



TOSOH

TOSOH REPORT 2019  
KEY DATA & REFERENCES

**TOSOH CORPORATION**

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# ENVIRONMENT & SOCIETY



## Tosoh Group Input and Output

The Tosoh Group is reducing the environmental impact of its products throughout their life cycles. It even manufactures its products in a way that makes the most effective use of limited resources or “inputs”—such as fuel, raw materials, and water resources—and that minimizes waste “outputs” and the extent of the company’s environmental loading on air and water.

### Scope of calculation

Tosoh: Nanyo Complex, Yokkaichi Complex, Tokyo Research Center, Polyurethane Research Laboratory

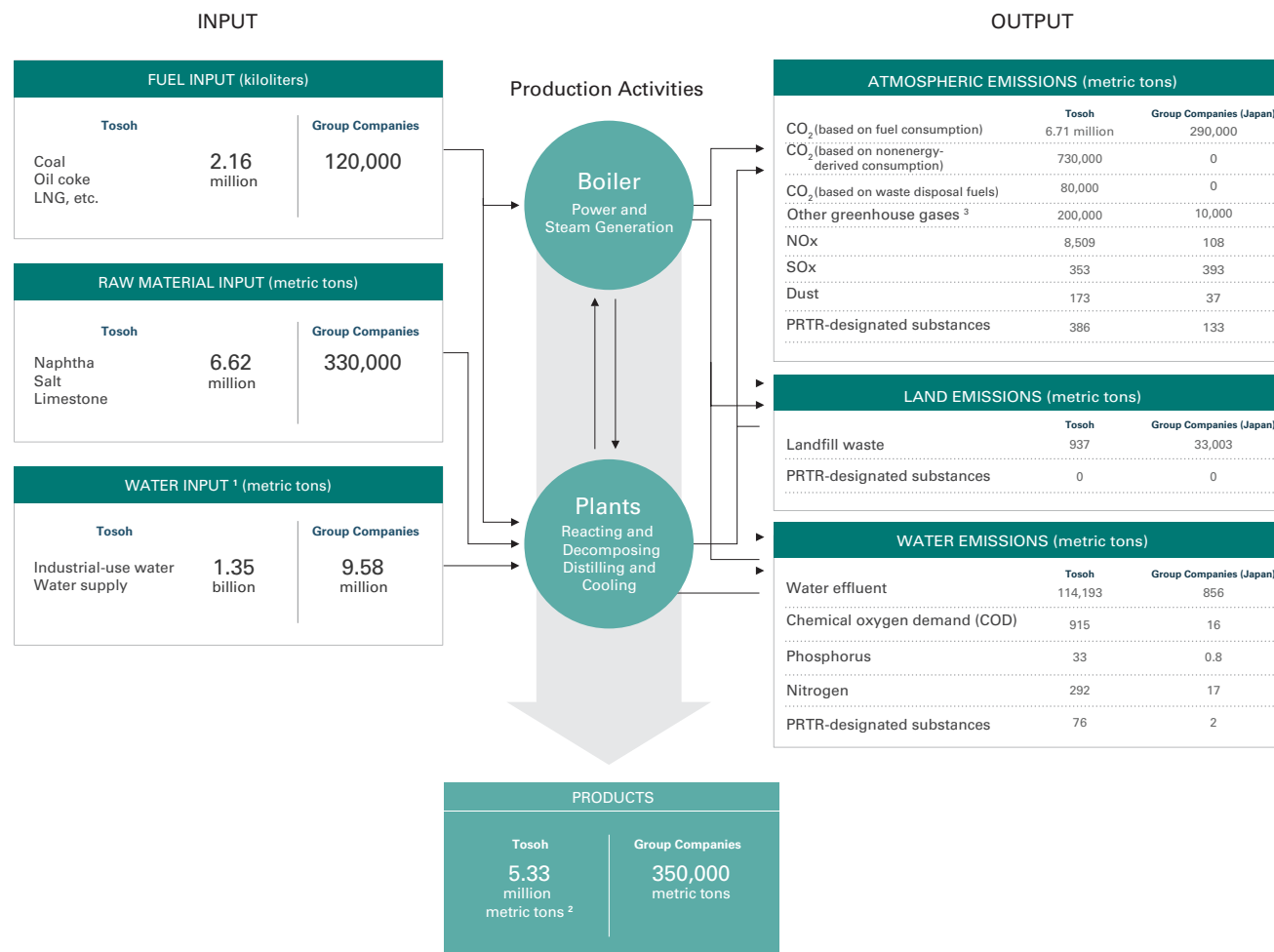
### Group companies (Japan):

Asia Industry Co., Ltd.  
Tosoh AIA, Inc.  
Tosoh SGM Corporation  
Tosoh Quartz Corporation  
Tosoh Silica Corporation  
Tosoh Speciality Materials Corporation  
Tosoh Zeolum, Inc.  
Tosoh Ceramics Co., Ltd.  
Tosoh Hyuga Corporation  
Tosoh Finechem Corporation  
Tohoku Tosoh Chemical Co., Ltd.  
Toyo Polymer Co., Ltd.  
Nippon Miractran Co., Ltd.  
Hokuetsu Kasei Co., Ltd.  
Minamikyushu Chemical Industry Co., Ltd.  
Rinkagaku Kogyo Co., Ltd.  
Rensol Co., Ltd.

1. As of fiscal 2019, totals for water input include industrial-use water, seawater, groundwater, and tap water.

2. Excludes internally consumed products.

3. As of fiscal 2019, totals for other greenhouse gases represent the total of N<sub>2</sub>O, CH<sub>4</sub>, SF<sub>6</sub>, and HFCs.



## ENVIRONMENT & SOCIETY

### Group Companies (overseas)

INPUT						
	Fuel (crude oil equivalent kiloliters)	90,000 kl	Raw materials	580,000 metric tons	Water input (industrial-use water)	4.39 million metric tons
OUTPUT						
	Products	Group companies (Japan)	600,000 metric tons	Atmospheric emissions	CO <sub>2</sub> (energy-derived)	220,000 metric tons

### Scope of calculation

Tosoh (Shanghai) Polyurethane Co., Ltd.  
Tosoh (Ruian) Polyurethane Co., Ltd.  
Tosoh (Guangzhou) Chemical Industries, Inc.

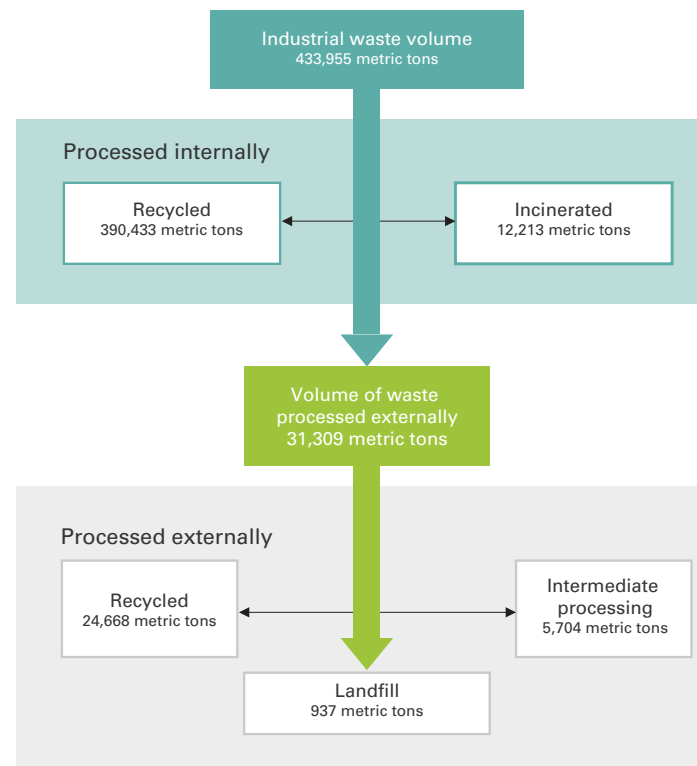
P.T. Standard Toyo Polymer  
Philippine Resins Industries, Inc.  
Tosoh Polyvin Corporation

Mabuhay Vinyl Corporation  
Tosoh Hellas A.I.C.  
Tosoh Advanced Materials Sdn. Bhd.

### Industrial Waste Volume

Tosoh is reducing its landfill waste output by recycling resources to achieve the target set by the Japan Business Federation's Voluntary Action Plan on the Environment. That plan promotes a recycling-based society and states as its phase IV target to reduce the volume of industrial waste disposed of as landfill by around 70% in comparison with results for fiscal 2001. Tosoh achieved this target in fiscal 2019, with landfill waste at 937 metric tons.

### Industrial Waste Processing Flow



The values given are totals for the Nanyo Complex, Yokkaichi Complex, Tokyo Research Center, and Polyurethane Research Laboratory. In fiscal 2019, final disposal by landfill accounted for 0.22% of total industrial waste volume.

### Total Landfill Waste



In our recycling efforts, we promote the proper and eager handling of resources. When outsourcing waste processing to external contractors, for example, we manage the outsourced waste using electronic manifests. We also encourage the recycling of plastic waste collected by local governments using a “local production for local consumption” model. That sees us eagerly accepting external plastic waste and making effective use of it as a raw fuel in cement production.

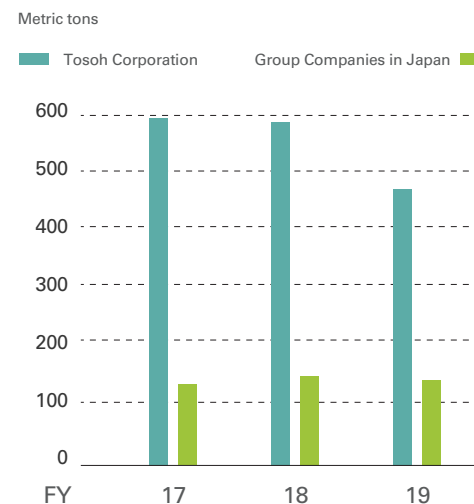
We ensure that waste is managed and disposed of appropriately at our domestic group companies as well.

FY 17: Total industrial waste 419,850 metric tons/landfill waste 1,382 metric tons, or 0.3%

FY 18: Total industrial waste 424,215 metric tons/landfill waste 830 metric tons, or 0.2%

FY 19: Total industrial waste 433,955 metric tons/landfill waste 937 metric tons, or 0.22%

### PRTR-Applicable Substance Emission Volume



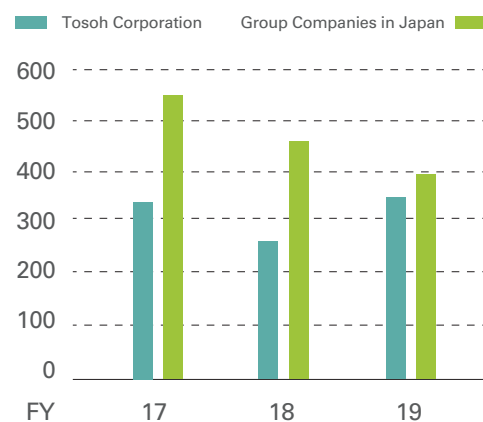
To reduce environmental loading from chemical substances, Tosoh and its domestic companies have established voluntary targets. They are also working to reduce their emissions of PRTR-designated substances in accordance with Japan’s Pollutant Release and Transfer (PRTR) law.

Tosoh’s emissions of PRTR-designated substances in fiscal 2019 totaled 462 metric tons, a reduction of 114 metric tons from fiscal 2018. PRTR-designated emissions by domestic companies totaled 135 metric tons, down 12 metric tons from fiscal 2018.

## ENVIRONMENT & SOCIETY

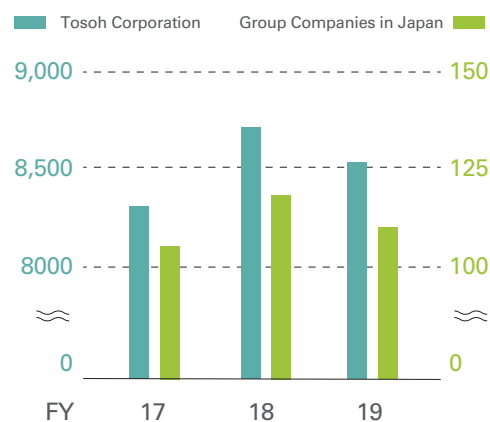
### SOx (sulfur oxide)

Metric tons



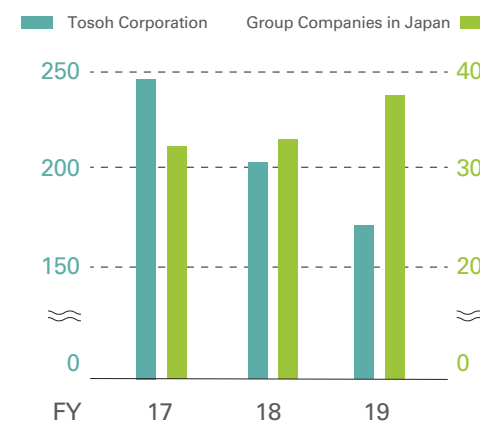
### NOx (nitrogen oxide)

Metric tons



### Dust

Metric tons



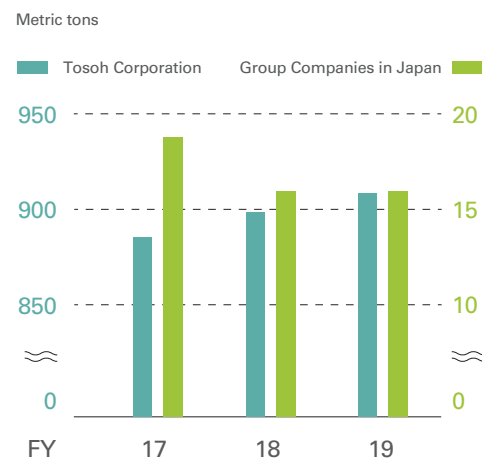
Tosoh and its domestic companies monitor their emissions of air pollutants, such as SOx (sulfur oxide); NOx (nitrogen oxide); dust; and VOCs (volatile organic compounds), in accordance with Japan's Air Pollution Control Act.

In fiscal 2019, Tosoh emitted 1,213 metric tons of VOCs, a reduction of approximately 60% compared with fiscal 2001's 3,044 metric tons.



## ENVIRONMENT & SOCIETY

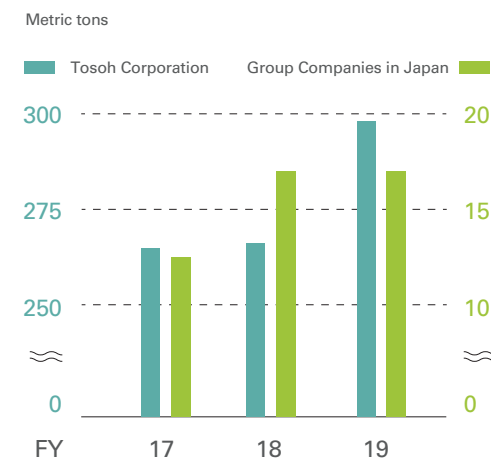
### COD (chemical oxygen demand)



### Phosphorus



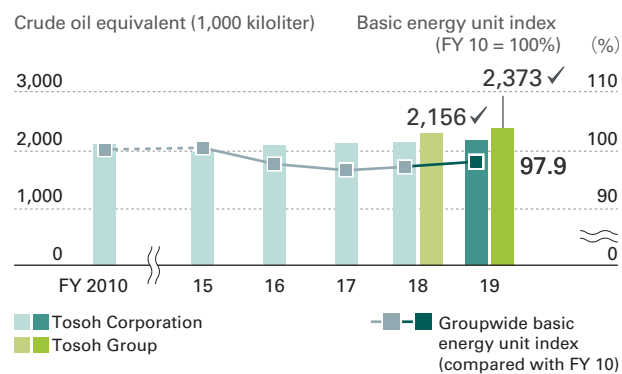
### Nitrogen



Tosoh and its domestic companies monitor their emissions of COD (chemical oxygen demand), nitrogen, phosphorus, and other pollutants in wastewater in accordance with Japan's Water Pollution Control Act.

In fiscal 2019, neither the parent company nor its domestic companies exceeded any legal regulatory or agreed-to values.

## Energy Consumption Index of Energy Used

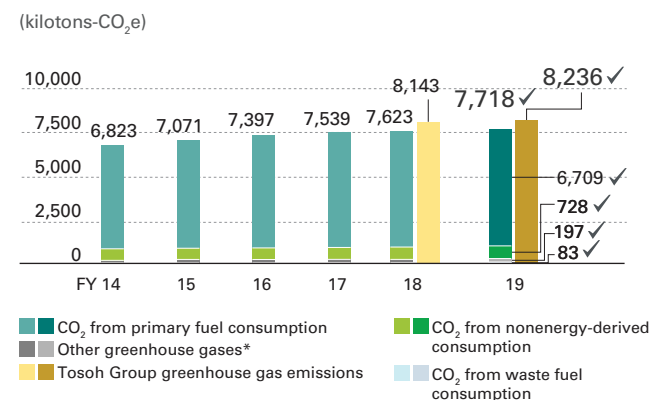


In fiscal 2019, the basic energy unit index for Tosoh Corporation alone was 97.9% compared with fiscal 2010, a decrease of 0.9% compared with fiscal 2018. This reflected the impact of problems associated with production equipment stoppages.

\*Values for the crude oil equivalent of energy used and for the energy consumption index versus fiscal 2010 are calculated using the method stipulated by Japan's Act on the Rational Use of Energy. When calculating energy consumption specifically for Tosoh Corporation, we deduct the consumption of energy sold to other firms. The data presented here includes emissions from the former Nippon Polyurethane Industry Co., Ltd. (NPU), for the period from fiscal 2010 to September of fiscal 2015, prior to NPU's merger with Tosoh. Data for fiscal 2018 does not include emissions from the former Tosoh F-Tech, Inc.

Note: Figures with a ✓ have been certified by an independent third-party institution.

## Greenhouse Gas Emissions



GHG emissions for Tosoh Corporation in fiscal 2019 increased over fiscal 2018 levels because of a rise in energy consumption stemming from production equipment stoppages.

\*Greenhouse gas emissions are calculated using Japan's Mandatory Greenhouse Gas Accounting and Reporting System.

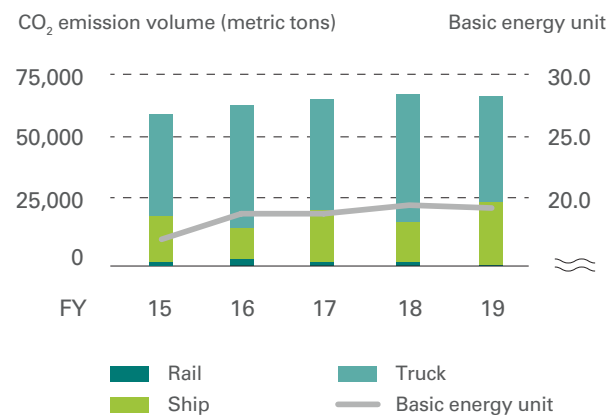
Data presented here includes emissions from the former NPU for the period from fiscal 2010 to September of fiscal 2015, prior to NPU's merger with Tosoh. Data for fiscal 2018 does not include emissions from the former Tosoh F-Tech, Inc. Data to fiscal 2018, moreover, is for CO<sub>2</sub> and N<sub>2</sub>O emissions only, whereas data for fiscal 2019 onward represents the total of CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, SF<sub>6</sub>, and HFC emissions.

### Logistics-Related CO<sub>2</sub> Emissions and Basic Energy Unit

The CO<sub>2</sub> emissions from distribution in fiscal 2019 increased 3.4% compared with fiscal 2018 owing to an increase in product transportation volume (in ton-kilometers). The logistics basic energy unit was 18.6, down 0.5 points on fiscal 2018.\* This was attributable to the increased volume of transport by ship, measured as transport ton-kilometers.

Tosoh is working to reduce its CO<sub>2</sub> emissions by improving energy efficiency through a modal shift in transport that sees it promoting marine and rail transport and by improving fuel efficiency. In fiscal 2019, we implemented initiatives to improve vessel fuel efficiency and transport efficiency.

\*The logistics basic energy unit = energy consumption converted to crude oil (kiloliter) / transport ton-kilometers (one million ton-kilometers).



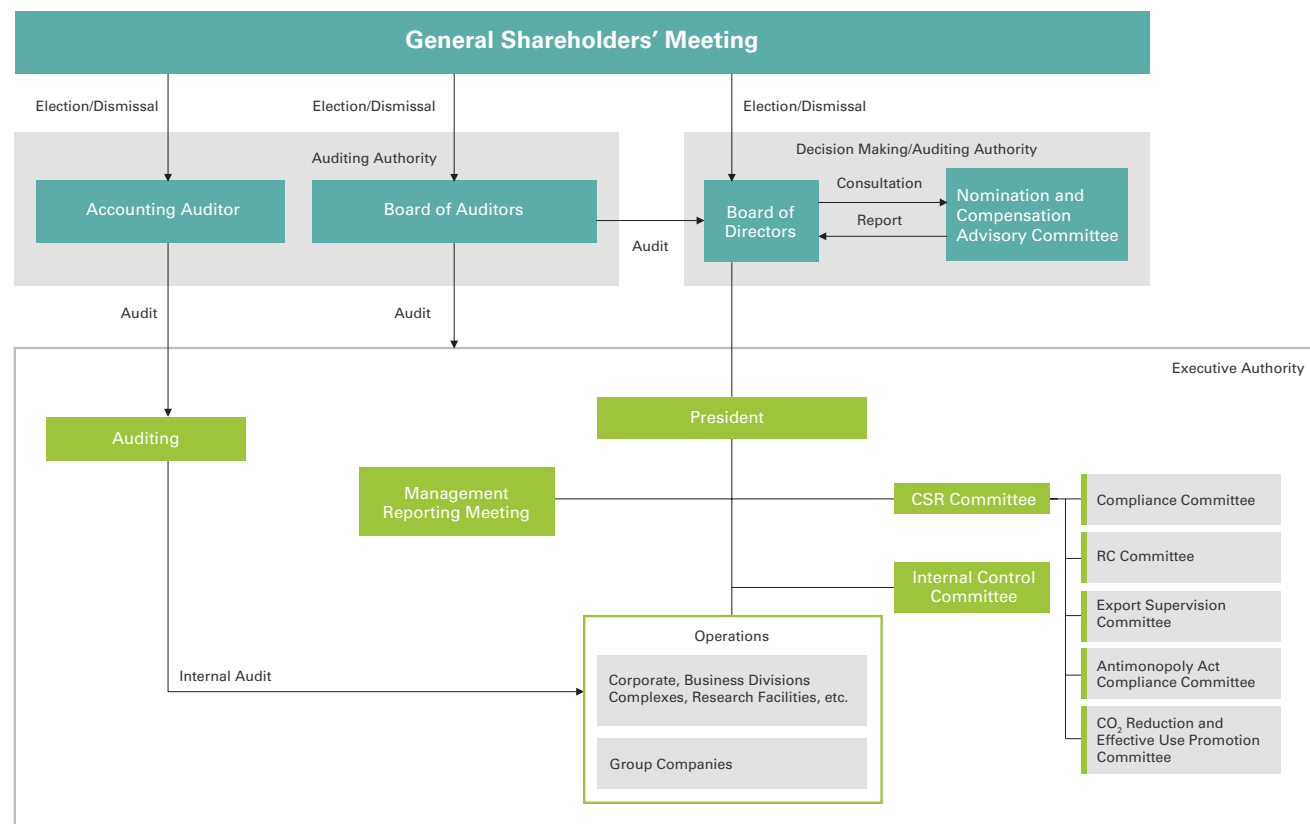
# G O V E R N A N C E



## GOVERNANCE

### Governance Structure

To improve our corporate value, we have established an organizational structure that enables us to respond swiftly and efficiently to changes in our business environment. We are also working to ensure sound, fair, and transparent corporate management. We respect the intent and spirit of Japan's Corporate Governance Code and work in continuous pursuit of ideal corporate governance.



**Board of Directors**



1- Toshinori Yamamoto  
Representative Director and President

2- Katsushi Tashiro  
Representative Director and Senior Executive Vice President

3- Masayuki Yamada  
Director and Executive Vice President

4- Shingo Tsutsumi  
Director and Senior Vice President

5- Etsuya Ikeda  
Director and Senior Vice President

6- Tsutomu Abe  
External Director

7- Kenji Ogawa  
External Director

8- Sukehiro Itoh  
Internal Auditor

9- Kouji Kawamoto  
Internal Auditor

10- Tetsuya Teramoto  
External Auditor

11- Tsuneyasu Ozaki  
External Auditor

# R E S P O N S I B L E   C A R E



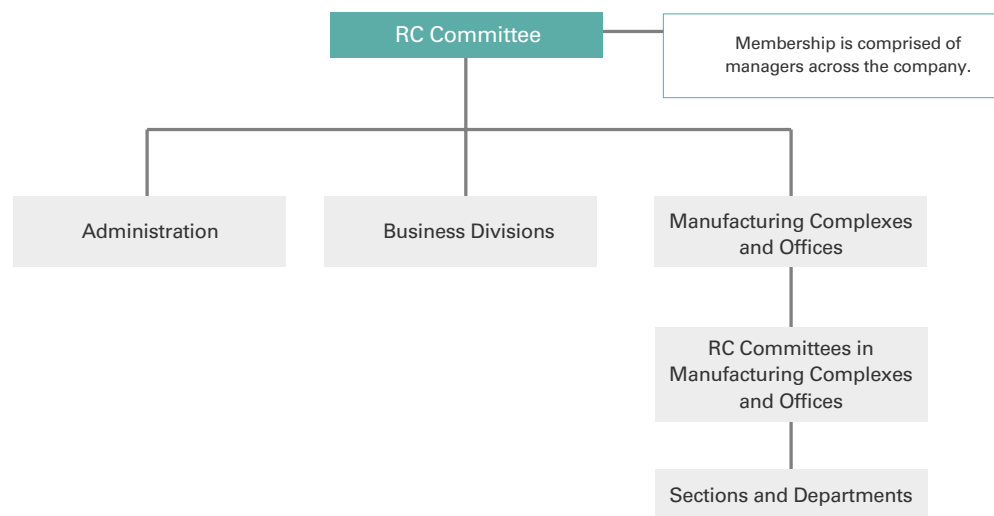
### RC Promotional Structure

The Responsible Care Committee, which promotes RC activities, is chaired by the director responsible for the company's Environment, Safety and Quality Control team. Managers from Tosoh's Purchasing and Logistics team, business divisions, manufacturing complexes and offices, and research centers serve as members of the committee.

The RC Committee formulates action policies for the company, deliberates, advises, and approves important matters, and devises key measures related to activities. The results of the proceedings and annual action policies of the RC Committee are discussed and approved at Board of Directors meetings.

Based on the Board's approval, the RC Committee devises RC plans for each division and conducts RC activities. The committee gains an understanding of how each division executes those activities during periodic RC Audits. The results will be reflected upon an improvement plan through a Plan-Do-Check-Act (PDCA) cycle for the next fiscal year, with the aim of upgrading the activities.

The results of Tosoh's RC activities are provided in the annual CSR Report in Japanese, and are further provided to local communities during exchange forums. Key information from the CSR Report is excerpted and translated into English and presented in Tosoh's online annual report.





## RESPONSIBLE CARE

### RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Safety and Disaster Prevention and Occupational Safety and Health	Achieve zero abnormal events and work time lost (Tosoh Corporation)	<p>Experienced two abnormal events and lost time by 7 employees because of accidents</p> <hr/> <p>(1) Rolled out 5S and Hazard Prediction Training activities company-wide; Continued third-party evaluations of Hazard Prediction Training; RC Committee chairman conducted 5S patrols and awards</p> <p>(2) Transferred technology and operating manuals utilizing IoT; Continued study sessions</p> <p>(3) Promoted what-if study as planned</p> <p>(4) Promoted detailed investigations into in-house accidents and disseminated results and horizontal deployment at all meetings</p> <p>(5) Constructed system for reporting problems, shared event and industrial accident information, and strengthened horizontal deployment of measures; Conducted patrols to discover potential dangers through observation of work</p> <p>(6) Formulated measures against high-risk work as part of on-site construction; Began Hazard Prediction Training for prime contractors; Reviewed newcomer education materials for affiliated companies</p> <hr/>	<p>Achieve zero abnormal events and incidents of work time lost because of accidents</p> <hr/> <p>(1) Attend to comprehensive basic safety activities, and continue to roll out voluntary 5S and Hazard Prediction Training activities</p> <p>(2) Promote transfer of technology</p> <p>(3) Implement risk assessment for instances of unsteadiness and modification, and focus on completing unsteadiness risk assessment</p> <p>(4) Introduce activities to reduce similar work-related accidents, and focus on detailed analysis and the horizontal deployment of accident case studies</p> <p>(5) Ensure safe operations on manufacturing complex premises; prevent similar accidents by sharing accident case study information and through horizontal deployment, and consider measures to reduce risk on premises</p> <p>(6) Strengthen safety construction system for Tosoh companies and for affiliated companies, and focus on the identification of and measures for comprehensive danger sources in on-site construction</p> <hr/>
	Promote earthquake and tsunami countermeasures	<p>(1) Proceeded as planned with seismic measures for high-pressure gas storage tanks, and completed work on 8 of 16 targeted tanks</p> <p>(2) Proceeded as planned with seismic reinforcement of key buildings, and formulated seismic and flooding countermeasures for power rooms</p>	<p>Promote earthquake and tsunami countermeasures</p> <p>(1) Apply seismic measures for high-pressure gas storage tanks, and focus on concrete action to implement seismic response plan, with completion in FY 2021</p> <p>(2) Promote seismic measures for key buildings, and study tsunami countermeasures, applying planned seismic reinforcement construction at the Nanyo Complex, while continuing to study tsunami countermeasures</p>

## RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
<b>Safety and Disaster Prevention and Occupational Safety and Health</b>	<b>Reconstruct security management system</b>	(1) Validated audits through strengthened progress (2) Considered establishing security management system to upgrade working group	Reconstruct security management system (1) Fortify headquarters structure, with the participation of the Environment, Safety & Quality Control Division at headquarters (2) Assure certification requirements are enforced, and focus on enhancing the security management system
	<b>Reduce abnormal events and work time lost at group companies compared with fiscal 2017</b>	Experienced one abnormal event and lost time by 13 employees because of accidents  (1) Held 11 safe environment exchange sessions at 8 companies; Conducted 2 safe environment web conferences; Promoted safety guidance by Japan Industrial Safety & Health Association (JISHA) at 6 companies and through 12 sessions (2) Progressed with seismic diagnosis and restoration plans for key buildings; Established emergency contact system, secured escape routes, investigated securing of disaster prevention equipment, and conducted follow-ups (3) Conducted work audits for 4 companies as planned	Achieve zero abnormal events and incidents of work time lost because of accidents at group companies  (1) Furnish guidance for group companies, and focus on continuing safe environment exchanges (2) Promote earthquake and tsunami countermeasures at group companies, establish emergency contact system to protect lives, secure escape routes and disaster prevention equipment, and ensure the earthquake resistance of key buildings (3) Continue auditing overseas group companies

## RESPONSIBLE CARE

### RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Environmental Conservation	Pursue legal compliance for zero instances of noncompliance with legal or agreed values	Exceeded Air Pollution Control Law control values in one case	Pursue legal compliance for zero instances of noncompliance with legal or agreed values
		<ul style="list-style-type: none"> <li>(1) Exceeded voluntary control values in one case</li> <li>(2) Educated employees on environment and pollution prevention; Reeducated managers about same; Used external instructors for environmental education</li> <li>(3) Confirmed appropriateness of group companies' waste disposal management; Gave direction to maintain continuous management</li> <li>(4) Completed ISO14001:2015 certification at Nanyo Complex in July 2018</li> </ul>	<ul style="list-style-type: none"> <li>(1) Comply with voluntary control values; strengthen oversight of facilities specified by law; promote precautionary measures related to deviations; and conduct reeducation in cases of exceeding control values, including dissemination</li> <li>(2) Complete legal compliance in general, complete legal compliance specifically for other than measurement issues, and promote environmental education and employee competence in environmental issues</li> <li>(3) Ensure the proper treatment of industrial waste, with follow-up at group companies</li> </ul>
	Keep PRTR-designated substance emissions at less than 470 metric tons per year	PRTR-designated substance emissions of 462 metric tons	Reduce PRTR-designated substance emissions 30% against FY 2016 measurements
		Installed and began operation of monochlorobenzene (MCB) reduction equipment as planned	Review PRTR-designated substance emission reduction plan, and promote emission control
	Keep industrial waste disposal at less than 1,000 metric tons per year	Achieved final landfill industrial waste disposal volume of 937 metric tons	Meet final reduction target for industrial waste disposal of less than 1,000 metric tons per year
		Continued to consider recycling landfill industrial waste	Establish technology for reducing and recycling landfill industrial waste in line with Japan Business Federation targets for FY 2021 (1,515 metric tons, or a 30% decrease against FY 2001) and forecast for FY 2019

## RESPONSIBLE CARE

### RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Environmental Conservation	Promote planned disposal of equipment containing PCBs	(1) Formulated plan for disposal of equipment with low concentrations of polychlorinated biphenyls (PCBs) as planned (2) Reconfirmed and implemented disposal of equipment with high concentrations of PCBs as planned	Promote planned disposal of equipment containing PCBs (1) Promote planned disposal of equipment with low concentrations of PCBs (2) Complete disposal of equipment with high concentrations of PCBs by deadline
	Promote biodiversity conservation activities (started during fiscal year)	Participated in the following conferences and meetings: Japan Business Federation's "Japan Business and Biodiversity Partnership" conference Japan Chemical Industry Association (JCIA) and other events, where we promoted marine plastic countermeasures The Japan Plastics Industry Federation (JPIF) conference, where we signed a declaration to resolve the marine plastic issue	Promote biodiversity conservation activities (1) Promote biodiversity conservation activities (2) Look at unique activities in our businesses that consider regional characteristics (3) Formulate biodiversity action policy
Pharmaceutical Quality Assurance	Reduce product complaints to less than 35	Received 50 complaints concerning products, and did not achieve target	Reduce product complaints to less than 35
		(1) Specified the location of foreign matter contamination in the process of implementing countermeasures, including capital investment (2) Continued quality site and risk assessment inspections by quality assurance and manufacturing divisions (3) Performed raw material supplier audits at 47 companies	(1) Reduce product complaints, and focus on preventing recurring complaints originating from identical causes (2) Strengthen cooperation between quality assurance and manufacturing divisions, and continue quality site inspections and communication (3) Strengthen the management of raw material suppliers, including of packing materials, and focus on the planned implementation of raw material supplier audits

RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Pharmaceutical Quality Assurance	Fortify quality assurance system for products from manufacturing contractors	<ul style="list-style-type: none"> <li>(1) Carried out manufacturing contractor quality audits at 25 companies, 19 in Japan and 6 overseas</li> <li>(2) Began review of quality assurance structure at external tank bases and in some cases reconstructed product test result report systems</li> </ul>	<p>Fortify quality assurance system for products from manufacturing contractors</p> <ul style="list-style-type: none"> <li>(1) Conduct quality audits of manufacturing contractors, and focus on using checklist to identify each company's weaknesses, implementing audits and guidance in response</li> <li>(2) Clarify quality assurance system, start operation of reconstructed product test result report systems, and continue to review the quality assurance system at tank bases</li> </ul>
	Confirm quality management system (start by focusing on themes outside of RC activity themes) Implement investigation of quality-related issues internally and at group companies	<ul style="list-style-type: none"> <li>(1) Conducted quality control audits in FY 2018 that detected neither legal violations nor serious impacts on the environment or safety</li> <li>(2) Identified issues regarding group company quality management structures and systems and reported those issues to the respective companies</li> </ul>	<p>Confirm quality management system</p> <ul style="list-style-type: none"> <li>(1) Continue quality management investigations internally and at group companies</li> </ul>
	Fortify quality assurance system for Bioscience Division products	<ul style="list-style-type: none"> <li>(1) Formulated management structure for research reagents and measurement products, and revised related documents</li> <li>(2) Audited diagnostic product manufacturing facilities as planned</li> <li>(3) Audited product design divisions as planned</li> </ul>	<p>Fortify quality assurance system for Bioscience Division products</p> <ul style="list-style-type: none"> <li>(1) Ensure management of quality audits and shipment of research reagents and measurement products, just as with diagnostic products</li> <li>(2) Audit diagnostic product plants</li> <li>(3) Audit product design divisions</li> <li>(4) Respond to revision in QMS ordinance</li> </ul>
	Strengthen quality assurance system for pharmaceutical manufacturing and sales operations	<ul style="list-style-type: none"> <li>(1) Audited manufacturing plant operations as planned</li> </ul>	<p>Strengthen quality assurance system for pharmaceutical manufacturing and sales operations</p> <ul style="list-style-type: none"> <li>(1) Continue audits of pharmaceutical manufacturing sites</li> </ul>

RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Chemical and Product Safety	Respond appropriately to chemical substance laws and regulations in Japan and overseas	<p>(1) Responded to revisions in the Poisonous and Deleterious Substances Control Law, Japan's Chemical Substances Control Law, Act on Registration and Evaluation, etc., of Chemical Substances in Korea (K-REACH); Completed the registration of substances for EU REACH, and managed quantity and registration renewal</p> <p>(2) Responded to GHS in Japan and overseas</p>	<p>Reduce instances of serious noncompliance to zero in response to chemical substance laws and regulations in Japan and overseas</p> <p>(1) Observe legal obligations Conduct risk assessment of chemical substances and handle SDS and labeling according to Poisonous and Deleterious Substances Control Law</p>
	Conduct education on chemical substance laws	<p>(1) Conducted explanatory session on revised K-REACH as planned</p> <p>(2) Prepared self-study materials for domestic and overseas GHS and for SDS methods as planned</p> <p>(3) Conducted explanatory session on Japan's Chemical Substances Control Law as planned</p>	<p>(2) Handle notification and application Apply for new chemical substances, notify manufacturing, observe export volume under Chemical Substances Control Law and Industrial Health and Safety Act, and respond to overseas laws and regulations when an in-house response is required for the protection of trade secrets, etc.</p>
	Construct database and improve functionality of chemical substance management system	<p>Captured all product data and started operation of database for chemical substance management system</p>	<p>(3) Inform Provide product information to users, including chemical substances contained, hazard and toxicity information, etc.</p>

## RESPONSIBLE CARE

### RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Logistics Safety	Reduce logistics incidents and complaints to less than 50 ppm	<p>Incurred incidence rate of 116 ppm, and did not achieve target</p> <hr/> <p>Conducted the horizontal deployment of logistics incidents and complaints and undertook initiatives to prevent recurrence through the Logistics RC Promotion Committee, and launched incident reporting system in April 2018</p>	<p>Reduce logistics incidents and complaints to less than 50 ppm</p> <hr/> <p>Follow up by Tosoh and Tosoh Logistics to confirm effectiveness</p> <p>Analyze incident trends, and prevent incidents utilizing incident reporting system, including incorrect shipments and, in particular, equipment damage</p> <p>Consider structural measures for equipment damage</p> <p>Ensure thorough compliance with rules by contractors by strengthening guidance</p> <p>Promote company-operated transport for route-transported products</p>
	Reduce small cargo transport complaints to less than 100 ppm	<p>Incurred incidence rate of 60 ppm, and achieved target</p> <hr/> <p>Shifted to company-operated transport for products transported via established routes</p> <p>Began sharing accident case study information with route operators (terminal)</p>	<p>Achieve reduction of logistics incidents and complaints to less than 50 ppm by continuing to control incidents</p>
	Aim for zero major accidents	<p>Recorded one major accident, and did not achieve target</p> <hr/> <p>Conducted bridge resource management (BRM) training for 17 vessels</p> <p>Conducted Hazard Prediction Training based on the 4-Round Method</p>	<p>Aim for zero major accidents</p> <hr/> <p>Continue BRM training for crews on regular chartered vessels</p> <p>Continue support for Tosoh Logistics' reconstruction of safety culture</p>

## RESPONSIBLE CARE

### RC Activities

		Fiscal 2019 Results	Fiscal 2020 Goals
Logistics Safety	Ensure safety for contract work performed at Yokkaichi and Nanyo Complexes	Emphasized safety and disaster prevention and occupational safety and health as noted in (5) under "Achieve zero abnormal events and incidents of work time lost because of accidents" (Tosoh)	Ensure logistics safety Investigate and consider improvement measures for high-risk customer cargo handling duties
Public Dialogue	Promote risk communication	Scheduled media training for 2019	Promote risk communication, and continue media training
	Promote cooperation with local community	Engaged in dialogue with communities, including exchanges with residents' associations, and in factory tours as planned, such as the JCIA Eastern Yamaguchi district community dialogue (Nanyo); the Kasumigaura Public Disaster Prevention Council; the JCIA Yokkaichi district community dialogue; and more	Promote cooperation with local community through community dialogue, factory tours, exchanges with residents' associations



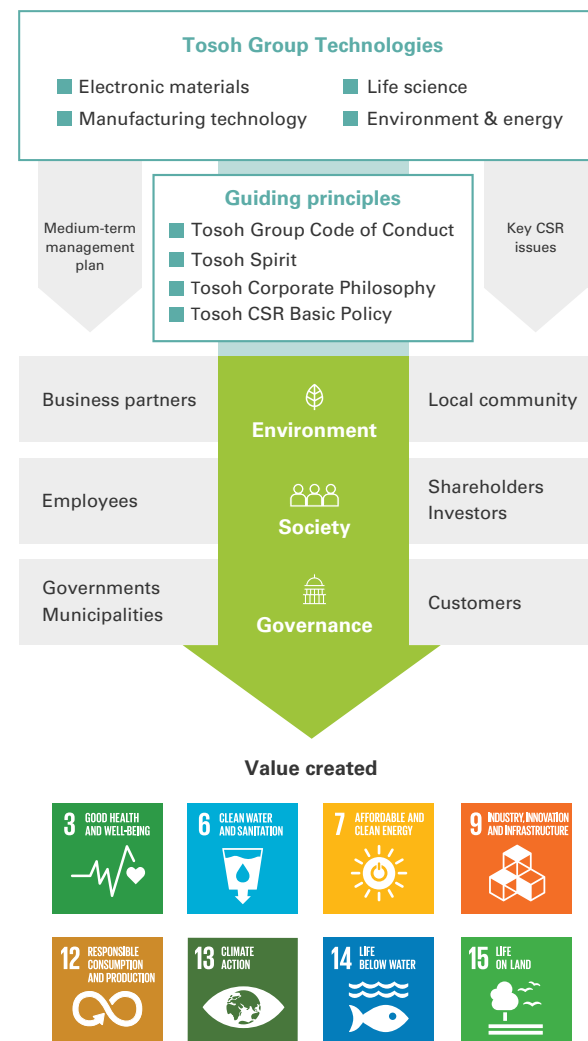
## Value Creation

Tosoh endeavors to provide unprecedented value and to contribute to the resolution of societal issues while sustaining its growth. Through growth, Tosoh aims to further its corporate value.

Tosoh believes that its multifaceted contributions to society through its business activities are of preeminent importance and the manifestation of its corporate philosophy: “Contribute to bettering society through the chemistry of innovation.”

In September 2015, the United Nations (UN) adopted 17 Sustainable Development Goals (SDGs) that the UN feels are shared and in need of being attained by humankind by 2030. Tosoh is contributing to achieving the SDGs through its focus in R&D on life sciences, the environment and energy, and electronic materials. The company has positioned 8 of the UN’s 17 SDGs as targets to be achieved in its business activities and has incorporated all 8 into its R&D themes. By developing new and by taking advantage of owned and developed technologies, Tosoh is working to offer unprecedented value through its contributions to fulfilling the SDGs and to resolving the societal issues that are the targets of the SDGs.

Tosoh is also cooperating and using dialogue to build relationships of trust with its stakeholders in its pursuit of its corporate social responsibility (CSR) objectives. In June 2018, the company established a CSR Basic Policy as a guideline for its CSR activities.



## RESPONSIBLE CARE

### Relationships with Stakeholders

Acting on its corporate philosophy and CSR Basic Policy, the Tosoh Group provides value to its stakeholders through its products and services and its environmental, social, and governance (ESG) initiatives.

We are aware that ongoing communication with our stakeholders is an excellent means of gaining and maintaining the trust of society and of sustaining our growth.

Stakeholder	Tosoh's Role	Communication Tools	Communication Opportunities
Shareholders and investors	Disclosing business results, business policies, management strategy, and other information at the right time and as appropriate Building relationships of trust with shareholders and investors Ensuring appropriate return on investment	Annual reports Financial summaries, financial presentations Securities reports Business reports	General meeting of shareholders Financial reports presentation Teleconferences Small meetings Individual interviews Plant tours
Customers	Providing safe, secure, consistent, and high-quality products and service Building relationships of trust with customers Developing products that meet customer needs and improving customer satisfaction	Product pamphlets Safety data sheets (SDS) Help desk	Business activities Quality assurance support Exhibitions User audits Call centers
Local communities	Ensuring safe and secure operations Contributing to community development Building and maintaining relationships of trust with local communities	Pamphlets about the Nanyo and Yokkaichi Complexes and the laboratories	Plant tours Exchange through community events Community dialogues and opportunities to exchange ideas
Municipalities	Complying with laws Disclosing information appropriately and in timely fashion	CSR procurement guidelines	Filings Meetings
Suppliers	Ensuring fair trade		Purchasing activities
Employees	Providing a pleasant and meaningful place to work Improving systems and education to maximize the abilities of employees Ensuring stable lives for employees and their families	Internal newsletters Intranet Consultation and reporting hotlines	Labor-management council Research Business reports (interviews with supervisors) Informal workplace gatherings

# CREATING SHARED VALUE



### CSR Basic Policy

The Tosoh Group has positioned CSR activities at the core of management. We aim to realize our corporate philosophy by sharing and practicing our CSR Basic Policy.

#### Tosoh Group CSR Basic Policy

We share and practice the following policy to realize our corporate philosophy:

##### 1) Contribute to the sustainable development of society through business activities

We aim to enrich our proprietary technologies based on chemistry; work to resolve social issues through collaboration with business partners around the world; and provide innovative, reliable products and services that contribute to people's happiness and well-being.

##### 2) Ensure safe and stable operation

We recognize that ensuring the health and safety of people involved in our business activities and enabling stable operations are the most important issues of management and will work diligently to foster a culture of safety and enhance our safety foundation.

##### 3) Develop and hand down a free and open corporate culture

We seek a vibrant corporate culture that our employees and their families can be proud of, by developing an open and rewarding workplace environment where human rights and diversity are respected.

##### 4) Preserve the global environment

In addition to ensuring the comprehensive management of chemical substances, we continue to minimize the environmental impact of our business activities globally and across the breadth of our value chain.

##### 5) Pursue integrity in corporate activities

We work to be a global corporate group that is trusted by its stakeholders by ensuring thorough compliance, integrity, and transparency in our corporate activities based on dialogue and collaboration.

#### Message from the CSR Director

In 2018, we formulated the Tosoh Group CSR Basic Policy, established a structural framework for promoting CSR, and identified key CSR issues (materiality) to our operations. Our CSR activities involve establishing yearly activity targets and regularly reporting our progress to Tosoh's Board of Directors through the CSR Committee.

In April 2019, we signed the UN Global Compact. I would like to use this opportunity to increase our level of awareness regarding CSR and to further promote initiatives aimed at achieving the Sustainable Development Goals (SDGs) adopted by the United Nations (UN).



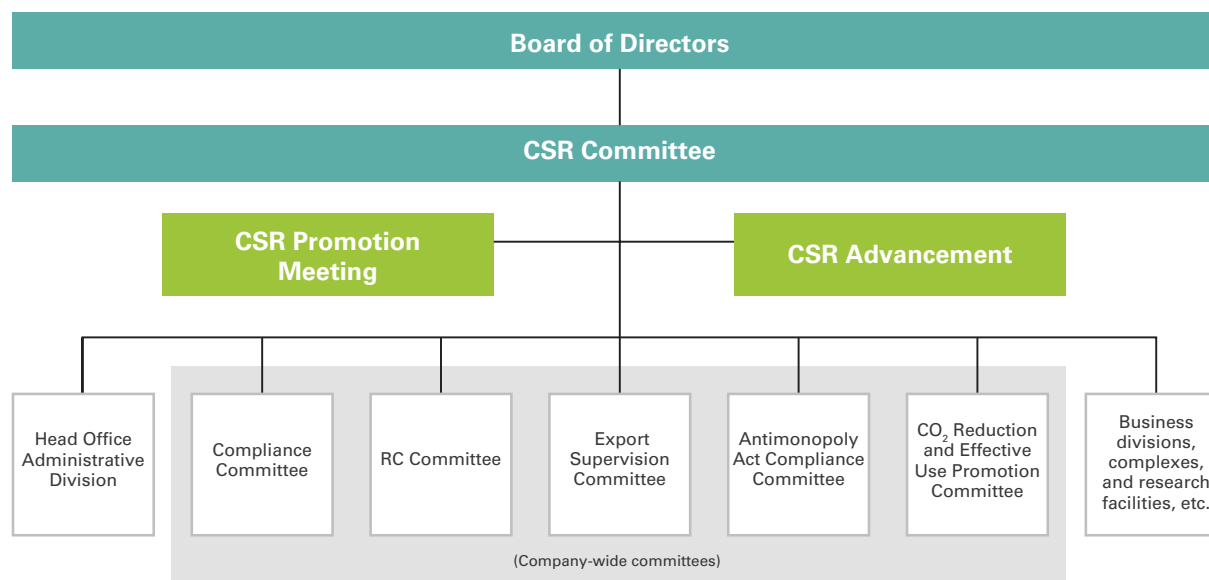
Masayuki Yamada  
Director, Executive Vice President

### CSR Promotion System

The CSR Committee is chaired by the president of Tosoh Corporation and consists of members of the Management Reporting Meeting, of the heads of management departments at Tosoh's headquarters, and of chairpersons of the various company-wide committees. The CSR Committee formulates policies on CSR activities, manages the progress of key CSR issues, and reports this information to the Board of Directors.

Tosoh has also formed a CSR Promotion Meeting and a CSR Advancement Office. The former complements the CSR Committee, while the latter serves as the secretariat for the CSR Committee and the CSR Promotion Meeting as a dedicated CSR department.

In fiscal 2019, the CSR Committee met twice. In August, the committee deliberated on the identification of key CSR issues. In March, it verified progress in achieving targets. The Committee also produced posters to ensure the internal dissemination of the Tosoh Group CSR Basic Policy, formulated in June 2018. The posters were displayed at Tosoh complexes, branches, and group companies and seminars were held to reinforce their message.



## CREATING SHARED VALUE

### Key CSR Issues (Materiality)

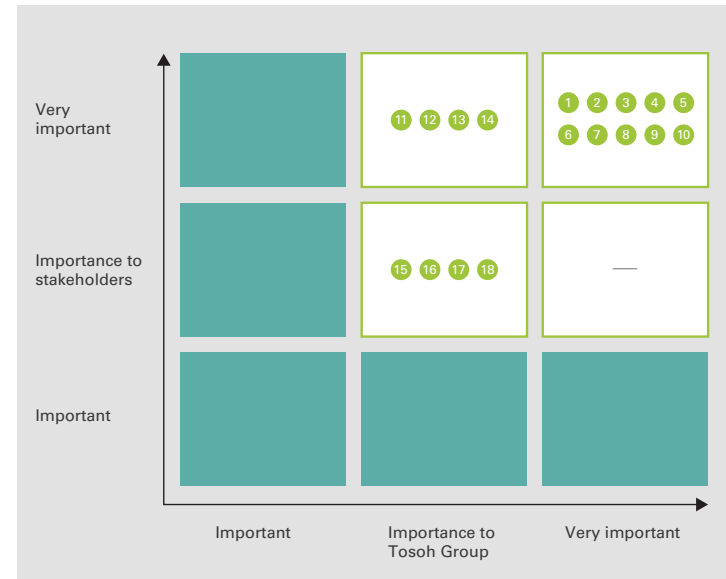
In identifying material issues in CSR, we first identified candidates using the ISO 26000 and GRI standards and trends among other companies.\* We then narrowed down candidate issues using a biaxial assessment matrix, plotting the importance to stakeholders along one axis and the importance to the Tosoh Group along the other.

Based on this assessment, and after further deliberations at the CSR Committee meeting held in August 2018, we identified 18 key issues for achieving sustainable growth for the Tosoh Group and for society.

We have also defined key performance indicators (KPIs) for the issues identified and set medium-term targets for our CSR activities and are working to achieve these targets.

\*ISO 26000 is a globally recognized International Organization for Standardization (ISO) designation for organizational social responsibility. The GRI is an international standard for sustainability issued by the nongovernmental organization (NGO) the Global Reporting Initiative (GRI).

### Materiality Matrix



- |  |                                       |
|--|---------------------------------------|
| 1 Products and Technologies to Resolve Social Issues | 10 Diversity                          |
| 2 Compliance   | 11 Stakeholder Communication          |
| 3 Safe, Stable Operations                            | 12 Personnel Development              |
| 4 Climate Change Responses                           | 13 CSR Supply Chain Management        |
| 5 Quality Management                                 | 14 Employment and Recruitment         |
| 6 Occupational Health and Safety                     | 15 Cybersecurity                      |
| 7 Chemical Substance Management and Product Safety   | 16 Business Continuity Planning (BCP) |
| 8 Environmental Conservation                         | 17 Biodiversity                       |
| 9 Comfortable Workplace                              | 18 Human Rights                       |

## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
<b>1) Products and Technologies to Resolve Social Issues</b>	Development and provision of innovative products and technologies (number of news releases, newspaper articles)	3 or more	3 or more	3 or more	8	Yes
	Announcement of research results through Tosoh research and technology reports (number of posts)	10 or more	10 or more	10 or more	24	Yes
	Implementation of open innovation to resolve social issues (number of news releases)	2 or more	2 or more	2 or more	3	Yes
<b>2) Compliance</b>	Number of major legal violations	Zero	Zero	Zero	Zero	Yes
	Continuation of educational activities for legal compliance and corporate ethics	Further spread awareness of group action policies and compliance through education company-wide or by division			Implemented as planned	Yes
<b>3) Safe, Stable Operations</b>	Number of accidents (e.g., abnormal events)	Zero	Zero	Zero	Internal: 2 Group companies: 1	No
	Number of accidents (major logistics accidents)	Zero	Zero	Zero	1	No

## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
4) Climate Change Responses	Reduction in energy-derived CO <sub>2</sub> emissions	3% decrease in Business as Usual (BAU) emissions volume by FY 2031 (against FY 2006 standard)	<ul style="list-style-type: none"> <li>Reduction target: 6% decrease in BAU emissions volume by FY 2026 (against FY 2014 standard)</li> <li>Applicable from FY 2019</li> </ul>		1.5% decrease from presumed BAU emissions volume in FY 2026	—
	Measurement of basic unit for energy use	1% average annual decrease	1% average annual decrease	1% average annual decrease	0.6% average annual decrease	No
	Measurement of basic unit for energy use in logistics	1% average annual decrease	1% average annual decrease	1% average annual decrease	1.8% average annual increase	No
5) Quality Management	Number of complaints about products manufactured at complexes	35 or fewer	35 or fewer	(after 35 achieved) fewer than preceding fiscal year	50	No
	Incidence rate of logistics complaints and problems	50 ppm or fewer	50 ppm or fewer	(after 50 ppm achieved) fewer than preceding fiscal year	116 ppm	No
	Incidence rate for small-lot transport complaints	100 ppm or fewer	Incorporate into logistics complaint and problem incidence rate		60 ppm	Yes
	Ratio of quality audits conducted for manufacturing contractors	50% or more of companies targeted	50% or more of companies targeted	50% or more of companies targeted	58%	Yes
	Number of quality audits conducted for Tosoh internally or for its domestic consolidated subsidiaries	24 manufacturers targeted	24 manufacturers targeted	24 manufacturers targeted	Implemented as planned	Yes



## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
<b>6) Occupational Health and Safety</b>	Number of employees who lost time because of accidents	Zero	Zero	Zero	Internal: 2 Group companies: 9	No
	Number of affiliated company accidents requiring time off work	Zero	Zero	Zero	Internal: 5 Group companies: 4	No
<b>7) Chemical Substance Management and Product Safety</b>	Number of major nonconformities	Zero	Zero	Zero	Zero	Yes
<b>8) Environmental Conservation</b>	Number of violations of environmental laws and regulations and agreements	Zero	Zero	Zero	Zero	Yes
	Number of deviations from regulatory or agreed values	Zero	Zero	Zero	1	No
	Reduction in PRTR-designated substance emissions	470 metric tons or less (22.2% decrease against FY 2016)	424 metric tons or less (30% decrease against FY 2016)	Maintain FY 2020 emissions volume and establish new targets	462 metric tons	Yes
	Reduction in industrial waste disposal volume	1,000 metric tons or less	1,000 metric tons or less	Decrease of 70% against FY 2001 (1,515 metric tons or less)	937 metric tons	Yes
	Promotion of disposal of polychlorinated biphenyl (PCB)-containing equipment	Complete the disposal of equipment containing high PCB concentrations in FY 2021			Disposal in progress	Yes

## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
<b>9) Comfortable Workplace</b>	Ratio of male employees taking paternity leave	80% or more	90% or more	95% or more	81.7%	Yes
	Ratio of male employees taking childcare leave	7% or more	10% or more	13% or more	14.4%	Yes
	Ratio of all employees taking annual paid leave	76% or more	78% or more	80% or more	75.5%	No
	Ratio of regular employees taking annual paid leave	64% or more	67% or more	70% or more	65.7%	Yes
	Implementation of health-promoting activities	Improve physical fitness, lifestyle, and mental health as three pillars of health-promoting activities, and plan and implement effective activities to achieve all three			Implemented as planned	Yes
<b>10) Diversity</b>	Proportion of female employees in regular positions	15% or more	20% or more	20% or more	14.6%	No
	Number of management-level female employees	11 or more	15 or more	18 or more (FY 2026) 30 or more (3% or more)	10	No
	Ratio of disabled person employment	2.2% or better	2.2% or better	2.2% or better	1.9%	No
	Ratio of retired employee reemployment	80% or more	80% or more	80% or more	87.0%	Yes

## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
<b>11) Stakeholder Communication</b>	Promotion of understanding and timely and appropriate disclosure of information through proactive dialogue with shareholders and investors	<ul style="list-style-type: none"> <li>• Improve IR activities through dialogue with institutional investors and analysts</li> <li>• Strengthen IR activities for retail investors</li> <li>• Upgrade content of disclosure information</li> <li>• Upgrade shareholder relations (SR) activities</li> <li>• Diversify exercising of voting rights (e.g., by smartphone)</li> </ul>			Implemented as planned	Yes
	Coexistence with communities	<ul style="list-style-type: none"> <li>• Conduct factory tours for local residents</li> <li>• Participate in community events</li> <li>• Support community through sports</li> </ul>			Implemented as planned	Yes
<b>12) Personnel Development</b>	Implementation of education and training at all levels, and correct placement of personnel	<ul style="list-style-type: none"> <li>• Conduct education and training meetings</li> <li>• Conduct education and training at all levels</li> </ul>			Implemented as planned	Yes
	Enhancement of language skills through education and training	Conduct overseas language study, training			Implemented as planned	Yes
<b>13) CSR Supply Chain Management</b>	Preparation and performance of CSR procurement	<ul style="list-style-type: none"> <li>• Devise and disclose basic procurement policy</li> <li>• Investigate conditions of users and other companies</li> </ul>	<ul style="list-style-type: none"> <li>• Decide on CSR procurement policy (guidelines), and disclose and explain to suppliers</li> <li>• Review and send self-assessment questions (SAQ)</li> </ul>	<ul style="list-style-type: none"> <li>• Send SAQ</li> <li>• Review CSR investigation (FY 2022 and beyond)</li> </ul>	Implemented as planned	Yes
<b>14) Employment and Recruitment</b>	Maintenance of employment to achieve growth strategy	Attract personnel appropriate to achieving medium-term business plan			Implemented as planned	Yes

## CREATING SHARED VALUE

### Key CSR Issues

Key Issues	Key Performance Indicators (KPI)	Targets			Results	
		FY 2019	FY 2020	FY 2021	FY 2019	Achieved Yes/No
<b>15) Cybersecurity</b>	Number of major cybersecurity incidents (reported externally)	Zero	Zero	Zero	Zero	Yes
<b>16) Business Continuity Planning (BCP)</b>	Consideration of measures for ensuring physical safety in emergencies	<ul style="list-style-type: none"> <li>• Prepare review of types of disaster countermeasure regulations</li> <li>• Provide crisis management measures for staff overseas or traveling on business</li> <li>• Conduct education and training on types of regulations</li> </ul>			Implemented as planned	Yes
	Consideration of facility restoration period				Implemented as planned	Yes
<b>17) Biodiversity</b>	Promotion of biodiversity preservation	Ascertain correlation between business activities and biodiversity	Formulate biodiversity action policy	Promote biodiversity preservation	Implemented as planned	Yes
<b>18) Human Rights</b>	Holding of education sessions for new human rights concept and harassment prevention	<ul style="list-style-type: none"> <li>• Conduct new human rights concept training in stratified manner</li> <li>• Conduct harassment prevention training</li> </ul>			Implemented as planned	Yes

# QUALITY MANAGEMENT

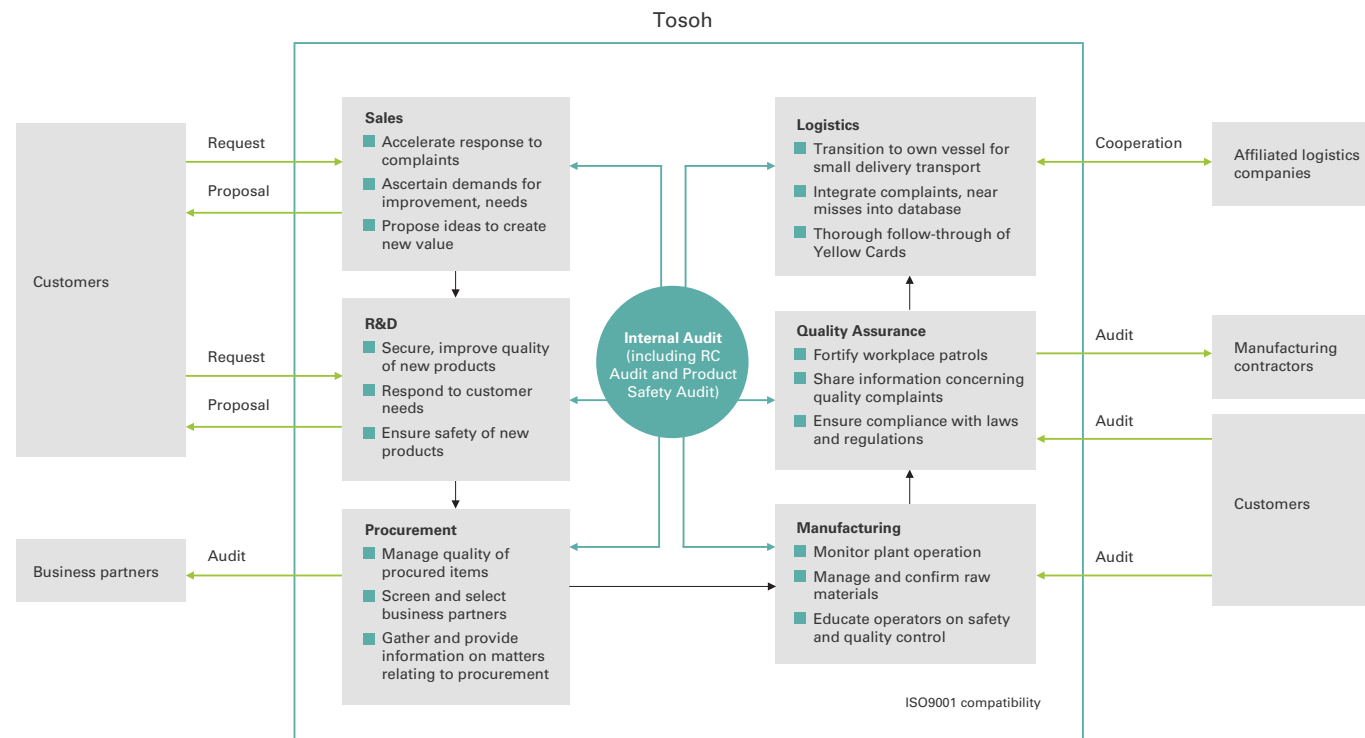


## Improving Quality in Logistics

Tosoh transports its products to customers mainly by truck or ship. Because some of our products contain substances classified under Japan's Fire Service Act and the Poisonous and Deleterious Substances Control Act, their management during transport is critical. We are improving our transport oversight—primarily through our logistics division—to reduce our annual incidence rate for logistics-related accidents, complaints, and problems to 50 ppm or less.\*

We experienced only one logistics-related incident in fiscal 2019, but it was major.

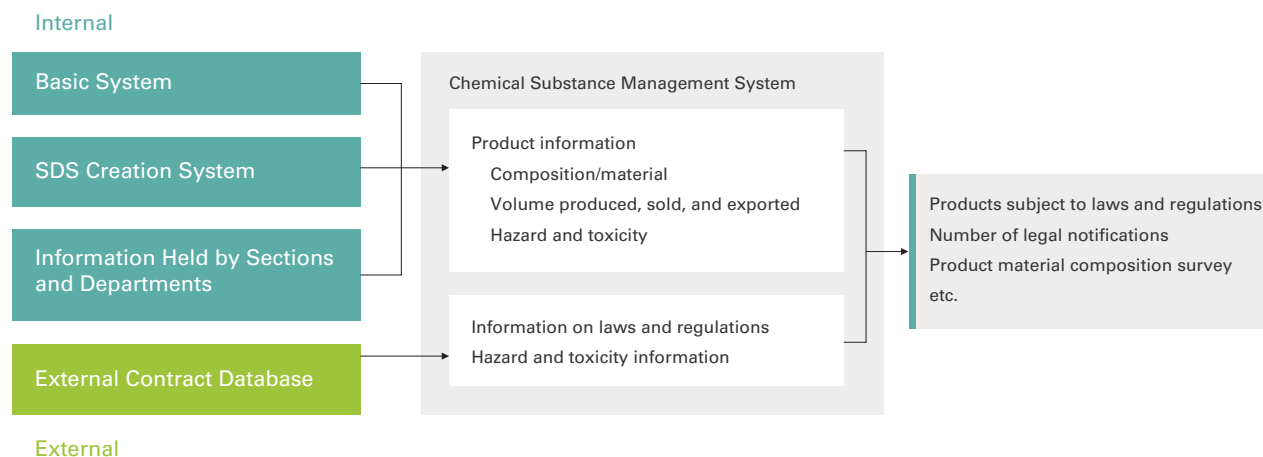
\*The incidence rate = the number of logistics accidents, complaints, and problems / the number of products transported × 1 million.



## Chemical Substance Management System

Tosoh introduced a chemical substance management system in 2016 to centralize its management of chemicals and ensure its compliance with all laws and regulations. As of fiscal 2019, we are a certificate-issuing authority for some of our products, which facilitates our swift response to customer requests to know what chemical substances are in our products.

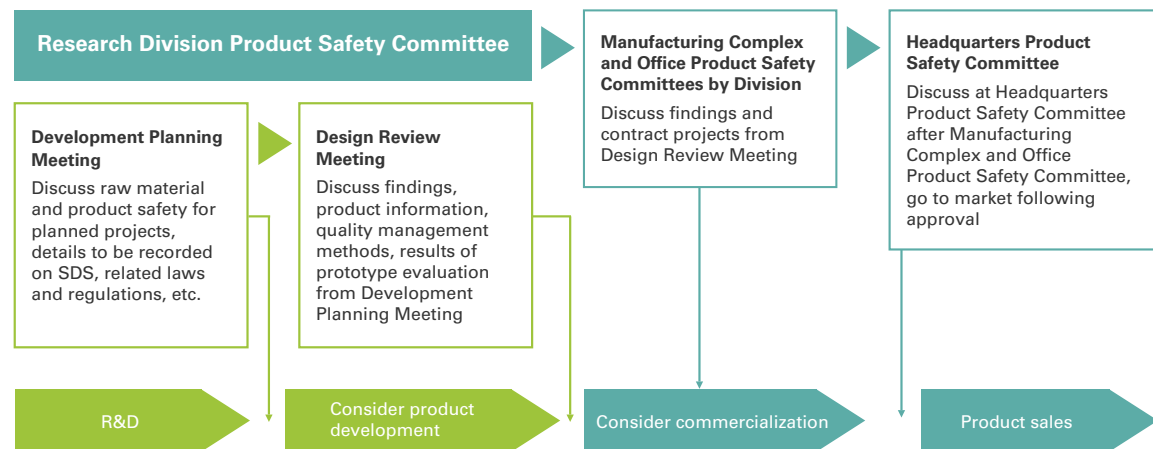
We have, moreover, completed a database of the main chemical substances that we handle.



### Product Safety Audits

Tosoh employees work in accordance with Japan's Product Liability Act to ensure product safety by providing accurate product information.

Our Product Safety Review Committee verifies the safety of raw materials and products and deliberates on legal regulations at each phase of consideration, from R&D to sales. In fiscal 2019, the committee met 40 times.





# IN HARMONY WITH OUR EMPLOYEES



**Company Employee-Related Data**

Tosoh is actively promoting measures to allow its employees to achieve a good work-life balance. We improve our workplaces to allow diverse human resources to find their work meaningful.

	FY 17	FY 18	FY 19
Regular employees	3,337	3,404	3,501
New employees	118	163	215
Employees with foreign citizenship	8	11	10
Number of re-employed workers	282	246	231
Disabled person employment rate <sup>1</sup>	1.83%	2.03%	1.91%
Average age of regular employees <sup>2</sup>	40.3	39.9	39.5
Average years of continuous service <sup>2</sup>	14.8	14.7	14.6
Employee turnover <sup>3</sup>	0.93%	0.59%	0.91%
Employee retention rate (three years after joining)	96.7%	98.7%	97.4%

1. Figures include Tosoh employees seconded to group companies.

2. Figures include employees from group companies seconded to Tosoh but exclude Tosoh employees seconded to group companies.

3. Figures reflect voluntary retirees, excluding mandatory retirees, transfers to group companies, promotions to executive positions, expiry of sick leave period, and punitive dismissal.

## IN HARMONY WITH OUR EMPLOYEES

### Work Style Reform

Japan's recent Act on the Arrangement of Related Acts to Promote Work Style Reform caps overtime work and obliges employers to ensure that workers take at least five days of paid leave annually. Tosoh has briefed management personnel on the act's provisions and disseminated details of the act.

We, meanwhile, have been independently improving our work management systems and reducing our working hours. With the act's introduction, we seek to lower overtime hours and to achieve the act's fiscal 2021 target of having permanent daytime workers take at least 70% of their annual paid holidays.

To this end, we have introduced various schemes. These include a batch paid leave scheme, where employees take three days of paid annual leave at once, and a refreshment support leave scheme, which encourages employees to take at least five consecutive-day vacations each year. The latter excludes holidays, such as Golden Week, in late April to early May; O-Bon, in mid-August; end-of-year celebrations; and New Year's.

FY 19 Results	
Annual total working hours <sup>1</sup>	1,911 hours/person
Annual total overtime working hours <sup>1</sup>	213 hours/person
Rate of use of annual paid leave <sup>2</sup>	75%

1. Data is for nonexecutive level personnel.

2. Data is for employees, and the calculation period is July of the current year through June of the following year.

### Promoting the Active Engagement of Female Employees

Tosoh prioritizes the recruitment and active engagement of women. In the last three years, we have added 65 females to our employee ranks, steadily raising the percentage of female employees in our overall workforce to 9.2% at the end of fiscal 2019.

We have in place an action plan based on Japan's Act on Promotion of Women's Participation and Advancement in the Workplace. Our focus is on increasing our ratio of and broadening our job categories for female employees, including cultivating female managers.

Note: Figures refer to Tosoh Corporation only.

	FY 17	FY 18	FY 19
Number of female employees	295	302	322
Number of female new graduates or mid-career female hires	19	20	26
Number of management-level female employees	7	9	10
Proportion of management-level female employees	0.71%	0.90%	0.98%

### Work-Life Balance

Tosoh is expanding and upgrading its regulations for a workplace culture that helps employees balance work and life outside work, enabling them to contribute to the company and to society.

We have established childcare and family care leave and extended leave systems, including a reduced working hour scheme to facilitate childcare. In fiscal 2019, we transformed our nursing and family care leave systems into paid leave.

We also issued a family care guidebook presenting basic family care knowledge and information on how to follow government regulations and introducing our support systems in an easy-to-understand format. By making this information widely available, to employees engaged in family care and their coworkers not engaged in family care, we aim for an understanding work environment where all employees can work with peace of mind.

We will continue to establish a workplace environment that, while fostering the motivation and satisfaction of all employees, recognizes and values diverse employee lifestyles.

		FY 17	FY 18	FY 19
Child care leave recipients (new) and percentage taken/returned to work	Men	0 Leave taken: — Returned: —	1 Leave taken: 1% Returned: 100%	22 Leave taken: 14% Returned: 100%
	Women	10 Leave taken: 100% Returned: 100%	13 Leave taken: 100% Returned: 100%	13 Leave taken: 100% Returned: 90%
Paternity leave recipients		105 Leave taken: 80%	122 Leave taken: 87%	125 Leave taken: 82%
Employees taking advantage of reduced working hours to facilitate child care		12	8	9
Employees taking family-care leave		0	1	0
Employees taking child care leave		0	1	14

## Rank-Based Training

We provide training to match the needs of employees of all ranks.

Young employees in their first five years at Tosoh gain from training that helps build and reinforce basic skills. First-year employees are given introductory and follow-up training to solidify their approach to becoming working members of society. Second- and third-year employees receive training in logical thinking and in presentation to further their basic skills. And fourth- and fifth-year employees are exposed to beginner-level supervisor training through which they can acquire problem-solving skills.

Mid-level employees who have worked at Tosoh for more than five years use e-learning programs to acquire business skills, such as business strategy and marketing skills. Those about to be promoted to management positions benefit from practical, case-based exercises where they apply the skills they've acquired through e-learning.

Executives are provided with training that gives them an understanding of the roles of employees at each rank. They also acquire the business skills they'll need as future management executives.



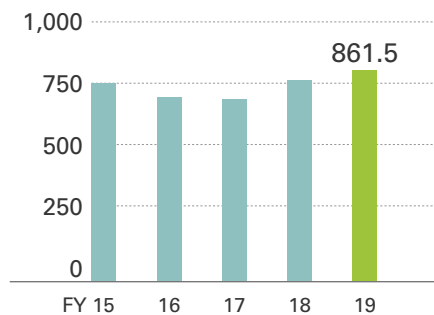
# FINANCIAL HIGHLIGHTS



## FINANCIAL HIGHLIGHTS

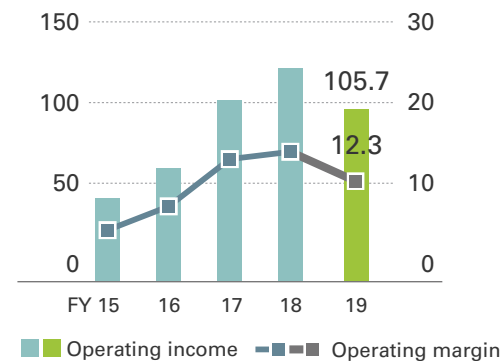
### Net sales

(billions of yen)



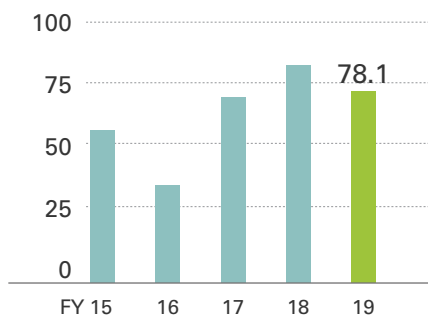
### Operating income/operating margin

(billions of yen)



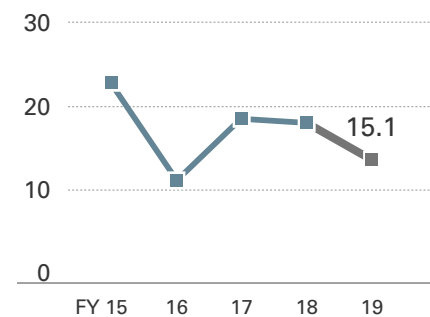
### Profit attributable to owners of the parent company

(billions of yen)

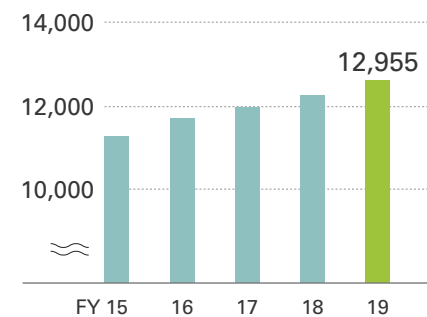


### Return on equity (ROE)

(%)



### Number of employees



## FINANCIAL HIGHLIGHTS

### Petrochemical Group

#### Olefins

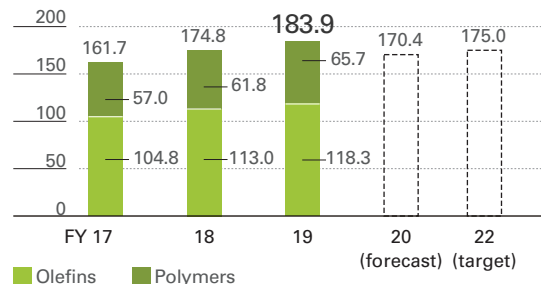
The olefins business centers on the naphtha cracker at the Yokkaichi Complex. Olefins are used as a basic raw material in petrochemical products, such as ethylene and propylene.

#### Polymers

Tosoh supplies polymers to meet a wide range of needs. It also integrates its polyethylene and functional polymer operations to produce an array of distinctive products.

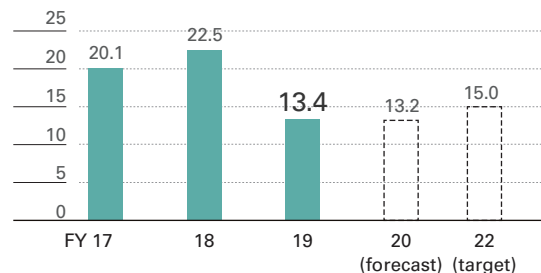
#### Net sales

(billions of yen)



#### Operating income

(billions of yen)



#### Fiscal Year 2019 Results

Petrochemical Group net sales rose ¥9.2 billion, or 5.2%, to ¥183.9 billion (US\$1.6 billion), compared with fiscal 2018. The group's operating income, meanwhile, fell ¥9.1 billion, or 40.5%, to ¥13.4 billion (US\$121 million). This decrease was mainly due to worsening trade conditions.

Shipments of ethylene and polypropylene declined because of lower production volumes. But prices for these products increased in line with increases in the cost of naphtha and other raw materials.

Polyethylene resin prices likewise rose to reflect the increase in naphtha prices. Chloroprene rubber export prices, too, increased, driven by strong demand overseas.

#### Fiscal Year 2020 Forecast

The forecast for Petrochemical Group net sales for fiscal 2020 is ¥170.4 billion, a decline of ¥13.5 billion from fiscal 2019. Prices for olefins and polyethylene resins are projected to drop owing to a decrease in prices for naphtha and other raw materials and worsening market conditions overseas.

Operating income is expected to be ¥13.2 billion, also a decline, albeit slight, compared with fiscal 2019. A projected decline in earnings from cumene due to the worsening of market conditions overseas is the principal reason for this dip. Operating income per net sales, however, is anticipated to increase compared with fiscal 2019.



## FINANCIAL HIGHLIGHTS

### Chlor-alkali Group

#### Chlor-alkali

Our production of chlor-alkali involves the joint manufacturing of caustic soda and chlorine at Asia's largest electrolysis facility.

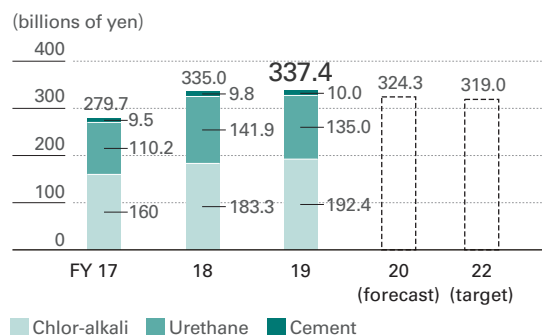
#### Urethanes

We manufacture a wide range of polyurethane raw materials used in automobiles, home electronics and homes in general, and industrial materials.

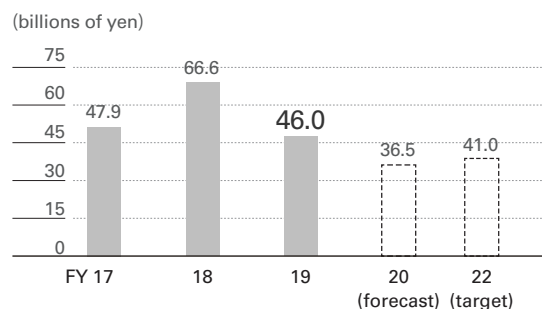
#### Cement

In manufacturing cement, we recycle a variety of materials as raw materials. These include waste plastic, automobile shredder residue (ASR), and construction waste soil.

#### Net sales



#### Operating income



#### Fiscal Year 2019 Results

The Chlor-alkali Group's net sales rose ¥2.4 billion, or 0.7%, to ¥337.4 billion (US\$3.0 billion) in fiscal 2019. Its operating income, however, fell ¥20.6 billion, or 31.0%, to ¥46.0 billion (US\$415 million), primarily because of worsening trade conditions.

Domestic and export shipments of caustic soda were strong. Although market conditions overseas worsened, export product prices decreased in tandem with increased domestic product prices. Vinyl chloride monomer (VCM) export shipments and prices increased, driven by improvements in VCM market conditions overseas. Shipments domestically and abroad of polyvinyl chloride (PVC) resin diminished as a result of lessened production volume, but PVC prices rose because of upward revisions to domestic PVC prices and improvements in overseas PVC markets.

Domestic shipments of cement were strong, but cement exports decreased. Market conditions abroad likewise deteriorated for methylene diphenyl diisocyanate (MDI), such that MDI export prices decreased.

#### Fiscal Year 2020 Forecast

Fiscal 2020 net sales for the Chlor-alkali Group are projected to be ¥324.3 billion, for a decline of ¥13.1 billion compared with fiscal 2019. Sales volumes for urethane raw materials are forecast to increase, but net sales are nonetheless expected to decline, primarily because of worsening market conditions overseas for urethane raw materials and PVC.

Operating income is expected to drop to ¥36.5 billion, down ¥9.5 billion from fiscal 2019. Although shipments of urethane raw materials and PVC are thought to increase, earnings are forecast to decline and fixed costs to increase. This is attributable to deteriorating market conditions overseas, particularly for urethane raw materials.

## FINANCIAL HIGHLIGHTS

### Specialty Group

#### Organic Chemicals

Our core organic chemical products are ethyleneamine, bromines, flame retardants, and various eco-business products.

#### Bioscience

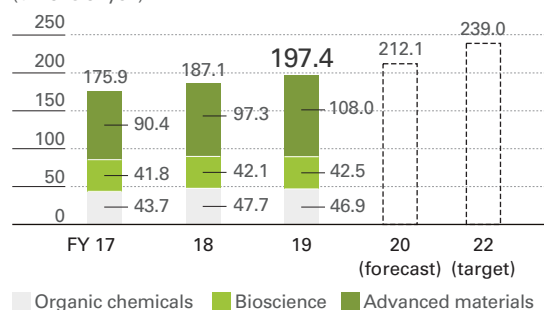
We develop and manufacture liquid chromatography-related products and reagents and in vitro diagnostic instruments.

#### Advanced Materials

Tosoh's development and manufacturing of advanced materials covers an expansive range of products that includes synthetic zeolites, zirconia, and silica glass.

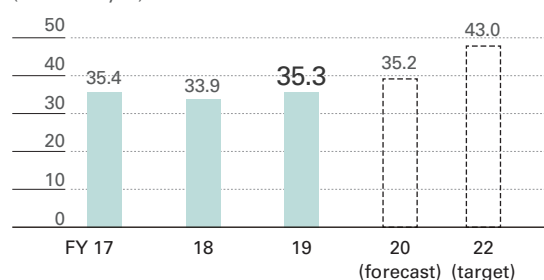
#### Net sales

(billions of yen)



#### Operating income

(billions of yen)



#### Fiscal Year 2019 Results

Net sales by the Specialty Group increased ¥10.3 billion in fiscal 2019, or 5.5%, to ¥197.4 billion (US\$1.8 billion). Operating income increased ¥1.4 billion, or 4.3%, to ¥35.3 billion (US\$318 million).

Ethyleneamine product shipments decreased in line with a decrease in production volume. Among liquid chromatography-related products, there was a decline in shipments of separation media for liquid chromatography, primarily to Europe. Diagnostic-related products saw shipments of reagents throughout Asia increase.

Shipments of high-silica zeolites, primarily for automobile exhaust gas catalysts, increased, as did shipments of zirconia for use in decorative applications. Shipments of silica glass for semiconductor manufacturing equipment likewise rose.

#### Fiscal Year 2020 Forecast

Specialty Group net sales for fiscal 2020 are projected to reach ¥212.1 billion, an increase of ¥14.7 billion over fiscal 2019. The gain is mainly attributable to expected higher sales volumes for silica glass, high-silica zeolites, and bioscience products.

Operating income is expected to be ¥35.2 billion, declining slightly from fiscal 2019 despite projected growth in the sales volumes of silica glass, high-silica zeolites, and ethyleneamines. Declines in prices for ethyleneamines and other products are expected to negatively affect earnings, as are fixed costs, including repairs and maintenance expenses, which are projected to rise in the year ahead.

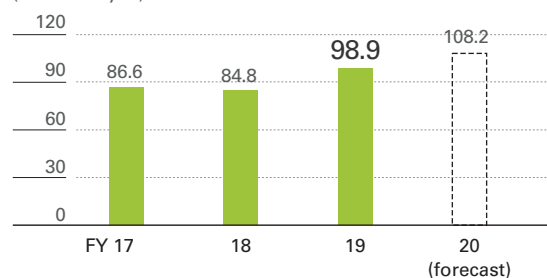
## FINANCIAL HIGHLIGHTS

### Engineering Group

The Engineering Group manufactures and sells water treatment systems and operates construction and repair businesses.

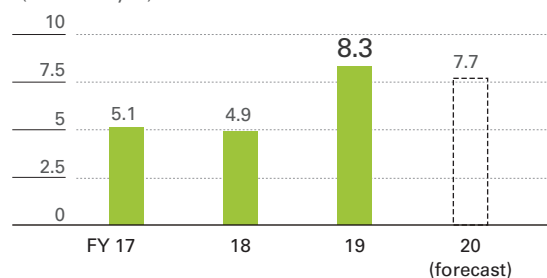
#### Net sales

(billions of yen)



#### Operating income

(billions of yen)



### Fiscal Year 2019 Results

In fiscal 2019, the Engineering Group's net sales increased ¥14.1 billion, or 16.6%, to ¥98.9 billion (US\$892 million). Operating income also increased, ¥3.4 billion, or 70.5%, to ¥8.3 billion (US\$75 million).

The group's water treatment business received domestic and international orders during the year under review for large-scale, semiconductor-related projects. The group also had a strong performance in solutions services, such as maintenance and consumables. This was particularly true of its solutions for the electronics and general industrial sectors, where capital investment and manufacturing activity continued to be robust. In addition, the group's construction subsidiaries increased their sales in fiscal 2019.

### Fiscal Year 2020 Forecast

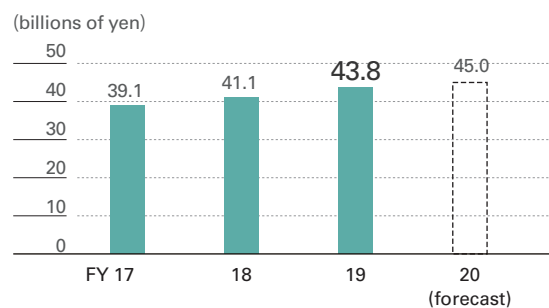
Engineering Group operating income is expected to be ¥7.7 billion in fiscal 2020, a decline of ¥600 million from fiscal 2019. Profits from water treatment systems are projected to increase, but the profitability of the Engineering Group's construction subsidiaries is predicted to decline.

## FINANCIAL HIGHLIGHTS

### Ancillary

Tosoh's ancillary operations encompass a wide range of businesses, including logistics, trading company, analysis and research, and information systems businesses.

#### Net sales



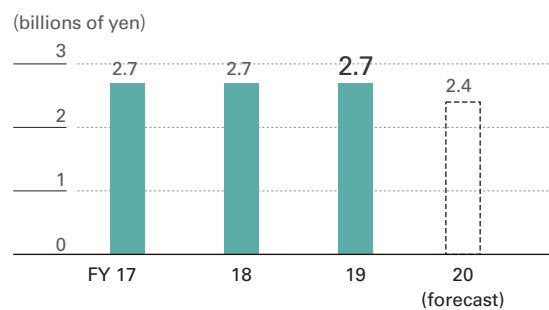
#### Fiscal Year 2019 Results

Ancillary net sales for fiscal 2019 increased ¥2.7 billion, or 6.5%, to ¥43.8 billion (US\$395 million). Operating income also increased, ¥27.0 million, or 1.0%, to ¥2.7 billion (US\$24.3 million). These gains resulted from increased sales by trading companies and other operations.

#### Fiscal Year 2020 Forecast

Ancillary operating income is expected to decline ¥300 million compared with fiscal 2019, to ¥2.4 billion.

#### Operating income





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**TOSOH CORPORATION**