Hydrogen-fired boiler

Seven-year Change in Energy Consumption and CO₂ Emissions at Domestic Production Sites



Seven-year Change in CO₂ Emissions at Six Overseas Production Sites



Environmental Impact Reduction Measures

Protection of Water Quality

The Toagosei Group considers water a limited resource and strives to promote its efficient use. The Group's water consumption in Japan in 2019 was 51 million m³, a slight increase from the previous year owing to a 10% increase in production volume compared with the previous year, and total effluent volume was 40 million m³. We are increasing the capacity of drainage facilities in view of increasing production volumes and 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.

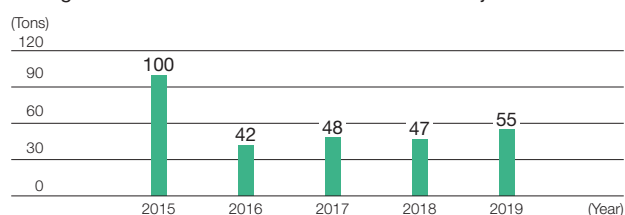
Protection of Air Quality

To comply with government emissions standards and regulation values in agreements with local communities for sulfur oxides (SO_x), nitrogen oxides (NO_x), and dust, the Group sets voluntary control values and rigorously controls exhaust. In addition, the respective overseas production sites control their exhaust in accordance with applicable regulations in their jurisdictions.

Chemical Substance Emissions Reduction

The Group's business sites conduct appropriate notifications in compliance with the Law concerning Pollutant Release and Transfer Register (PRTR Law). Chemical substance emissions increased in 2019 because trouble occurred at absorption and abatement facilities for chloromethane (methyl chloride) and methyl acrylate of the Sakaide Plant and it was unable to recover these substances for two months. We will implement measures to ensure prevention of recurrence with a view to achieving further reduction of chemical substance emissions.

Change in Emissions of Chemical Substances Subject to PRTR



Emissions of Principal Substances Subject to PRTR (t)

Major emissions	2019
Chloromethane (methyl chloride)	35.7
Chloroethylene (vinyl chloride)	5.5
Methyl acrylate	5.3
Dichloromethane (methylene chloride)	1.8
Toluene	1.3

Initiatives to Realize a Recycling Society

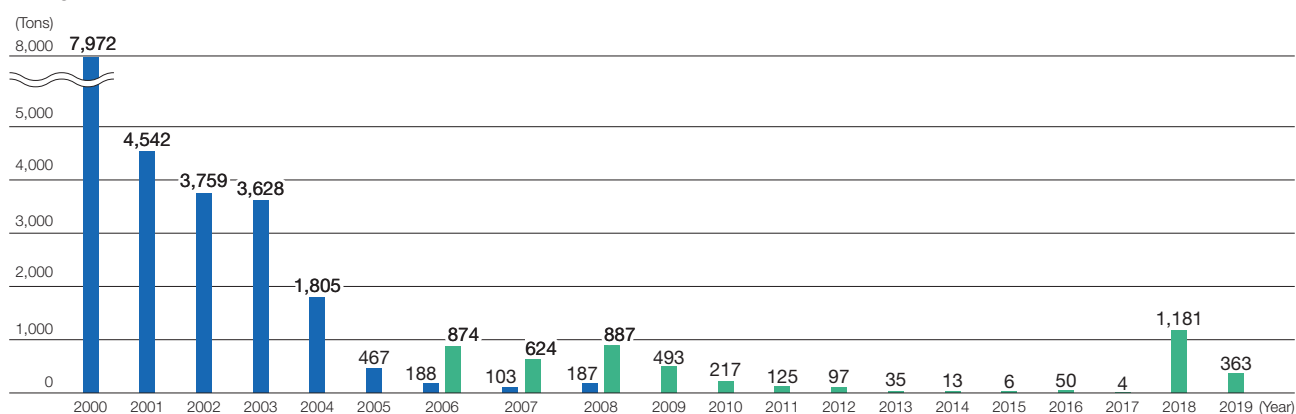
Reduction in Final Landfill Volume and Waste Recycling Measures

The Group focuses on promotion of initiatives to reduce final landfill volume. The Group's final landfill volume, which was around 8,000 tons in 2000 (non-consolidated basis), has been so far reduced to several hundreds of tons (consolidated basis). The final landfill rate was 0.55% in 2019, which fell short of the target, because there was the disposal of waste that had been untouched and stored in

a plant, which continued from the previous year. However, the amount of waste that is produced from daily production activities and finally disposed of in landfill dropped drastically.

We appreciate industrial waste handling operators that are making efforts toward recycling in response to the needs in society and select industrial waste handling operators that are facilitating material recycling and thermal recycling as destinations for discharged waste.

Change in Final Landfill Volume Toagosei (-2008)Toagosei Group (2006-)



Investment, etc., in Environmental Protection

The Group introduced environmental accounting in 2000 and has since been announcing its stance on environmental activities. We disclose the details of investment in order to facilitate understanding.

1. We reduced CO₂ emissions by upgrading equipment to enhance energy efficiency and introducing carbon-free facilities

Description	Investment (Millions of yen)
Renewal of rotary machines, heat exchangers, etc. to enhance energy efficiency	150
Installation of LED lights	54
Reduction of utility energy loss	14
Reduction of CO ₂ emissions by introducing a hydrogen-fired boiler (Tokushima)	7
Total	225

2. We are systematically investing in environmental protection.

Description	Investment (Millions of yen)
Strengthening of wastewater treatment facilities	147
Strengthening of exhaust gas abatement facilities, etc.	217
Soil investigation and purification	36
Reduction of industrial waste	119
Total	519

3. We are promoting development and research of environmentally friendly products.

Description	Expenses (Millions of yen)	
	R&D	Capital investment
Development of materials for parts to be mounted on electric vehicles with low environmental load	234	8
Development of materials for soil improvement to prevent liquefaction caused by earthquakes	28	—
Consideration on industrial use of plant-based materials	87	—
Consideration on reduction of environmental load by increasing the productivity of existing products	92	—
Consideration on further improvement in performance of environmentally friendly products	68	—
Total	509	8

4. Other

In addition to investment costs, ordinary expenses are incurred for environmental protection, prevention of the leakage of harmful substances, environment monitoring, green space management, environmental education, etc.

Scope of calculations: Toagosei Group listed on p.52
 Period covered: January 1 to December 31, 2019
 Calculation method: Obtained by multiplying the amounts actually paid by environment factors specified under internal rules

VOICE

2019 The Japan Society of Colour Material Technology Award Received for Development of Thermal Conductive Insulating Powder Paint

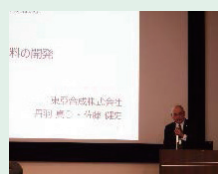
Toagosei engineers received the 2019 Japan Society of Colour Material Technology Award for R&D of ARONPOWDER®EL-3000 powder paint.

This product is a paint used for insulating motors and invertors to be mounted on electric vehicles and hybrid vehicles and achieves the industry's highest level of thermal conductivity.

In view of increasing needs for electric equipment with higher output, our development of a material effective for addressing this issue was highly regarded.

Encouraged by receipt of the award, we are resolved to step up our R&D efforts.

*The Japan Society of Colour Material is an academic organization focused on research into various colour materials, such as pigments, paints, and printing inks.



Commemorative lecture



(From right)

Makoto Niwa
 New Products Research Laboratory
 General Center of Research and Development

Takeshi Sato
 Technology Development Department
 Nagoya Plant

Business Activities and Environmental Impacts

Scope of calculations			Period covered
Toagosei	Plants	Nagoya Plant, Yokohama Plant, Takaoka Plant, Tokushima Plant, Sakaide Plant, Kawasaki Plant, Hirono Plant	One year from January 1, 2019 to December 31, 2019
	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	
	Oita Chemical	Oita Plant	

Energy Consumption

	2018	2019
Energy consumption (crude oil equivalent, thousand kl)	184	184
Per unit of output (kl/adjusted production volume, thousand tons)	320	293

Water Consumption

	2018	2019
Water resources (million m ³)	50	51

INPUT



Toagosei Group Production Sites in Japan

OUTPUT

Business Activities

	2018	2019
Production volume (thousand tons)	1,163	1,178

Environmental Impacts on Water Resources

	2018	2019
Total effluent volume (million m ³)	42	40
COD (tons)	109	62
Total nitrogen (tons)	27	27
Total phosphorus (tons)	1.2	1.1
Substances subject to PRTR (tons)	4	3

Industrial Waste

	2018	2019
Volume of industrial waste generated (tons)	68,129	66,353
Volume reduced internally (tons)	49,808	47,641
Volume discharged externally (tons)	11,997	11,987
Final landfill volume (tons)	1,181	364
Final landfill rate (%)	1.73	0.55

In 2018, we reviewed the scopes of volume of industrial waste generated and volume reduced internally that are subject to calculation.

Environmental Impacts on Atmosphere

	2018	2019
CO ₂ (CO ₂ equivalent, thousand tons)	367	363
SO _x (tons)	37	47
NO _x (tons)	69	74
Soot and dust (tons)	5	12
Substances subject to PRTR (tons)	43	53



Safety and Disaster Prevention

P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials 	<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials 	★ ★ ★	<ul style="list-style-type: none"> Zero explosion or fire accidents Zero serious leakage accidents of harmful substances or hazardous materials

Safety and Disaster Prevention Initiatives

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 details to be examined in the “risk assessment” and the “chemical substance risk assessment.”

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. As an increasing number of workplaces are experiencing a generational change among employees in recent years, the need to rapidly ensure employees are capable of dealing with crises has emerged as an issue. According to manufacturing facilities and substances handled

at each plant, drills are conducted, assuming, for example, that a disaster occurs on a holiday when few employees are present or unscripted drills are conducted to ensure that the plants are prepared for any eventuality. In view of the frequent occurrence of severe disasters, if any leakage were to occur, the excuse that such a disaster could not have been foreseen would be unacceptable.

In 2019 the Sakaide Plant, for the first time, introduced a drill involving the real-time transmission of images of the site to the Response Headquarters using a tablet. Other plants are also promoting initiatives using IoT, such as sharing of information using helmet cameras and voice.



Drill using tablet (Sakaide Plant)



Water-spray drill by a team in charge of dealing with chloride (Tokushima Plant)

Topics

Yokohama Plant's Response to Typhoon Faxai



Commendation of the Products Filling Section



Commendation of the Manufacturing Section

Bringing powerful wind and torrential rain to the Tokyo Metropolitan area before dawn on Monday, September 9, 2019, Typhoon Faxai caused great damage and was designated a severe disaster.

The Yokohama Plant implemented meticulous measures in advance in readiness for the typhoon's landfall during the night of a holiday. Despite the risk of the outflow of wastewater from the plant site because of flooding of the facilities yard, the Yokohama Plant avoided all the worst case scenarios, such as shutdown of the plant, flooding of facilities and equipment, and breach of the wastewater standards, by means of swift and accurate decision-making and implementation of measures, such as activation of backup drainage pumps, recovery of wastewater in the yard, and the opening/closure of the sluice in strong wind.

Whereas many factories in the neighborhood suffered major damage, such as flooding and damage to their facilities, damage of the Yokohama Plant was minimized through the joint efforts of all the personnel and Mr. Yamada, General Manager of the Yokohama Plant, presented letters of appreciation to the Manufacturing Section and the Products Filling Section on September 20. Overcoming a major crisis, the two sections proved that workplace capabilities cultivated through daily efforts and ongoing education and training were effective.



Occupational Health and Safety

Relevant SDGs



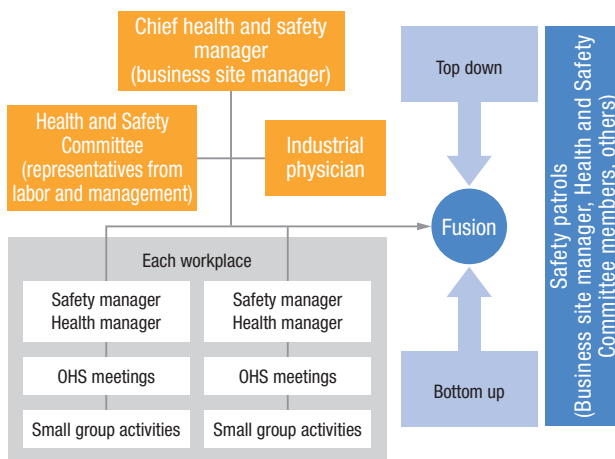
P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Zero lost-time injuries 	<ul style="list-style-type: none"> Seven lost-time injuries (two involving employees, four at partner business sites, one overseas) 	★	<ul style="list-style-type: none"> Zero lost-time injuries

Occupational Health and Safety Initiatives

Occupational Health and Safety Management System

The Group determines priorities for occupational health and safety (OHS) promotion and key policies and measures at the All TOA CSR Committee and engages 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.

OHS Management System



Health and Safety Committees and OHS Meetings

At each business site, a Health and Safety Committee organized in accordance with the Industrial Safety and Health Act meets each month, and management and labor jointly engage in health and safety activities. A monthly OHS meeting is held at each workplace, and the workers maintain and improve occupational health and safety.

Occurrence of injuries

In 2019, seven lost-time injuries occurred (six in Japan and one overseas) involving employees of the Toagosei Group and partner business sites, and we did not achieve the target of zero lost-time injuries. Facilities maintenance/engineering work involves high risk of accidents or injuries. Thus, we conduct safety education for all the people engaged in such work, including workers of contractors, covering the nature of chemical substances, safety measures, emergency measures, and briefing on accidents/injuries that occurred in the past. Commencement of the engineering work is only permitted after it is confirmed that safety measures are thoroughly implemented by using a check sheet, etc.

In 2020, we will step up safety guidance and Kiken (hazard) Yochi (prediction) Training (KYT) in order to enhance the level of safety awareness of all workers.

Number of Occupational Accidents

(Accidents)

	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
2014	1	7	3(1)	3	4	10
2015	4(1)	9	1	3	5	12
2016	1	10(1)	4	2	5	12
2017	1	8	0	5	1	13
2018	2(4)	13	0(1)	5	2	18
2019	2(1)	12	4	4	6	16

*Numbers in parentheses indicate accidents at overseas business sites (excluded figures).

Topics

Seminar on Prevention of Fall Injuries

On October 10, 2019, which was Fall Prevention Day, we held a seminar on prevention of fall injuries at Head Office in which 37 personnel participated. At first, the General Manager of the Environment & Safety Department explained that stumbling and falls accounted for the largest share of causes of injuries throughout the Toagosei Group in the past three years and that everyone is at risk of falling and suffering serious injury, including even those working in administrative departments at the Head Office. Next, a lecturer from the Japan Industrial Safety & Health Association gave a presentation on the mechanism of stumbling and countermeasures and how to check a person's physical functions to assess the risk of falls. The participants performed practical assessment of their balance, muscular strength, and agility. Many participants became aware that their risk of falls was higher than they had expected. Finally, the Health Management Promotion Section distributed fitness goods for increasing muscular strength and for stretching to the participants and explained how to use them.



Checking physical functions



Product Safety

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Proper response to laws and regulations regarding chemical management Appropriate provision of information to customers, etc. 	<ul style="list-style-type: none"> Responded to domestic and overseas chemicals-related laws and regulations Responded to requests to submit SDS and various other surveys 	★ ★ ★	<ul style="list-style-type: none"> Response to domestic and overseas laws and regulations Expansion of the scope of usage of the chemicals management system Ensuring of preparation and updating of SDS in accordance with GHS

Appropriate Management of Chemical Substances

Chemicals Safety Management System

In the Toagosei Group, the 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, such as 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 Labelling 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.

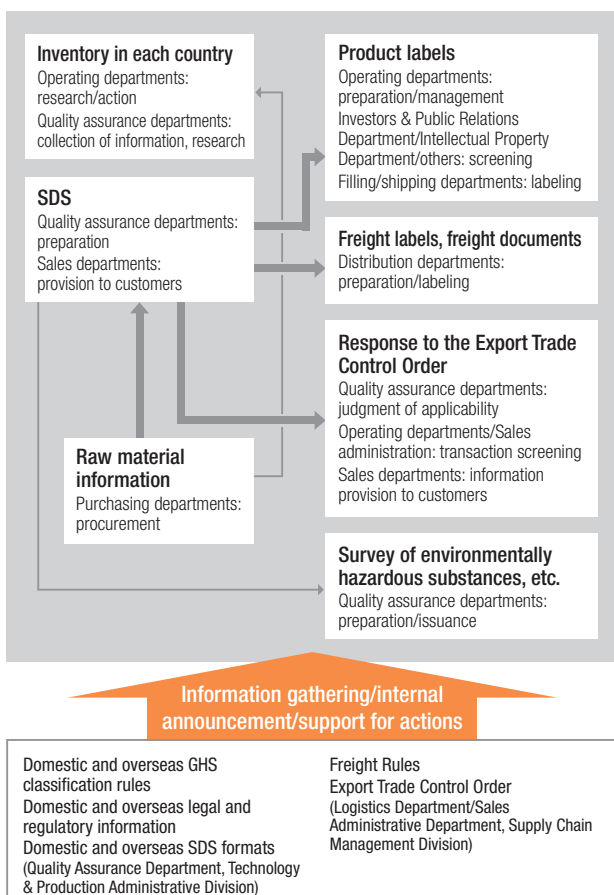
Many departments are involved to manage product information and appropriately communicate it to the supply chain. Members of the Technology & Production Administrative Division and the Supply Chain Management Division are engaged in information gathering, internal education, response to consultation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

Green Procurement

We disclose information on the chemical products we provide to enable customers to practice green procurement. Relevant information is provided through chemSHERPA as well.

In addition, to provide environmentally friendly, worry-free products, we have established the Green Procurement Guidelines, manage environmentally hazardous substances in raw materials and packaging materials, and conduct quality and environmental management surveys of business partners. We have put in place a mechanism for selecting raw materials that meet green procurement criteria beginning at the product development stage.

* chemSHERPA: the scheme designed for communicating information on chemical substances contained in products in the supply chain; released in October 2015 and fully used by each company since 2017.



Quality Assurance

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
● Reduction in the total number of complaints	● 1% decrease from the previous year	★ ★ ★	● Reduction in the total number of complaints

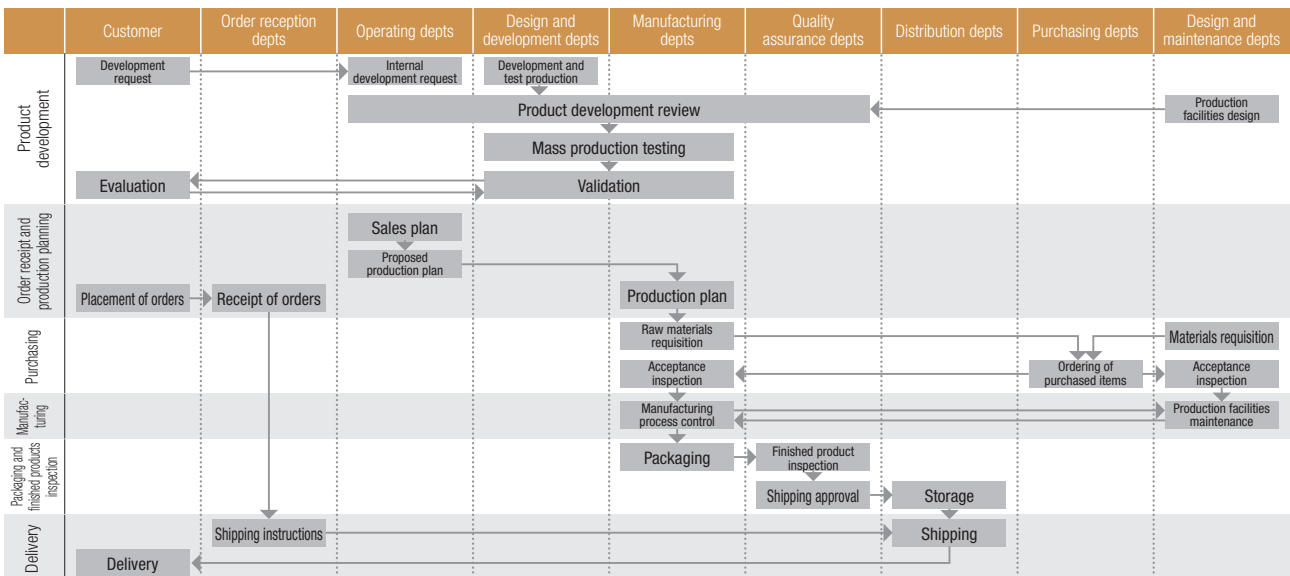
Quality Assurance System

Based on its quality policy to “enhance quality management and offer products that satisfy customer quality requirements and applicable laws and regulations, etc.,” the Toagosei Group is working to achieve ongoing improvement of the management system.

Having established quality targets, such as “improvement of the level of raw materials management,” “strengthening of manufacturing process management,” “improvement of quality

of analysis,” and “utilization of the internal quality assurance liaison committee,” we promoted various activities. As a result of reestablishment of the quality assurance system for high-purity products, introduction of a product inspection management system, and review and improvement of the inspection items for functional products, quality performance improved throughout Toagosei.

Quality Assurance System



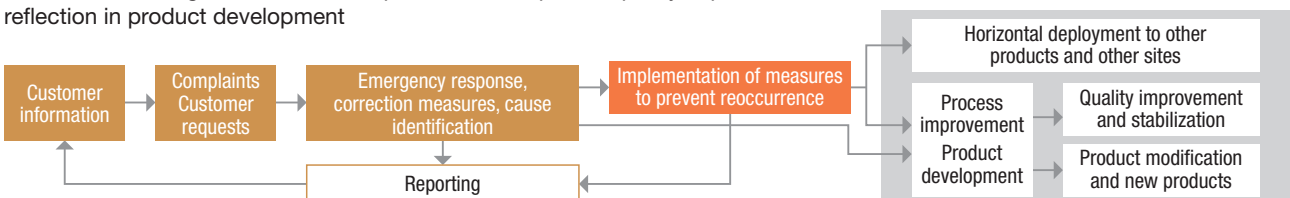
Initiatives in Response to the Voice of the Customer

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 to make improvements such as product upgrade,

process improvement, work renovation, and facility repair, we enhance the level of quality management from a broad perspective.

In recent years, customers are seeking a higher level of assurance and standards. To respond to their requests, we strive to reinforce the cooperative framework between relevant plants in performing various activities in an effort to further strengthen the quality assurance system.

Process for dealing with customer requests and complaints/quality improvement, reflection in product development





Physical Distribution Safety



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Reduction in the number of physical distribution problems 	<ul style="list-style-type: none"> The number of problems increased by 17% from the previous year 	★	<ul style="list-style-type: none"> Reduction in the number of physical distribution problems

Safety Management during Product Transport

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 request the client to improve its receiving facility.

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.

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. In 2019, a demonstration involving the mixing of chemicals was introduced in the education in order to heighten workers' awareness of the danger of mixing chemicals through erroneous delivery. 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.



Driver joint safety workshop



Practical training on unloading

In-house training sessions on transportation

In order to establish a safe and efficient shipping system, the Logistics Department regularly holds in-house training sessions with a focus on helping participants understand and obtain knowledge necessary for safe and stable transportation, including laws and regulations related to transportation. In October 2019, 61 people participated in the session titled "Briefing session on shipping/aerial transportation of hazardous materials," which was held by connecting the head office with each site. In addition, we strive to strengthen and enrich international transportation capabilities by undertaking initiatives for developing human resources specialized in export operations in order to handle overseas transportation, which is expected to expand and increase in line with the global expansion of the Toagosei Group.

Topics

Endorsing the White Logistics Movement

In December 2019, endorsing the White Logistics Movement, Toagosei announced its initiatives in the Voluntary Action Declaration listed in the table below.

The White Logistics Movement is an initiative in Japan aimed at improving logistics through joint efforts of shippers and logistics service providers.

A shortage of truck drivers, which is an issue in Japan, is having an impact on the Group in terms of the safety and quality of its logistics activities. We consider that the initiatives of the Voluntary Action Declaration listed below will help reduce the number of physical distribution problems and prevent accidents involving the people working in logistics.

Initiatives in the Voluntary Action Declaration

Item	Description
Proposal for improvement of logistics and cooperation	If suppliers or logistics service providers request reduction of time spent waiting for cargo, reduction of the need for drivers to perform manual unloading, streamlining of incidental operations, etc., we will discuss the matter with them and vigorously make proposals.
Utilization of pallets, etc.	We will utilize pallets, racks, returnable containers, etc. to reduce time spent handling cargo and the workload.
Improvement of facilities of shippers	We will automate filling equipment, integrate warehouses and other logistics facilities, and implement other measures to reduce the workload and time spent handling cargo.
Active utilization of logistics service providers engaged in workstyle reforms, etc.	We will actively use logistics service providers engaged in workstyle reforms, improvement of safety, etc. and support their efforts.
Safety measures for cargo handling	We will strive to prevent occurrence of occupational accidents through improvement of equipment for filling hazardous substances and shipping equipment, review of procedures, etc.



Corporate Governance

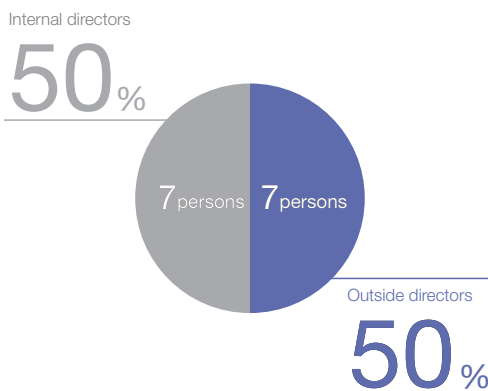
Relevant SDGs



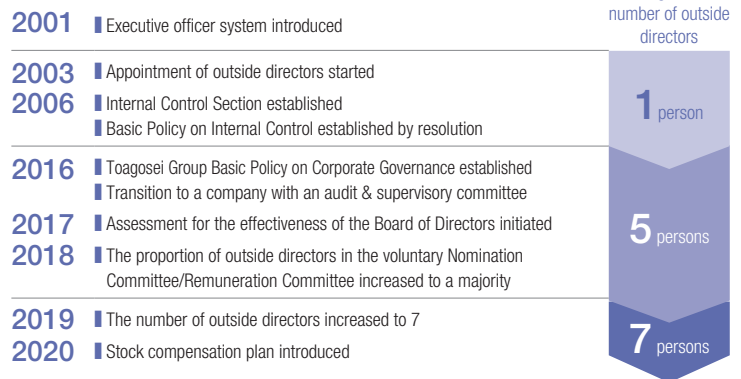
P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Execution of measures to strengthen corporate governance in accordance with the revised version of the Toagosei Group Basic Policy on Corporate Governance Efficient self-inspection and implementation of improvement items without fail 	<ul style="list-style-type: none"> Realized diversity of the composition of the Board of Directors (appointment of a female director). Examined appropriateness of cross-shareholdings by comparing the benefit of the shareholding and the capital cost and divested the shares for which the appropriateness of the shareholding was low. Each operating company and site performed self-inspection of principal business processes and internal control audits appropriately. 	★★★★	<ul style="list-style-type: none"> Switch to full compliance with the corporate governance code Efficient self-inspection and implementation of improvement items without fail Identification of unexpected situations and organizing of countermeasures
<ul style="list-style-type: none"> Control and supervision of Group companies and provision of appropriate guidance 	<ul style="list-style-type: none"> Received minutes of meetings of the Board of Directors of Group companies and checked them periodically. Integrated administrative operations of Toagosei with those of Aronkasei, performed integrated audits 	★★★★	<ul style="list-style-type: none"> Control and supervision of Group companies and provision of appropriate guidance Initiatives for Group governance (inculcation of the policy in Group companies and provision of support to them)
<ul style="list-style-type: none"> Periodic risk assessment by the Risk Management Committee Continuation of implementation of measures for reducing risk at each site Continuation of drills at each site in preparation for earthquakes/accidents 	<ul style="list-style-type: none"> Held the Risk Management Committee (twice) The Head Office and sites jointly conducted a crisis response drill. Conducted drills at each site in preparation for earthquakes/accidents 	★★★★	<ul style="list-style-type: none"> Periodic risk assessment by the Risk Management Committee Continuation of implementation of measures for reducing risk at each site Continuation of a crisis response drill jointly conducted by the Head Office and sites Continuation of drills at each site in preparation for earthquakes/accidents
<ul style="list-style-type: none"> Effective information disclosure from an all-Group perspective 	<ul style="list-style-type: none"> Toagosei Group Report issued, information, including shareholder newsletters/corporate website, enriched 	★★★★	<ul style="list-style-type: none"> Effective information disclosure from an all-Group perspective

Governance Highlights

Composition of the Board of Directors



Measures for strengthening of corporate governance



Profile of Directors

Name	Attendance at the Board of Directors meetings in 2019	Nomination Committee/Remuneration Committee member	Compliance Committee member*3	Fields of experience					
				Corporate management/corporate planning	Sales/marketing	R&D/technology and production	Finance/accounting	Legal affairs	HR/labor affairs
Mikishi Takamura	13/13	○		○			○		○
Nobuhiro Ishikawa	13/13		○	○	○	○			
Yoshitaka Suzuki	13/13		○				○	○	○
Moriyuki Kenjo	13/13		○		○				
Susumu Miho	13/13		○		○	○			
Shinichi Sugiura	13/13		○	○	○				○
Satoru Nakanishi	13/13	○		○			○		
Yasuhiro Koike	13/13					○			
Yasuo Kitamura	13/13	○						○	
Katsuyuki Ito	13/13			○			○		○
Nobuhiko Takano	13/13						○		
Kiyoko Ishiguro	10/10 ¹							○	
Masahiko Yasuda	10/10 ¹			○			○		
Koichi Danno	— ²			○			○		

*1 Number after assuming office of director in March 2019 *2 Assumed office of director in March 2020 *3 In addition to the directors indicated in the table, one external lawyer is a member.

Corporate Governance System

Basic Approach and System

The Toagosei Group 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 fulfil 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.

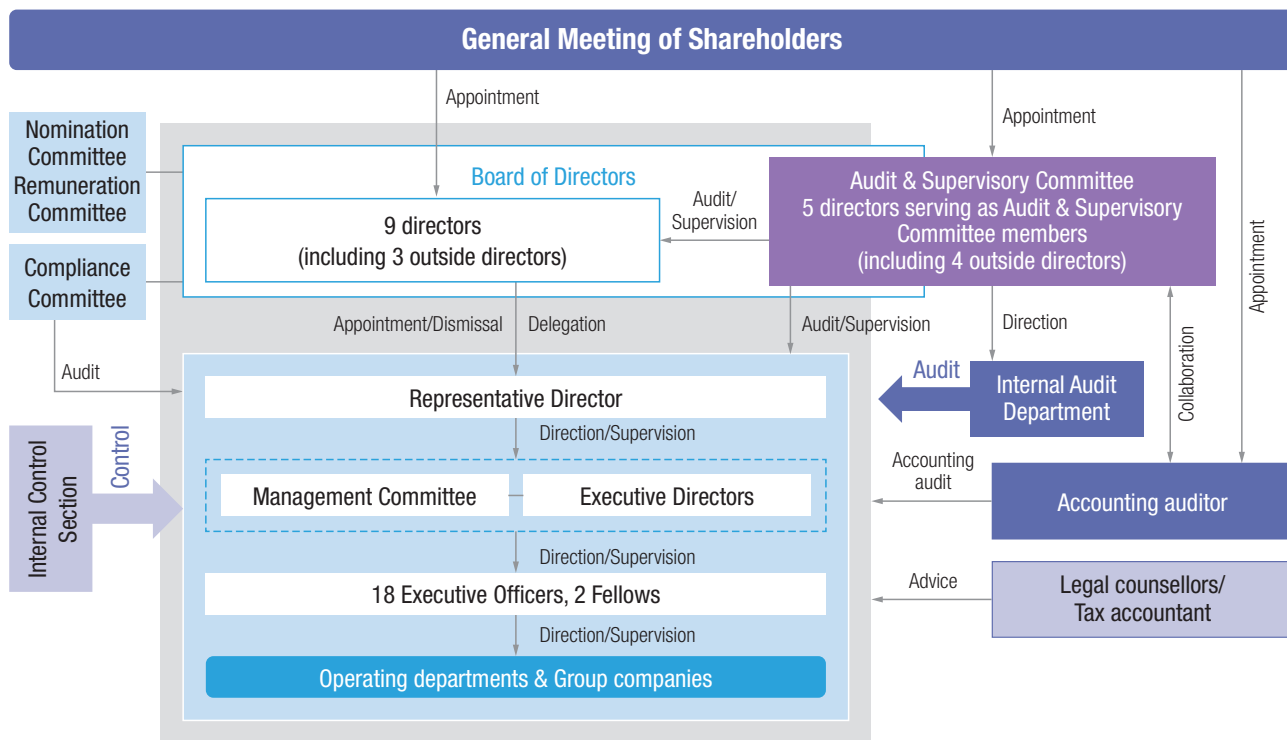
The Group’s basic approach to corporate governance is as follows.

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

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.

Toagosei is a company with an audit & supervisory committee. Audit & Supervisory Committee members, including several independent outside directors, have voting rights on the Board of Directors so that audit and supervision over business execution have been strengthened. Furthermore, the Articles of Incorporation provide that important decision-making for management may be delegated in whole or in part to directors. Thus, a system is in place that separates supervision and business execution and enables swift decision-making with regard to business execution.

Corporate Governance System



Board of Directors

The Board of Directors consists of 14 directors, including nine directors who do not serve as Audit & Supervisory Committee members (of whom three are independent outside directors) and five directors who also serve as Audit & Supervisory Committee members

(of whom four are independent outside directors). At meetings of Toagosei’s Board of Directors, directors, including outside directors, engage in lively discussion. 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 and production, sales, corporate administration, accounting and legal affairs. In addition, a new female director was appointed in 2019 to maintain the diverse structure of the Board of Directors.

Management Committee

The Management Committee composed of executive directors meets every week, in principle, to deliberate in advance on matters to be discussed at the Board of Directors and to deliberate, decide and discuss from an operational perspective the important matters delegated to the Management Committee based on a resolution by the Board of Directors.

Executive Officers

Toagosei adopts an executive officer system to segregate management and execution and to realize swift decision-making and efficient business execution. Terms of office of executive officers are one year, which are the same as those of directors (excluding directors who serve as Audit & Supervisory Committee members), in order to clarify their responsibilities for business execution.

Audit & Supervisory Committee and Internal Audit Department

The Audit & Supervisory Committee consists of one director who serves as a full-time Audit & Supervisory Committee member and four outside directors. In addition to the exercise of supervisory authority including voting rights at the Board of Directors, Audit & Supervisory Committee members attend important meetings and request the Group's directors, executive officers, employees, and the outside accounting auditor to provide timely and appropriate reports and thereby audit legal compliance with respect to the performance of duties by directors and other officers, the appropriateness of the Company's business operations, internal control, financial conditions, and other matters.

The Internal Audit Department has been established to assist Audit & Supervisory Committee members with their duties. The Internal Audit Department is staffed with several employees who are assigned to the Internal Audit Department on a full-time basis. The Audit & Supervisory Committee members are endeavoring to conduct effective audits by sharing necessary information with the accounting auditor and the Internal Control Section.

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 & 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 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.

Selection of Directors

The Company has prescribed the selection standards for the Company's directors (excluding directors who also serve as Audit & Supervisory Committee members and independent outside directors who do not serve as Audit & 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.

To enhance the objectivity and transparency of the appointment, the Nomination Committee, in which the majority of the members are independent outside directors, has been established as an advisory body to the Board of Directors. The Committee deliberates on matters such as appointment procedures, qualifications and reasons for appointment regarding proposals on candidates for director prepared by the representative director, and reports to the Board of Directors.

Remuneration for Directors

Remuneration for directors of the Company (excluding directors who also serve as Audit & Supervisory Committee members and independent outside directors who do not serve as Audit & Supervisory Committee members) consists of fixed remuneration and performance-linked remuneration. The amounts of remuneration to be paid are determined by the Board of Directors, taking into account the duties and responsibilities according to positions, performance, etc., within the maximum amount of remuneration determined by the resolution of the General Meeting of Shareholders. The amounts of the performance-linked remuneration are determined 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.

In addition, to enhance the objectivity and transparency of the remuneration, the Remuneration Committee, in which the majority of the members are outside directors, has been

established as an advisory body to the Board of Directors. The Committee deliberates on proposals concerning directors' remuneration, which are prepared by the representative director, in view of the remuneration system and individual director's remuneration, and reports to the Board of Directors.

Having gained approval at the 107th Ordinary General Meeting of Shareholders held on March 27, 2020, the Company introduced a stock compensation plan for its directors (excluding directors who also serve as Audit & Supervisory Committee members and independent outside directors who do not serve as Audit & Supervisory Committee members). Under this plan, the Company will grant restricted shares to the eligible directors 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. This plan has also been introduced for executive officers of the Company and directors and executive officers of certain subsidiaries.

Breakdown of Remuneration for Directors (Fiscal Year 2019)

Classification	Total amount of remuneration	Total amount by remuneration type		Number of directors
		Fixed remuneration	Performance-linked remuneration	
Directors (not serving as Audit & Supervisory Committee members) (excluding outside directors)	208 million yen	162 million yen	45 million yen	7 persons
Directors (serving as Audit & Supervisory Committee members) (excluding outside directors)	8 million yen	8 million yen	—	1 person
Outside directors	60 million yen	60 million yen	—	7 persons

*Directors who retired in fiscal year 2019 are included.

Assessment for the Effectiveness of the Board of Directors

The Company analyzes and assesses the effectiveness of the Board of Directors every year based on the self-assessment of each director. Issues recognized therein are discussed by the Board of Directors for improvement.

Assessment for the effectiveness of the Board of Directors performed in 2020

1. Assessment method

We conducted a survey for all directors regarding the effectiveness of directors, and the Board of Directors had discussions based on the compiled result and opinions received through the survey. We assigned a third party to review, compile and analyze survey items for the assessment for the effectiveness so as to enhance the objectivity and transparency of the assessment.

2. Questions asked to directors in the survey

- Structure and operation of the Board of Directors
- System supporting the Board of Directors
- Constructive dialogue with shareholders
- Contribution to the Board of Directors (self-assessment), etc.

3. Assessment results

The majority of the responses were positive for all the items. Positive evaluation increased for items such as the frequency of the Board meetings; the timing of submission of agenda items; the timing of distribution of reference materials, their contents, and quantities; the atmosphere facilitating free discussion. These results indicated that the effectiveness of the Board of Directors is secured in general.

Regarding the items recognized as issues as a result of the effectiveness assessment conducted last year, positive evaluation increased and we confirmed and shared the view that improvements have been made. The Company's appointment of a female outside director was regarded favorably and so were the systems for supporting outside directors, including explanation of agenda items before and after the Board meetings, systems for obtaining information from the Company, and securing of opportunities for Audit & Supervisory Committee members to exchange and share information and views.

Meanwhile, we confirmed and shared the view that further discussion would be required regarding the number of members of the Board of Directors and its diversity and prioritization according to the nature of the matters to be deliberated and that improvement should be made regarding vitalization of discussion on the selection of directors, remuneration for directors, and succession planning.

Message from an Outside Director



Yasuhiro Koike
Outside Director

Commodity chemicals that the Group has been producing ever since its foundation are indispensable for industry and society and their safe and stable supply are essential. Toagosei's down-to-earth corporate culture emphasizing integrity and its excellent technological capabilities, not to mention adhesives, have been highly regarded in the industry. Toagosei celebrated its 75th anniversary in 2019.

We are in an era of unprecedented change. In line with the advent of new industries, such as IoT, AI, electric vehicles, the development of innovative materials that are not extensions of conventional general-purpose materials has become a vitally important issue. In these circumstances, as mentioned in the new corporate philosophy which focuses on "materials and functions," Toagosei is pursuing development of new materials whose functions may transform the entire industry system. I think this requires strategic management, such as promoting joint development with partner users from the initial phase. Capitalizing on my experience in academia and in promoting R&D, I am resolved to do my utmost as an outside director to contribute to further development of Toagosei and enhancement of corporate governance.

Support System for Outside Directors

We have taken various steps to establish the environment that enables outside directors to properly supervise that mid- 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 explanation regarding the contents discussed by the Management Committee, and share their understanding of the Company's management issues and constructively exchange opinions as needed through attendance at important meetings regarding research and development, CSR policy, etc.

Risk Management

Risk Management Committee

The Toagosei Group stipulates the basic framework for the management of risks arising in the course of business activities in the Toagosei Group Risk Management Rules, and in accordance therewith, has the Risk Management Committee in place. To increase the effectiveness of risk management at the group-wide level, the Committee regularly identifies and assesses risks, formulates risk countermeasures, and checks the status of the countermeasures.

Potential risks

- **Natural disaster/infectious disease** (earthquake, infectious disease, etc.)
- **Environmental and safety risk** (ground pollution, fire, explosion, etc.)
- **Product risk** (product liability, intensified competition, etc.)
- **Legal risk** (violation of laws and regulations, lawsuits filed, etc.)
- **Financial risk** (fund shortage, bankruptcy of business associates, etc.)
- **Personnel and labor risk** (harassment, misdeed of employees, etc.)
- **Public communications-related risk**(error or delay in information disclosure)
- **Geopolitical risk** (civil war, easing or strengthening of regulations, etc.)
- **Economic risk** (fluctuation of currencies, stock price, interest rate, etc.)
- **Social risk** (damage by harmful rumors, cyber-terrorism, etc.)
- **Other risks related to the external environment** (suspension of power and other lifelines, etc.)

Business Continuity Plan (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 Business Continuity Plan (BCP) that determines the standards on businesses that should be prioritized to continue operation and 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 2019, joint crisis training was held by Toagosei's Head Office and the Kawasaki Plant. In addition, media training was conducted to ensure Toagosei disseminates accurate information and messages.

The issues identified by the training and risk management by department were reviewed and discussed at a meeting of the Risk Management Committee and actions for improvement are being implemented.

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. In 2019, the Group implemented information leakage countermeasures, including strengthening of security when sending information to external parties by email, etc. and introduction of a system for detecting unauthorized activities in the network.

Dialogue with Shareholders and Investors, and Information Disclosure

Basic Policy and Framework

The Company clearly states in the Toagosei Group Basic Policy on Corporate Governance that it “engages in constructive dialogue with shareholders who have an investment policy that aligns with medium- to long-term shareholder profits,” and prescribes the policy on constructive dialogue with shareholders.

In terms of information disclosure, we strive to disclose information to all stakeholders in a timely, proper and fair manner 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, and the Rules of Tokyo Stock Exchange and other related regulations, to obtain stakeholders’ correct understanding of the Group.

Regarding investor relations and public relations, which are positioned as important management themes, we have established the Investors & Public Relations Department as a dedicated section, for which the director in charge of IR (Director, General Manager of Group Administrative Division) exercises control. We have also established the “IR Committee,” which deliberates on the basic policy and standards concerning information disclosure to improve the framework.

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 briefings (twice a year) and individual interviews for institutional investors and media organizations, and organize plant tours and other events for local residents and students. We also publish the Toagosei Group Report (this document) in Japanese and English as well as the “Shareholder Newsletter” for shareholders as materials (tools) of investors and public relations. These materials are also posted on our corporate website so that they will be widely accessible by all stakeholders.

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.



Financial briefing



Toagosei’s Corporate Website

We are enriching information disclosure on the corporate website.

<http://www.toagosei.co.jp/english>

Topics

Toagosei’s 75th Anniversary Event to Express Appreciation

On September 26, 2019, commemorating Toagosei’s 75th anniversary, we held an event to express our appreciation to stakeholders who have advanced hand in hand with us so far and to show our resolution that the Toagosei Group will move forward boldly into the future under the new corporate philosophy.





Compliance

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Offering of education to fully disseminate the new corporate philosophy and the new Guidelines for Conduct of the Toagosei Group Continuous compliance education Periodic delivery of information regarding compliance 	<ul style="list-style-type: none"> The New Year issue of the internal newsletter featured the new corporate philosophy Provided education on the new corporate philosophy to new career-track employees and regular service employees Revised the Compliance Handbook and distributed it to each department with a message to the departmental manager Started a series in the internal newsletter introducing legal information by referring to familiar cases 	<p>★ ★ ★</p>	<ul style="list-style-type: none"> Continuous compliance education Continuation of monitoring and checks by the Compliance Committee Execution of a questionnaire survey on compliance
<ul style="list-style-type: none"> No major violation 	<ul style="list-style-type: none"> No major violation 	<p>★ ★ ★</p>	<ul style="list-style-type: none"> 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 which are included in the Compliance Handbook held by all employees to ensure employee understanding.

Compliance Committee

The Group has a Compliance Committee consisting of officers and a legal counsel who is an external member. 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.

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. Furthermore, the Group has established a dedicated helpdesk for sexual harassment, etc., in an effort to provide a better work environment for women.

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 2019, we conducted education for new employees and for managerial personnel according to positions, education about safe driving for employees who drive company vehicles or who commute in their own cars, and education about contracts for sales personnel, among other efforts. Workplaces held education utilizing the Compliance Handbook. The Handbook describes various matters to be careful about in business activities, as well as relevant laws and regulations in the form of dos and don'ts in a user-friendly manner, contributing to comprehensively raising awareness among employees.

Compliance regarding Business Activities

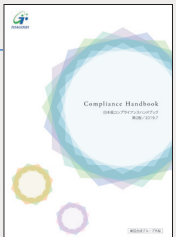
To ensure that the Group's business activities are in compliance with laws and regulations, we establish rules and conduct reviews by internal organizations. For example, regarding the Antimonopoly Act and the Subcontractor Act, we stipulate Toagosei's guidelines and describe initiatives in the Antimonopoly 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.

Topics

Compliance Handbook Revised

We revised the Compliance Handbook (first edition issued in October 2014) in July 2019 and distributed this second edition to our Group employees. It contains the Toagosei Group Code of Conduct and the Toagosei Group Manual of Behavioral Standards, which were revised in accordance with the new corporate philosophy, and provides explanation about the types of behaviors regarding which caution should be exercised, by referring to the latest cases, in light of the social situations and revisions of laws in recent years.

Compliance Handbook





Human Resources

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Maintenance of employment rate of persons with disabilities of 2.4% or higher 	<ul style="list-style-type: none"> Achieved employment rate of persons with disabilities: 2.93% 	★★★	<ul style="list-style-type: none"> Maintenance of employment rate of persons with disabilities of 2.4% or higher
<ul style="list-style-type: none"> Promotion of work-life balance (achievement of an average annual leave usage rate of 100%) 	<ul style="list-style-type: none"> Average annual leave usage rate: 90.1% 	★★	<ul style="list-style-type: none"> Promotion of work-life balance (achievement of an average annual leave usage rate of 100%)
<ul style="list-style-type: none"> Promotion of active participation by women (execution of the action plan for promoting active participation by women) 	<ul style="list-style-type: none"> Executed the action plan for promoting active participation by women based on the Act on Promotion of Women's Participation and Advancement in the Workplace Implemented initiatives to raise employees' awareness, adopted improvement proposals, implemented initiatives to increase employment of women 	★★	<ul style="list-style-type: none"> Promotion of active participation by women (execution of the action plan for promoting active participation by women)
<ul style="list-style-type: none"> Promotion of health management (reduction of the number of persons who are on long-term absence due to mental problems; reducing overwork/long-time work; increasing the rate of persons who maintain appropriate weight; decrease of smoking rate; 100% uptake rate for those who need reexamination) 	<ul style="list-style-type: none"> Conducted workplace improvement activities (feeding back the results of the stress check to workplaces) and held mental health training at two sites Provided guidance to each site for thorough implementation of time management, paying attention to the number of hours spent at work 50% uptake rate for those who need reexamination 	★★	<ul style="list-style-type: none"> Promotion of health management (reduction of the number of persons who are on long-term absence due to mental problems; reducing overwork/long-time work; 100% uptake rate for those who need reexamination; increasing the rate of persons who maintain appropriate weight; decrease of smoking rate)

Respect for Human Rights

Human Rights Protection Initiatives

○ Respect for Human Rights and Harassment Countermeasures

The Group respects fundamental human rights and strives to establish an environment where the diversity of human resources, including seniors, child-rearing employees, and employees with foreign citizenship is respected and where everyone can maximize their potential. We have prohibited sexual harassment, power harassment, and maternity harassment in the rules of employment and are working to raise awareness of human rights through education for managers and other employees to ensure that Group employees do not engage in discriminatory acts or human rights violations. We have set up internal and external reporting channels and, in the event that any type of human rights violation is detected, have made it possible to promptly take corrective measures following investigation by a committee whose members include outside specialists.



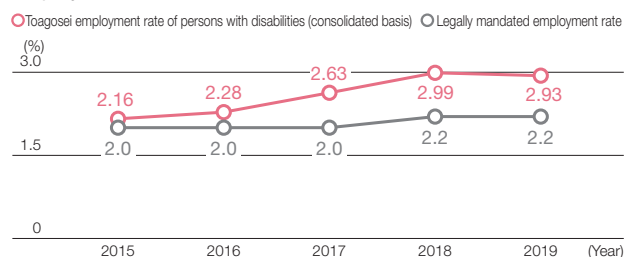
Human rights seminar (Tokushima Plant)

Enhancement of Employment Systems

○ Employment of Persons with Disabilities

To support the independence of persons with disabilities, the Group is striving to expand employment of persons with disabilities. The employment rate of persons with disabilities at the end of 2019 was 2.92% for Toagosei Co., Ltd. and 2.93% for the Group as a whole. A total of 52 persons with disabilities work in the Group, 17 of whom have severe disabilities. In 2020 and beyond, we will continue to cultivate a workplace environment where persons with disabilities can work with peace of mind.

Employment Rate of Persons with Disabilities



○ Employment of Older Persons

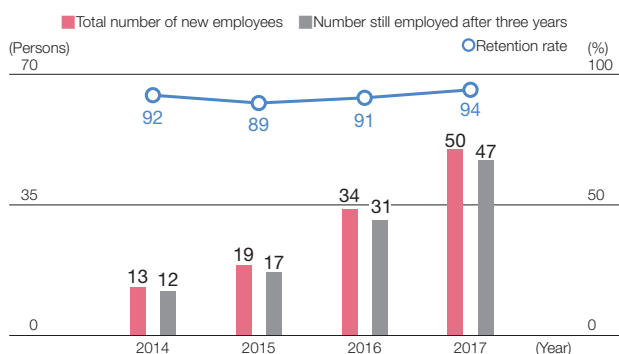
The Group is actively enhancing measures for the employment of older persons in light of revision of the pension system and other factors. We raised the mandatory retirement age from 60 to 65 in April 2013 to respond to a change in the age of eligibility for public pensions and are endeavoring to utilize the abilities of seniors.

Human Resources Development

Recruiting Activities

The Group seeks people with the enthusiasm and tenacity to think and tackle issues independently and see tasks through to the end. We make known the human resources we seek through company information sessions, websites, and other means to ensure understanding of our requirements by greater numbers of people. In selecting recruits, we place importance on interviews and consider whether people are able to contribute and flourish in the Group a more important judgment criterion than academic qualifications or past track record.

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



Human Resources Development Policy and Systems

To realize the Group Vision, the Group is strengthening its high-value-added businesses and implementing a growth strategy that includes overseas development. We consider that each individual employee is the source of power to achieve the Group Vision and aim to maximize and expand the latent potential of each individual.

To develop excellent, highly motivated human resources who will drive the Group's growth and support employees pursuing self-growth, we conduct a wide range of educational programs, including level-specific training, training for promoted employees, and other group training as well as e-learning, distance learning, and overseas training.

Development of Young Employees

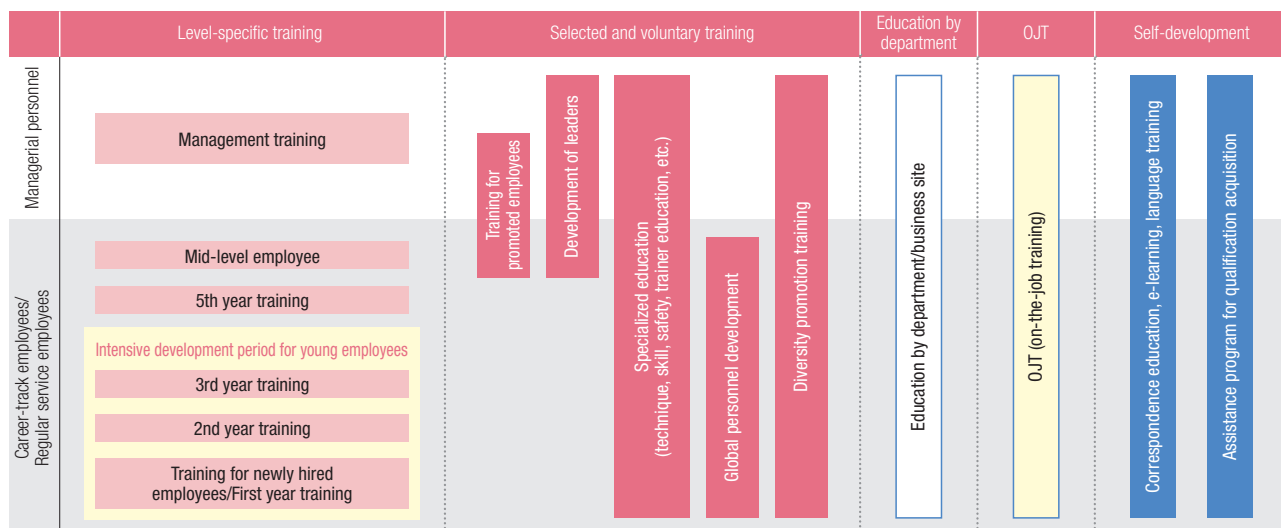
The Group focuses on developing young employees in the hope that they will become a substantial part of the workforce at an early stage. Having positioned the first three years after joining Toagosei as the intensive development period, we offer them step-by-step and level-specific training until the third year to improve their basic abilities as a member of society and other skills necessary to perform their duties. In our programs, we encourage trainees to work closely with their colleagues who joined Toagosei at the same time so that their amicable rivalry leads to the improvement of future behaviors and self-growth.

We aim to develop young employees who can think independently and proactively take actions by involving other people.



Fifth year training for regular service employees

Chart of Education System



Technical Education

To further strengthen development of personnel equipped with skills that contribute to stable workplaces and actively pass down our technologies and skills to the next generation, we have assigned employees responsible for technical education to the Nagoya Plant, enhancing specialized education in technical departments (operation, equipment, unit operation, safety, etc.).

Group training includes an interactive program that enables participants to not only acquire basic knowledge, but also deepen their understanding by exchanging views about the workplace equipment they choose to study.

The introduction of a simulator for process education has enabled us to offer more practical education. Using this simulator, trainees can learn about not only operating methods but also process principles. 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 of plant operation, performing operation in the event of abnormality and in detecting causes of the abnormality.



Training with a simulator



Safety awareness training

We are also developing personnel who ensure safe and stable operation by enhancing safety education including experience-based training and hazard prediction training.

Self-development and Career Development Assistance

The Group has prepared distance education, e-learning courses and online video courses that contribute to knowledge acquisition and skills development in areas such as basic business abilities, management skills, and job-specific expertise. We support the growth of employees who complete such training by setting up an assistance program that covers training fees and establishing an environment that facilitates employee self-development. Furthermore, we conduct TOEIC tests and actively support acquisition of public qualifications, using them to support the career development of employees.

Suggestion Scheme, Service Invention Compensation Scheme

Toagosei has instituted the Suggestion Scheme to identify original, ingenious inventions and ideas of individual employees and promote employee self-expression and workplace refinements and improvements. Also, when an employee has made a service invention, device, or design, we reward the accomplishment through the Service Invention Compensation System. Excellent suggestions and service inventions are recognized through the Awards System via a review committee. Through these initiatives, we continuously seek to energize employees and promote business process improvement and innovation.

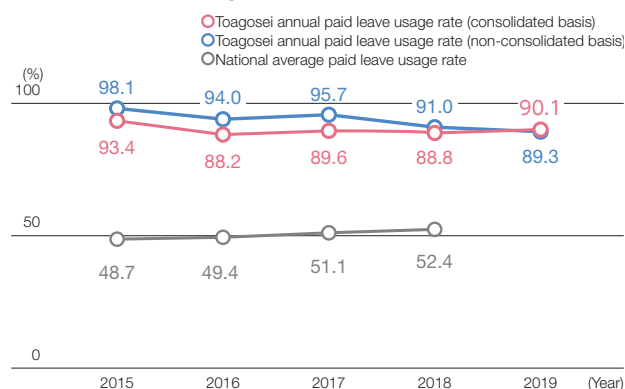
Creating an Employee-friendly Environment

Promotion of Work-life Balance

The Group aims to realize work-life balance for employees. We strive to reduce long working hours for our employees so that work and family life are well-balanced and even have positive effects on each other.

We stressed the importance of efficient working before it emerged as a prominent issue in society. A no-overtime day was implemented in 2011, and in 2015, we promoted the use of annual paid leave and reduced designated work hours of full-time daytime workers by 15 minutes. In 2017, we also established a system to visualize the hours spent at work by introducing an entry control system with an IC card reader. As a result of these initiatives, the Group's annual leave usage rate in and after 2015 drastically improved to around 90%.

Annual Paid Leave Usage



* National average paid leave usage rate: General Survey on Working Conditions (Ministry of Health, Labour and Welfare)

* Toagosei allows employees to retain annual paid leave even after the expiry of the statutory period of validity (up to 40 days); the above figures include the usage of such retained paid leave in the calculation.

Promotion of Flexible Work Style

We cultivate an environment that enables employees to develop their careers while balancing work and private life and assist them in realizing their own individual work styles.

We have also introduced a work-at-home system to encourage employees to reconcile a comfortable life and work by enhancing productivity. This system is applicable to not only employees who raise children and provide long-term care, but also to those whose work is expected to be more productive and efficient by working at home.

In addition, we have introduced a system allowing employees to retain up to 40 days of annual paid leave even after the expiry of the statutory period of validity. The retained leave can be used for non-work-related injury or sickness, long-term care, childcare hours (employees who raise elementary school children in sixth grade or under), and volunteer work.

Leave System for Spouse Relocation and Reentry System

To assist employees in balancing work and family life, in January 2017 Toagosei introduced the leave system for spouse relocation, which allows leave of up to three years for employees accompanying their spouses on overseas assignment, as well as the reentry system for registering candidates for reemployment in cases where employees have resigned due to family circumstances such as transfer of a spouse, childcare, or nursing care. Through operation of these systems, we aim to deal flexibly with the family circumstances of employees.

Self-declaration System

To promote appropriate assignment of employees, Toagosei has instituted the self-declaration system. Once a year, employees express their thoughts and wishes about their own work to the company, and employees and their immediate managers discuss the declaration contents in an interview.

Other Systems

Toagosei has instituted the following systems to create an employee friendly environment.

- Leave systems such as marriage leave, mourning leave, nursing care leave, half-day paid leave, and leave for refreshment
- Flextime work system, short-time work system
- Dormitory and company housing system
- Work-at-home system
- Long-term care leave for a period longer than the statutory number of days



Employee dormitory in Tokai City, Aichi Prefecture

VOICE

Business Casual Style Guidelines Revised

The Toagosei Group revised its Business Casual Style Guidelines in August 2019 for the first time in eight years. In addition to the change in the external environment such as the upward trend of the maximum temperature in the summer, in view of the increasing interest in society in women's active participation and employees' health, office and commuting attires are becoming more flexible. The objectives of the Guidelines are unchanged: to enable our employees to work comfortably without having to wear constricting attire and to dress in an environmentally friendly manner at work (CoolBiz and WarmBiz) as a global warming mitigation measure. The aim of the revision is to further vitalize our employees and enhance productivity. Based on the basic concept of "clothing for work," it is now permissible to wear jeans, sneakers, and collarless shirts (as opposed to conventional men's business shirts), provided the clothing matches the criteria of being considerate to others and appropriate for business people.



Toyokazu Shiroya
General Manager, Human Resources Department, Group Administrative Division

Active Participation by Women

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

The Toagosei Group is working on development of a structure to enable women to fully demonstrate their abilities, and for this purpose has set promotion of active participation by women as a key CSR objective since 2016. Toagosei formulated an employer action plan in March 2016 based on the Act on Promotion of Women's Participation and Advancement in the Workplace. Our objectives incorporated in the plan are to achieve a female hiring ratio of 30% or higher each year and triple the ratio of female managers by January 1, 2021 (compared to January 1, 2016).

Eruboshi Certification

In May 2016, Toagosei obtained certification (Grade 2) from the Minister of Health, Labour and Welfare under the Eruboshi system as an outstanding company for promoting women's participation under the Act on Promotion of Women's Participation and Advancement in the Workplace. We have met certification criteria for four evaluation items: recruitment, continued employment, working hours and other working conditions, and diversity of career courses. We will continue to support active participation by women in the workplace.

Assignment of Women to Manufacturing Sites

Since 2015 Toagosei has assigned women to workplaces operating under the shift working system at manufacturing sites, where no women had been appointed previously, and continues to expand the job categories available to women. This assignment has promoted reduction of workload and reviewing of the measures to improve the work environment from the unique perspective of women. The Company has introduced tools that can be operated even with a small amount of force and power assist apparatuses that can reduce the labor of transporting heavy items.

Tours for Female Junior and Senior High School Students

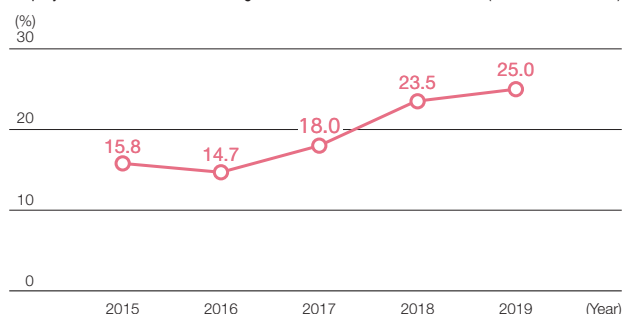
Toagosei endorses an initiative that encourages selection of career paths in the fields of science and engineering by female students (RICOCHALLE, short for Science and Engineering Challenge) sponsored by the Cabinet Office, the Ministry of Education, Culture, Sports, Science and Technology, and Japan Business Federation (KEIDANREN). As part of our support for this initiative, we held plant and research laboratory tours annually for female junior and senior high school students from 2016 to 2019.

Through the tours, we conveyed to the students the fascination and unlimited potential of science and the existence of workplaces where women can energetically work and flourish even in the chemical industry.



Laboratory visit for female junior and senior high school students

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



VOICE

Greater Choice of Workplaces Where Women Can Display Their Capabilities

Soon after joining Toagosei, I was assigned to the Analytical Lab at the Nagoya Plant where I did analytical work before being transferred to the Environment & Safety Office. After a few more years, I became a job leader of regular service employees. Then, I was transferred to the Office Management Section where my boss encouraged me to try to become a supervisor and I eventually became the first female regular service supervisor in 2019. Currently, as part of personnel affairs operations, I am in charge of supporting female regular service employees working at manufacturing sites. I am striving to create opportunities to talk to them regularly to listen to their concerns and views on site so as to reflect the findings in improvement of the working environment. Although I recognize the difficulty of achieving a common understanding among the people in the workplace, I am resolved to make progress while respecting these various perspectives.



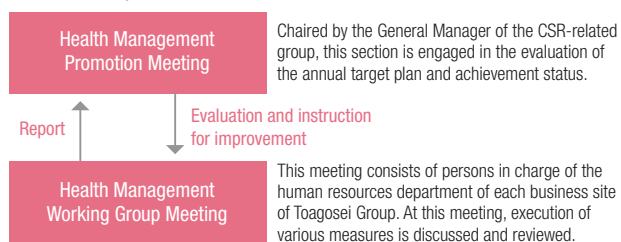
Naomi Sasa
Office Management Section,
Administrative Department, Nagoya Plant

Approach to Health Management

Health Management Promotion System

Considering promotion of maintenance and improvement of employee health as an investment that leads to improved corporate profits in the medium term, the Group has established a standing and dedicated group, which has since been conducting and promoting healthcare administration in a strategic, systematic and continuous manner. We aim to enhance our corporate value by improving productivity and creativity, as well as by suppressing increased medical expenses and the risk of absences due to sickness through such initiatives. Centering on the Health Management Promotion Section of the Human Resources Department, we operate a PDCA cycle through various committee meetings. We strive to solve the problems of employees suffering from unhealthy conditions and take preventive measures in cooperation with the Health Insurance Society, aiming to realize zero employees on long-term leave due to lifestyle-related diseases and other illness by 2025.

Promotion System



Employee Health Promotion

Toagosei conducts comprehensive medical examinations and periodic medical examinations for the purpose of employee health management. In addition to the subsidized anti-influenza vaccination that is available group-wide, each business site engages in unique activities, such as holding health guidance sessions given by hygiene staff and health seminars presented

by a doctor or a medical professional, as well as offering recreational activities for health improvement to raise employee awareness of health management.



Minato City Half Marathon 2019

Mental Healthcare

To enable employees to ascertain their own stress level, the Group conducts an annual stress check and strives to create workplaces where people do not develop mental health issues. To this end, based on the results of the stress check, we analyze the tendency and causes of stress in each workplace, provide feedback to supervisors of these workplaces, and take measures such as providing mental health training for managers who play a major role in the care of the workplace. Furthermore, we have set up a consultation counter to enable employees and their family members to anonymously receive counseling without any involvement of the Company. This system helps employees receive counseling services with ease.



Seminar on mental health and health management

Topics

Certified as a White 500

Toagosei was certified as a Health and Productivity Management Organization (White 500) for the second consecutive year. This program is organized by the Ministry of Economy, Trade and Industry (METI) in collaboration with Nippon Kenko Kaigi, which consists of leaders from economic circles, medical groups and local municipalities, for the purpose of honoring corporations that perform outstanding health management. The criteria became stricter than the previous year and only companies ranked within the top 500 as a result of the survey of the degree of health and productivity management were certified as "White 500." Considering that the physical and mental health of each individual employee is an important asset, the Group continues to strengthen the practice of healthy management.





Enhancement of Contributions to Society and Communication

Relevant SDGs



P Targets for 2019	D Results in 2019	C Achievement	A Targets for 2020
<ul style="list-style-type: none"> Contribution to the development of next-generation personnel through support for academic research, culture & art, and sports Promotion of conservation activities for biodiversity 	<ul style="list-style-type: none"> Conducted plant tours, voluntary clean-ups, etc. in the areas where the Group's business sites are located Continued participation in the Human Resources Fostering Program in Chemistry of the Japan Chemical Industry Association, continued donations to the "Tobitate! (Leap for Tomorrow) Young Ambassador Program," continued sponsorship of T League, supported activities of the International Chemistry Olympiad as a member of the donation committee 	★★★	<ul style="list-style-type: none"> Promotion of harmonious coexistence with local communities and communication with the communities Contribution to the development of next-generation personnel through support for academic research, culture & art, and sports Promotion of conservation activities for biodiversity

Social Contribution Activities

Social Contribution Activities

The Group actively engages in social contribution activities, such as support of sports, and monetary donations in the event of a major disaster. In 2019, the Group's activities included continuation of official sponsorship of T League premier table tennis league of Japan and provision of monetary donations to Fukushima Prefecture and Ibaraki Prefecture, which were affected by Typhoon Hagibis.



Visit and donation of snacks to a special needs school for children in Zhangjiagang City, China (TOA-DIC Zhangjiagang Chemical Co., Ltd.)

Activities for Aesthetic Maintenance and Conservation of Biodiversity

The Group's business sites are continuously and actively involved in activities for maintaining greenery that contributes to biodiversity, clean-up and aesthetic maintenance campaigns in the neighborhood of the Group's plants, and clean-ups of rivers and seashores. The main activities conducted in 2019 are described in the table below. Many of our employees participate in these activities, which also lead to enhancing the awareness of individuals.



Participation in Love Earth Clean-up 2019 in Fukuoka City (Fukuoka Branch, Aronkasei)

Example of Activities for Aesthetic Maintenance and Conservation of Biodiversity, etc.

Site	Activity
Toagosei	Endorsement of the Declaration of Biodiversity by Keidanren and Action Policy
Toagosei, Aronkasei	Endorsement of "Cool Choice" initiative sponsored by the Ministry of the Environment
Yokohama Plant, Kawasaki Plant	Participation in the Tokyo Bay General Survey for Water Environment and the water quality survey
Yokohama Plant, Kawasaki Plant, Head Office	Use of "Forest Thinning Support Paper" supported by <i>Morino Chonai-Kai</i> (Forest Neighborhood Association)
Nagoya Plant	Participation in "Forest Growing Activities by Aichi-based Companies" of Aichi Prefecture, clearing of underbrush around the Tokai Nature Footpath in the Iwayado Quasi-National Park in Seto City, Aichi Prefecture
Yokohama Plant	Participation in "Tsutsumi Clean Campaign" and "Tsutsumi River Clean Campaign" clean-up activities
Kawasaki Plant	Participation in "Sangyo Doro (Industrial Road) Clean-up Campaign"
Takaoka Plant	"Futagami District Clean Day" clean-up activities, voluntary clean-up of seashore
Tokushima Plant	Clearing of underbrush for "Takamaruyama Sennennomori (1,000-year Forest of Takamaru Mountain)," "Tokushima Forest Growing Collaboration Project" for forest thinning
Nagoya Plant, Monozukuri Center, Aronkasei	Participation in Tokai City Adapt Program, Shimpo Greenbelt Sports Park clean-up activities. Received bibs and tongs from Tokai City.
Monozukuri Center, Aronkasei	Maintenance and management of in-house biotope
Fukuoka Branch, Aronkasei	Participation in Love Earth Clean-up 2019 organized by the Environmental Agency of Fukuoka City
TOA-DIC Zhangjiagang Chemical Co., Ltd.	Clean-up activities for a wetland in Jiyang Lake Ecological Garden

Enhancement of Communication

Harmonious Coexistence with Local Communities

Based on the conviction that an enterprise can only endure and flourish in society on the basis of coexistence with local communities and by contributing to them, the Group's business sites actively engage in local communities, such as by organizing, sponsoring, and providing monetary donations for local events, promoting exchanges with local residents and local organizations, and holding plant tours. For these activities, in 2019 Toagosei received a certificate of appreciation from Minami-ku, Nagoya City, and was commended by Tokai City, Aichi Prefecture, as a company that contributed to development of the city and its community. Toagosei also supports development of tourism and further regional revitalization. As part of these efforts, we sponsor TOHOKU HOUSE, a project launched in 2020 to promote the Tohoku region and Niigata by opening a pavilion in Tokyo for a limited period of time to publicize these areas. We will continue our efforts to be of service to people in local communities so as to deepen their recognition and understanding of the Toagosei Group.



TOA-ren, an Awaodori dance troupe consisting of Toagosei employees, performing at a festival (Tokushima Plant)

Fostering the Next Generation

The Group's business sites are vigorously engaged in fostering and supporting young people who will lead Japan in the future, including by offering internships for students of colleges of technology or universities, plant tours for students of elementary, junior high, and high schools, and participation in local events with a booth for experiments and handicrafts, etc. for elementary, junior high, and high school students. In 2019, we participated in the 2019 Summer Holiday Children's Chemical Experiment Show and organized an event as part of the RICOCHALLE Summer of 2019. Also, since 2016, Toagosei has been donating to the "Tobitate! (Leap for Tomorrow) Young Ambassador Program, a collaborative initiative between the government and the private sector that supports overseas study," which was established by the Japan Student Services Organization (Independent Administrative Agency). In recognition of our support, Toagosei received the Medal with Dark Blue Ribbon. These activities are helping arouse the interest of young people in chemistry and promoting their understanding of business.



Plant tour of junior high school students (Takaoka Plant)

Examples of Activities for Harmonious Coexistence with Local Communities

Site	Activity
Head Office	Sponsorship of Minato City Half Marathon 2019 in Minato-ku, Tokyo
Nagoya Plant	Holding of the TOA Cup Mama-san Volleyball Competition at the company's gym. Publication of Seiryu local PR newsletter
Tokushima Plant	The TOA-ren troupe performed Awaodori dancing at a festival. Holding of a volleyball competition at the company's gym.
Hirono Plant	Sponsorship of Hironomachi Summer Festival 2019, launch of a firework with a message
Shiga Plant, Aronkasei	Participation in the 28th Lake Biwa Takashima Dragon Boat Race. Guardian activities (calling for safe driving in the vicinity of the plant)
Monozukuri Center, Aronkasei	Provision of lanterns made from polyvinyl chloride pipes for installation at a firefly festival venue in response to a request by Tokai City

Topics

Participation in the 2019 Summer Holiday Children's Chemical Experiment Show

On August 3 (Saturday) and 4 (Sunday), 2019, a summer event for children featuring chemical experiments and demonstrations was held at the Science Museum in Kitanomaru Park, Chiyoda-ku, Tokyo, organized by the "Dream Chemistry 21" Organizing Committee. Toagosei had a booth for a workshop using Aron Alpha® instant glue, which was very popular, visited by a cumulative total of 360 elementary school children.



Seiryu, a Local PR Newsletter, Published by the Nagoya Plant

With the aim of becoming a plant more open to the local community, the Nagoya Plant has been publishing *Seiryu*, a local PR newsletter, twice a year since 2014. The 13th issue published in January 2020 features the CSR activities of the Nagoya Plant and the TOA Cup Softball Competition.





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