



# **Tosoh Report 2021**

Tosoh Corporation and consolidated subsidiaries  
Fiscal year ended March 31, 2021

**TOSOH CORPORATION**



**Forward-Looking Statements:** *The Tosoh Report contains forward-looking statements about the Tosoh Group's past and present facts as well as plans, strategies, and financial outlook based on information currently available to the company. The forward-looking statements are subject to various risks and uncertainties that may cause actual results and performance to differ materially from those described.*

*Tosoh Corporation's 2021 fiscal year covers the period from April 1, 2020, to March 31, 2021 (some information from April 2021 onward is included).*

## TABLE OF CONTENTS

<b>3</b>	.....	<b>About the Tosoh Group</b>
<b>9</b>	.....	<b>Toward Sustainable Growth</b>
<b>16</b>	.....	<b>Review of Operations</b>
<b>23</b>	.....	<b>Research and Development</b>
<b>25</b>	.....	<b>Intellectual Property</b>
<b>27</b>	.....	<b>Value Creation Practices</b>
<b>31</b>	.....	<b>CSR Management</b>
<b>48</b>	.....	<b>Governance</b>
<b>56</b>	.....	<b>Management and Company Data</b>

## About the Tosoh Group

### History of Tosoh

The history of the Tosoh Group began with the establishment of Toyo Soda Kogyo K.K. which was founded with the vision of creating the ideal large, modern plant in the soda industry. Since then, the company has deepened and broadened its technology based on chemistry and worked to remain true to its original aims and aspirations while expanding its line of business.

We at Tosoh will continue to work toward the realization of our corporate philosophy, “Contribute to society through the chemistry of innovation,” with the aim of promoting people’s well-being, while further deepening our dual management strategy that strengthens both Commodity and Specialty businesses in a well-balanced manner.

#### 1935

Founded to create the ideal large, modern plant

In 1935, the company was established in Tsuno-gun (currently Shunan City), Yamaguchi Prefecture, as Toyo Soda Kogyo K.K., to realize the ideal large, modern plant in the soda industry. Since then, the company has evolved in terms of soda industry products including soda and chloride, as well as inorganic chemicals such as bromine.

#### 1950

Realized long-anticipated entry into the cement business

The combination of the soda—the starting point of the company—and cement businesses was realized through a business alliance with Onoda Cement Co., Ltd. (now Taiheiyo Cement Corporation). This became the company’s second major business.

#### 1960

Entry into the petrochemical business and internationalization

During Japan’s period of rapid economic growth, the company broadened its existing inorganic chemical business centered on soda and cement. It also entered the petrochemical industry with products such as vinyl chloride monomer (VCM), polyethylene, and synthetic rubber. The company expanded by establishing its second base of operations in Yokkaichi City, Mie Prefecture, while the New York representative office was opened as the company’s first overseas base, marking the launch of the company’s international business.

#### 1975

Faced a succession of crises; executed a merger to expand its petrochemical business

The company encountered several problems such as the 1973 oil crisis, but in 1975, it merged with Tekkosha, which was in the process of diversifying its business mainly in the Tohoku region. In the 1980s, the company began to expand rapidly into new businesses.

In 1990, Tosoh merged with Shindai Kyowa Petrochemical Co., Ltd. to become a comprehensive chemical company with an ethylene center at the Kasumi Industrial Complex in Yokkaichi.

#### 1995

Establishment of vinyl chain business

As the Japanese economy entered a recessionary phase, Tosoh carried out structural reforms along with a review of unprofitable businesses and shifted course from its sole focus on chemicals.

In addition to formulating a vinyl chain concept for supplying Asia with vinyl chloride and caustic soda manufactured in Japan, the company strengthened its Specialty businesses and accelerated its global expansion.

#### 2005

Establishment of vinyl isocyanate chain business

By strengthening its relationship with Nippon Polyurethane Industry Co., Ltd., Tosoh expanded the vinyl chain to the vinyl isocyanate chain. This helped enhance Tosoh’s development based on a dual management strategy with the Specialty business as the second axis.

#### 2014

Deepening of dual management strategy

In 2014, Tosoh Corporation merged with Nippon Polyurethane Industry Co., Ltd. Tosoh also accelerated the differentiation of its Specialty business. The company furthered its business based on a dual management strategy by consolidating its position in both the Commodity and Specialty fields in a balanced manner.

### Dual Management Strategy

The Tosoh Group creates new value and contributes to a sustainable society by focusing on both Commodity and Specialty businesses.

## Commodity Business

### *Petrochemical*

#### **Olefins**

The naphtha cracker located at the Yokkaichi Complex within the greater Kasumi Industrial Complex is the key component in Tosoh's Petrochemical business. The company produces ethylene, propylene, and other basic petrochemical raw materials.

#### **Polymers**

Aiming to be a unique and distinctive business, Tosoh offers products that meet a wide range of needs while integrating the fields of polyethylene and functional polymers.

### *Chlor-alkali*

#### **Chlor-alkali**

Tosoh manufactures caustic soda and chlorine, both of which are used in a wide variety of industries, at one of the largest electrolysis facilities in Asia. Caustic soda is used in the manufacture of paper, chemical fiber, and alumina. Chlorine is used as a raw material for PVC resin and detergents.

#### **Urethane**

Polyurethane is utilized in a wide variety of applications, including automobiles, home appliances, residences, and industrial materials. From the perspective of electric vehicles, Tosoh's polyurethane contributes to energy conservation and weight reduction.

#### **Cement**

Tosoh accepts plastic waste, automobile shredder residue, and soil generated from construction sites, both inside and outside the company, and effectively uses them as raw materials in the production of cement, commonly used in infrastructure construction. Tosoh actively supports the development of a recycling-oriented society.

## Specialty Business

### *Specialty Products*

#### **Organic Chemicals**

The company's Specialty business is centered on ethyleneamines, eco business products, and bromine and flame retardants. Our highly original products support people's daily lives while also contribute to reducing society's impact on the environment.

## Bioscience

Tosoh is developing business in the fields of separations and purification and diagnosis based on proprietary technologies. The Group is involved in the development, manufacture, and sale of everything from instruments and reagents to maintenance and customer support.

### **Advanced Materials**

Tosoh offers a broad range of products such as synthetic zeolite, zirconia, and silica glass on a global scale. Our distinctive products feature unique functionality that contribute to the enrichment of society and the protection of the environment.

## The Value That We Provide Society

The Tosoh Group offers innovative products that contribute to the achievement of SDGs and the resolution of social issues.

### **Commodity Products**

#### **Chlor-alkali/Petrochemical**

#### ***Resource-saving plastic that supports infrastructure***

#### ***Polyvinyl chloride plastic***

Unlike other plastics, resource-saving PVC from Taiyo Vinyl Corporation uses salt as its main raw material. Moreover, the manufacturing process generates low carbon dioxide (CO<sub>2</sub>) emissions, making it extra eco-friendly.

#### ***Insulating material that reduces power consumption and enhances convenience***

#### ***Rigid polyurethane foam***

Tosoh's rigid polyurethane foam is used as insulation for construction and refrigeration. It reduces energy consumption by improving the efficiency of residential heating and cooling systems and refrigerators.

#### ***Raw material that effectively uses recycled resources***

#### ***Cement***

Tosoh accepts waste generated both internally and externally and effectively recycles it for use in the production of cement and fuel.

The SDGs (Sustainable Development Goals), adopted by the United Nations in 2015, are international development goals intended to be achieved by 2030 and are universal goals that apply to all countries. The Tosoh Group is making every effort to achieve the SDGs through its business activities.

***Material that contributes to people's health and medical care***

***CR (chloroprene rubber)***

Utilizing technology developed over many years, our CR is a high-quality material for manufacturing medical gloves and other products; it is durable and suitable for long-term use.

***Material that supports the development of renewable energy***

***Solar cell encapsulant EVA (ethylene vinyl acetate)***

Tosoh's photovoltaic cell encapsulant EVA is a film that serves a crucial role in protecting and sealing solar cells. The material helps promote forms of renewable energy with low carbon footprint.

***High-performance resin that supports improved fuel efficiency***

***Polyphenylene sulfide resin***

Tosoh's high-performance polyphenylene sulfide resin is lightweight and features excellent heat and chemical resistance and dimensional stability. By reducing automobile weight, it improves fuel efficiency which is vital to the adoption and proliferation of electric vehicles. Lighter vehicles contribute greatly to reductions in energy consumption and CO2 emissions.

**Specialty**

**Specialty Products**

***High-performance gas that contributes to the prevention of global warming***

***High-performance fluorochemicals***

Tosoh Finechem Corporation's high-performance, nonflammable gas contains no ozone-depleting substances and is attracting attention as an alternative to chlorofluorocarbons (CFCs) and halons. It is expected to serve a broad range of applications such as an etching and fire-extinguishing agent, in the manufacture of semiconductors, and as a refrigerant for refrigerators and air conditioners.

***Chemicals that are better for people's lives and the environment***

***Heavy metal treatment agents***

Tosoh's chelating agents render harmful heavy metals contained in waste incineration ash and wastewater insoluble. They serve to meet an increasing need for human- and environment-friendly agents in the treatment of industrial waste, wastewater, and contaminated soil.

***Analyzers and reagents that contribute to health and medical care***

***Automated immunoassay analyzers and reagents***

Tosoh's fully automated immunoassay (AIA) analyzers provide vital support to health and medical care through high-speed, high-sensitivity testing for various tumors, endocrine, heart, and allergy-related issues.

***Zeolite that supports environmental protection***

***High-silica zeolite***

As regulations for automotive exhaust gas become increasingly strict around the world, Tosoh's high-performance high-silica zeolite (HSZ®) supports environmental protection by significantly reducing exhaust pollution.

***Glass that makes a vital contribution to the information society***

***Silica glass***

Our high-purity, high-quality, high-performance silica glass underpins the cutting-edge electronics industry and provides vital support to the information society. It is essential to semiconductor and liquid crystal manufacturing equipment used in artificial intelligence (AI) and information and communications technology.

***Material that contributes to people's health and society***

***Zirconia***

Tosoh's zirconia is an advanced ceramic product featuring high strength and durability. The excellent color tone, strength, and transparency make it ideal for use in crowns and bridges, thereby contributing to personal health.

## A Network That Connects the World

The Tosoh Group operates production, sales, and research bases worldwide, including the Nanyo and Yokkaichi Complexes, and has established a system that meets a wide range of needs in the global market.

### America – 9 companies

Tosoh has established a strong presence in the field of high-value-added Specialty products while actively gathering information on new technologies and businesses from universities and venture companies.

### Europe – 9 companies

Tosoh provides quality products and services to the diverse and constantly changing markets of Europe, the Middle East, and Africa.

### Asia – 29 companies

In the fast-growing Asian market, Tosoh develops and provides a steady supply of products that meet regional and local needs, including PVC-related products for which demand is increasing.

### Japan – 59 companies

The products and services offered by our reliable system have earned us trust not only in Japan but also around the world. Our advanced technologies enable us to maintain our status as a global leader.

## Nanyo Complex

### *Tosoh's inaugural manufacturing base focused on Asia*

One of the biggest individual plants in Japan, the Nanyo Complex is Tosoh's single-largest production base. With a power generation capacity equivalent to that of an electric power company and port facilities that can accommodate large vessels, it has consistently supported Tosoh's core business since its establishment. The complex makes effective use of recyclable resources, boasting Japan's lone bromine recycling facility, and accepting external waste at its bromine facility and cement plant.

## Yokkaichi Complex

### *Major petrochemical business base located in the center of Japan*

Tosoh, a key player in the petrochemical field, operates a comprehensive petrochemical business featuring products ranging from raw materials like ethylene to polyethylene and other derivatives. To strengthen our business foundation, in recent years we have worked to further develop our Specialty business in addition to our mainstay Petrochemical and Chlor-alkali businesses.

## Financial and Nonfinancial Highlights

### Net sales

In fiscal 2021, net sales decreased by ¥53.2 billion from the previous year due to a decline in selling prices, caused by a fall in prices of fuels and raw materials such as naphtha, and overseas market conditions.

### Operating income/operating income to net sales ratio

In fiscal 2021, trade conditions improved as the impact of lower prices for naphtha and other raw materials and fuels exceeded the impact of lower selling prices, resulting in a ¥6.2 billion increase in profit compared to the previous year.

### Net profit attributable to owners of the parent company/Capital adequacy ratio

Net profit attributable to owners of the parent company for fiscal 2021 increased by ¥7.7 billion over the previous fiscal year, and the equity ratio as of the end of fiscal 2021 was 62.6%.

### Return on assets (ROA)/Return on equity (ROE)/Earnings per share (EPS)

Due to improvements in various financial conditions, ROA and ROE increased by 0.5 and 0.7 percentage points, respectively, and EPS increased by ¥26.9 compared with the previous fiscal year.

NOTE: Fiscal year 2018 takes into account the consolidation of common shares at the ratio of one share for two shares, executed on October 1, 2017.

### Year-end interest-bearing debt/Net debt to equity ratio

Interest-bearing debt at the end of the fiscal year increased by ¥30.7 billion compared with the end of the previous fiscal year due to efforts to ensure the availability of liquidity during the



COVID-19 pandemic. The net debt to equity ratio decreased by 0.03 percentage points compared with the end of the previous fiscal year.

#### **Dividend per share/Dividend payout ratio**

Under the current medium-term business plan, Tosoh has set a dividend payout ratio of approximately 30%, and the annual dividend for fiscal 2021 is set at ¥60 per share, resulting in a dividend payout ratio of 30.3%.

NOTE: Fiscal 2018 takes into account the reverse stock split of two common shares into one common share, which took place on October 1, 2017.

#### **Greenhouse gas emissions/(Scope 1 and 2)/Emission volume (basic unit)**

GHG emissions for Tosoh Corporation in fiscal year 2021 decreased by 153 kilotons-CO<sub>2</sub>e compared with fiscal year 2020 due to investment in energy-saving facilities, despite reduced production caused by the COVID-19 pandemic.

#### **Final disposal of industrial waste by landfill (basic unit)/Final disposal rate of industrial waste by landfill (basic unit)**

The final landfill industrial waste disposal volume was 923 tons, the same as the previous year. The ratio of the amount of landfill industrial waste for the past five years to the amount of industrial waste generated was less than 0.5%.

#### **PRTR-applicable substance emission volume (basic unit) \***

PRTR-applicable substance emissions increased by 26 tons compared with fiscal year 2020 due to scheduled repairs of treatment facilities.

\* PRTR = Pollutant release and transfer register

#### **Number of management-level female employees (basic unit)/Proportion of management-level female employees (basic unit)**

The proportion of management-level female employees increased by 0.2 percentage points compared with fiscal year 2020. Tosoh is working to increase the number of female executives in management positions to at least 3% (30 or more) by the end of fiscal year 2028.

#### **Number of days of annual paid leave taken (basic unit)/Rate of annual paid leave taken (basic unit)**

With the aim of creating a comfortable workplace and a balanced work style, Tosoh is endeavoring to raise the rate of annual paid leave taken to 80% from fiscal 2021.

#### **Composition of Board of Directors/Proportion of external directors**

In June 2020, Tosoh increased the number of external directors from two to four (including one female director) to ensure an appropriate governance system with a neutral, objective supervisory function.

### **Recognition**

#### **Recognition of Bromine-Related Historical Materials as Chemical Heritage**

Historical materials related to the production of bromine at Tosoh Corporation, Japan's largest bromine manufacturer, were given recognition under The Chemical Society of Japan's 12<sup>th</sup> Chemical Heritage. The bromine-related items were cited for tracing the history of bromine production in resource-poor Japan to the present day.

Bamboo filling material for bromine separation and concentration equipment, an album depicting the repair of the bromine production facility, a porcelain bromine container, and a drawing of the porcelain bromine container were designated. A bromine distillation column and a porcelain bromine container owned by Tosoh Group company Manac Incorporated were also acknowledged under Chemical Heritage No. 056, "Bromine Production Facilities and Porcelain Containers Using Bittern and Seawater as Raw Materials."

#### **ESG Investment Indexes**

Tosoh Corporation has been included in the following environment, social, and governance (ESG) investment indexes as of the end of September 2021.

- FTSE4Good Index Series
- FTSE Blossom Japan Index
- S&P/JPX Carbon Efficient Index
- SOMPO Sustainability Index

#### **Major External Recognition**

- CDP2020 "Climate Change A-" and "Water Security B-" assessments
- Silver medal in EcoVadis' sustainability survey
- Recognized as a Certified Health & Productivity Management Outstanding Organization for 2021
- Kurumin certification



## **Awards**

### **53rd Ichimura Prize in Industry for Distinguished Achievement**

Tosoh Corporation is the recipient of the 53rd Ichimura Prize in Industry for Distinguished Achievement for its zirconia-related business, awarded by the Ichimura Foundation for New Technology. The theme of the award was "Commercialization and New Development of Microstructure-Controlled Zirconia (MCZ) Using Innovative Technologies."

The Ichimura Prize in Industry is a long-standing and highly respected award that honors researchers and engineers who have made outstanding achievements in promoting science and technology and the development of industry in Japan, and who have made significant contributions to the advancement of industrial fields. Tosoh's development of zirconia technologies to date and its potential to further develop and commercialize these technologies contributed to the company garnering the prize.

### **Japanese Proteomics Society Research and Development Achievement Award**

Tosoh was presented the 2020 Research and Development Achievement Award by the Japanese Proteomics Society for the first domestic launch of a new tumor marker based on proteome analysis.<sup>1</sup> Tosoh and Yokohama City University have been conducting joint research to identify new diagnostic markers through proteome analysis. As a result of this research, Tosoh received approval in June 2020 to manufacture and market the new in vitro diagnostic drug E-TEST "TOSOH" II (TFPI2) for use in ovarian cancer blood tests. The product was released on the market in July 2021.

### **Fire and Disaster Management Commissioner's Award**

The Nanyo Complex Disaster Prevention Center won Japan's Fire and Disaster Management (FDMA) Commissioner's Award in a competition of self-protection disaster prevention organizational skills among petrochemical complexes. The contest was sponsored by the FDMA of Japan's Ministry of Internal Affairs and Communications. Tosoh was awarded the prize for the fifth consecutive year. Thirty-one groups from companies in industrial complexes across Japan participated. All groups demonstrated the results of their daily training, and their skills were evaluated as excellent.

## Toward Sustainable Growth

### President's Message

*We will work together as a group to contribute to the resolution of social issues and aim to sustainably increase our corporate value.*

### Management Policy: Be a Company That Secures Its Own Sustainability and Plays a Vital Role in Society

As expressed in its corporate philosophy, "Contribute to bettering society through the chemistry of innovation," the Tosoh Group aims to enhance its corporate value through the development of businesses that contribute to the resolution of various social issues and continue to be a company that is trusted by all stakeholders as an important member of society.

I believe that the establishment of a solid management foundation is essential to achieving our aim. No matter how much we may wish to contribute to the realization of a sustainable society, if our own management foundation is unstable, we cannot expect the stable development of our business. As a result, we will not be able to gain the trust of our stakeholders, such as customers, shareholders, and employees. In this regard, I am convinced that the first and most important mission of a company's management is to strengthen its own sustainability by securing solid profitability.

The chemical industry is a sector that requires large-scale capital investment in facilities and equipment. At the same time, earnings are easily influenced by raw material prices and the supply and demand for products. To achieve sustainable growth in light of these business factors, the Group has positioned Commodities (Petrochemical and Chlor-alkali products), for which demand is stable, and Specialties (Specialty products), which feature high added value, as the two principal axes of its business. Dual management under which we strengthen the company in a balanced manner is the basis of our growth strategy. We are steadily transitioning to a business structure that is less susceptible to changes in the business environment by continuing our dual management approach of generating new growth drivers through continuous investment in development in specialty fields while securing cash flow and profits, the foundation of our Commodity business.

### Fiscal Year 2021 Review: Maintaining a Sound Financial Position Despite

#### Challenging Conditions

In fiscal year 2021 (ended March 31, 2021), the spread of the COVID-19 pandemic, which has continued since the end of fiscal year 2020, has severely restricted social and economic activities in many countries, resulting in a rapid decline in demand. While there has been a

gradual recovery in economic activities mainly in developed countries due to progress in vaccination in the second half of this fiscal year, the economic outlook remains uncertain.

Under these circumstances, the Tosoh Group has worked to stabilize and expand earnings through dual management of Commodity and Specialty businesses in the second year of its three-year medium-term business plan. Sales growth, however, remained sluggish in the Commodity business. This was attributable to shrinking demand caused by the effects of the COVID-19 pandemic and softening product prices resulting from the decline in the prices of naphtha and other raw materials and fuels. In our Specialty business, shipments decreased in two pillars of business which are diagnostic products and high-silica zeolite, the latter which is mainly for use in automobile exhaust cleaning catalysts. These conditions resulted in net sales for fiscal 2021 decreasing by ¥53.2 billion from the previous fiscal year to ¥732.9 billion (down 6.8% from fiscal year 2020).

Regarding profits, lower raw material prices enabled us to control variable costs, while overseas market prices of major products in the Chlor-alkali business increased in the second half of the fiscal year. As a result, operating income increased by 7.5% to ¥87.8 billion, ordinary income by 10.7% to ¥95.1 billion, and net income attributable to owners of the parent company by 13.9% to ¥63.3 billion. The operating income ratio improved to 12.0%, up from 10.4% in the previous fiscal year. And although we did take out loans in fiscal 2021 to prepare for unforeseeable circumstances related to the COVID-19 pandemic, we believe that we have maintained a sound financial position.

### Prospects for Fiscal Year 2022: Responding Quickly and Flexibly to the Changing Business Environment

Fiscal year 2022 (ending March 31, 2022) will be the final year of our medium-term business plan. With the progress of vaccination, the COVID-19 pandemic in many countries appears to be easing to an extent. The economic outlook remains uncertain, however, due to escalating tension between the United States and China, and turmoil in overheated financial markets.

Regarding the business environment surrounding the Group, we must continue to pay attention to raw material and fuel prices and overseas market conditions. These are influenced by various factors, including the status of the COVID-19 pandemic and the global political situation, as well as trends in foreign exchange rates and the status of the global supply chain disrupted by the pandemic. The basic policies we announced during the formulation of the medium-term business plan and the policies regarding investment, research and development (R&D), finance, and shareholder returns will remain essentially unchanged. We intend to implement various measures in line with the policies outlined in our medium-term business plan while monitoring the business environment as noted earlier.

For fiscal year 2022, we forecast net sales of ¥820 billion, operating income of ¥106 billion, ordinary income of ¥109 billion, and net income attributable to owners of the parent company

of ¥71 billion. Although sales and profits will increase compared to fiscal 2021, we will still be short of the numerical targets of ¥890 billion in net sales and ¥110 billion in operating income set in the medium-term business plan. However, with renewed determination, we will continue striving to secure profits through the remainder of the term covered by the plan by responding quickly and flexibly to challenges in the business environment.

### **Medium- to Long-Term Vision and Strategy: Promoting the Creation of Products for a Sustainable Society**

We believe that the SDGs adopted by the UN will be an important guideline for companies as they strive for sustainable growth. Since long before the concept of SDGs was announced, the Tosoh Group has been developing its business with the aim of manufacturing products that are useful to society. The extensive range of products from the Tosoh Group is used in a variety of end products that contribute to people's lives, including social infrastructure and durable consumer goods. In this respect, we are proud that our business activities help promote the realization of a sustainable society.

From a medium- to long-term standpoint, however, we recognize that the demands of society change with the times. To best respond to these demands, we must continue to evolve and create value that is in accordance with the needs of society. With this in mind, the Group has designated Life Science, Environment and Energy, and Electronic Materials as the three priority fields to be fostered, and aims to create new, high value-added products that will drive the next stage of growth.

In each of the three fields, while incorporating SDGs into our R&D themes, we are actively utilizing digital technologies such as AI and materials informatics (MI) to streamline our R&D processes. Furthermore, we are actively engaged in joint industry-academia research with universities and in open collaboration with external research institutions.

In fiscal 2021, these efforts led to the launch of reagents that can detect SARS-CoV-2 and antibodies using specialized equipment developed by Tosoh Group. In addition, we made progress in the development of technologies for the disassembly and reuse of multilayer films. We will continue to expand our open collaboration with outside parties and accelerate the development of next-generation products and new technologies that will contribute to the achievement of the SDGs.

### **Prioritizing Safety to Strengthen Management Foundation**

For a company to achieve sustainable growth, it must promote growth strategies and R&D in each of its businesses. In parallel with this, it must strengthen the foundations that underpin its business activities, such as safety, quality, human resource development, and finance. In

particular, we at Tosoh recognize that safe plant operation is the greatest social responsibility required of a chemical manufacturer.

Based on the underlying premise that safety takes precedence over everything else, the Tosoh Group has continuously invested in renovation and undertaken preventive maintenance over the past several years. These efforts have led to a steady decline in the number of abnormalities caused by manufacturing processes.

For companies in the manufacturing industry, the pursuit of safety is an endless challenge. At Tosoh, we will continue to proactively utilize advanced technologies, such as AI and Internet of Things (IoT)-based driver assistance systems, to prevent problems before they occur. As a company striving to become the safest chemical manufacturer in the world, we aim to be a company that is trusted by everyone in the local community.

### **Addressing the Reduction of Carbon Dioxide, the Most Important Environmental Issue**

In strengthening our management base, we need to focus on nonfinancial activities such as ESG. As a chemical manufacturer, the Tosoh Group places particular emphasis on the environment. At the same time, we recognize that controlling and mitigating the environmental impact of its own business activities is an important responsibility of a company, and as such we have made continuous efforts related to pollution control, waste reduction, and energy conservation over the past several decades.

Carbon dioxide (CO<sub>2</sub>) reduction is currently the most important environmental issue facing the Tosoh Group. Amidst worsening climate change, "decarbonization" is becoming a global buzzword. The Japanese government issued a carbon neutral declaration in 2020. In this context, chemical manufacturers are required to make more thorough efforts to reduce CO<sub>2</sub> emissions than ever before. In November 2019, we announced our endorsement of the recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD), and are now working to develop technologies to reduce CO<sub>2</sub> generated in our business activities while conducting analyses and assessments in line with the framework. One of our major aims is the reduction of CO<sub>2</sub> emissions from in-house thermal power generation.

The Tosoh Group has thermal power generation facilities at its Nanyo and Yokkaichi Complexes to meet the considerable demand for electric power in the manufacture of chemical products. While these thermal in-house power generation facilities are a source of competitiveness in terms of production, they emit CO<sub>2</sub> while they operate, hence the management of these emissions is a major concern. We have already established a CO<sub>2</sub> Reduction and Effective Use Promotion Committee within the company, and this year we set up a CO<sub>2</sub> Reduction and Effective Use Strategy team with full-time staff. In addition to saving energy in the production process and fuel conversion to liquefied natural gas, we are also laying down guidelines and specific goals to effectively utilize CO<sub>2</sub> emitted in our operations by separating and recovering it in-house.

I believe that we have a tough road ahead to achieve our goals. But if we can develop technology that enables the effective utilization of CO<sub>2</sub> emissions from coal-fired power generation, it will be a groundbreaking innovation that will attract the attention of the whole world. We believe that this is the best way for us to demonstrate our true prowess as a specialist in chemistry, which is unmatched by others in the industry. At the same time, we will continue to take on the challenge of creating innovation by pooling the collective wisdom and technologies that the Tosoh Group has cultivated.

### **Maintaining Focus on Society and Corporate Governance**

We are developing a wide range of social initiatives, including respect for human rights, human resource development, promotion of diversity, and creating comfortable workplaces. The Group supports the aims of the United Nations (UN) Universal Declaration of Human Rights, the International Labour Organization (ILO) Declaration on Fundamental Principles and Rights at Work, and the UN Guiding Principles on Business and Human Rights. In April 2019, we became a signatory to the UN Global Compact and are presently promoting activities based on the Compact's 10 principles in the four areas of human rights, labor, environment, and anti-corruption.

The Tosoh Group is also focusing on securing and developing human resources that will support sustainable growth. We are working to foster a work environment where all employees can fully develop their abilities and attain growth while maintaining high levels of motivation. In addition, we are in the process of reforming the way we work in order to improve work-life balance and productivity. Although there are still many issues to be addressed, we are gradually gaining recognition from outside the company. In fiscal 2021, we were recognized by the Ministry of Economy, Trade and Industry as a Certified Health & Productivity Management Outstanding Organization in the large enterprise category.

Following the establishment of the Nomination and Compensation Advisory Committee in 2019, in 2020 we increased the number of external directors from two to four, including one female director. The purpose of the increase was to ensure transparency in management and to enable the board of directors to exercise more timely and appropriate checking and monitoring. As a result, the proportion of external directors on the board of directors has risen to 44%. In addition, the Board of Auditors appointed three external auditors in 2021, one of whom will be a full-time auditor, to further strengthen the supervisory function over the directors in the execution of their duties.

With regard to compliance, we aim to be a sound corporate group that earns the trust of society by not only complying with laws and regulations in all countries where we carry out business, but also by thoroughly operating internal control systems, establishing a compliance consultation service, and strengthening and expanding compliance education.

## **The Ten Principles of the UN Global Compact**

### **Human Rights**

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and

Principle 2: make sure that they are not complicit in human rights abuses.

### **Labor**

Principle 3: Businesses should uphold freedom of association and effective recognition of the right to collective bargaining;

Principle 4: the elimination of all forms of forced and compulsory labor;

Principle 5: the effective abolition of child labor; and

Principle 6: the elimination of discrimination in respect of employment and occupation.

### **Environment**

Principle 7: Businesses should support a precautionary approach to environmental challenges;

Principle 8: undertake initiatives to promote greater environmental responsibility; and

Principle 9: encourage the development and dissemination of environment-friendly technologies.

### **Anti-corruption**

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

## **To Our Stakeholders: Enhancing Corporate Value Guided by the "Tosoh Spirit"**

As I mentioned earlier, I believe that a company cannot contribute to the sustainability of society unless it first ensures its own sustainability.

When the bubble economy in Japan collapsed about 30 years ago, our company fell into a very difficult situation. We were forced to carry out large-scale restructuring that entailed a great deal of pain, and to withdraw from many of the business areas we had planned to enter. We managed to emerge from these trying circumstances by sowing the seeds for a new business pillar in the field of Specialty products, making them sprout, and nurturing them over decades. Today, our Specialty products account for about 50% of our operating income.

In the process, we faced a host of challenges, including the 2008 financial crisis, but the Group's planned reconfiguration of its business portfolio was successfully carried out. Over the past few years, our financial base has finally stabilized, allowing us to make large-scale growth investments.



As the COVID-19 pandemic has shown, unpredictable crises may occur in the future. The five tenets of the Tosoh Spirit are our guiding principles for overcoming such crises as a team and developing our own sustainable future. I hope that future generations will carry on from the lessons I have learned from my experience during harsh times while bearing in mind the importance of maintaining a constant sense of purpose in the face of crisis and the passion to keep on challenging oneself without ever losing hope.

All of us at the Tosoh Group will continue to work together to enhance our corporate value, with all our executives and employees maintaining both a sense of urgency and a sense of ownership. I would like to ask for the continued invaluable understanding and support of all our stakeholders.

**Toshinori Yamamoto**  
President

### Message from the Head of Finance

*“Based on a strong financial foundation, we will promote financial strategies with a view to medium- to long-term growth.”*

### Continuous Business Portfolio Transformation Plan

Since its establishment in 1935, Tosoh has contributed to society through the business of chemistry and has continually aimed to be a manufacturer with a strong and distinctive presence in the industry. However, the road to the present has not always been smooth since we faced a variety of crises and challenges, including the turmoil of the Pacific War, oil shocks, the bursting of the bubble economy, and the 2008 global financial crisis.

In particular, the collapse of the bubble economy in the early 1990s caused a major decline in the Group’s performance. Our interest-bearing debts increased and our financial structure was severely damaged. We faced a crisis of corporate survival.

To extricate the Group from these adverse circumstances, we reformed both our business structure and portfolio in order to increase profitability. These efforts resulted in a significant change in the Group’s current earnings and financial position, and with stabilized earnings and further reductions in interest-bearing debt, we succeeded in strengthening our financial foundation.

Through the continued implementation of dual management that generates new opportunities, we intend to create a business portfolio that is resilient to external factors and capable of

sustainable growth. We will achieve this by securing stable profits in our Commodity business while investing in the high-value-added Specialty business.

### Promote Investment to Enhance Corporate Value

Under the Tosoh Group’s management policy of stabilizing and expanding earnings through dual management, investment decisions are evaluated individually, based on whether they contribute to improving the Group’s corporate value in accordance with the current medium-term business plan. Investment activities are carried out following the policies laid out in the medium-term business plan, with the total amount of capital investment for the three-year period expected to slightly exceed the planned ¥140 billion. With regard to mergers and acquisitions (M&A), we are presently collecting and evaluating information mainly in the bioscience field. Barring a sudden change in the business environment, we expect that the COVID-19 pandemic will not significantly impact our capital investment policy.

As for our financial strategy, we believe that it is important to maintain a strong financial base so that we can continue to pay stable dividends. At the same time, we have to make investment decisions and manage cash in a way that allows us to execute large-scale investments and M&A in a timely manner for the next stage of growth.

I have considerable experience primarily in the finance, accounting, and corporate planning departments, and I would like to continue to promote financial strategies that emphasize investment efficiency while taking business strategies into consideration to enhance corporate value.

### Always Be Prepared for Unexpected Risks

The current COVID-19 pandemic is having a serious impact on the global economy and is causing the business environment for the Tosoh Group to be less predictable. During my time with the company, we faced a number of unexpected situations, including the collapse of the bubble economy and the 2008 global financial crisis.

Risks surrounding our finances include investment risks from corporate acquisitions and capital alliances, fluctuations in foreign exchange and interest rates, overseas business activities, credit management of business partners, effects of inventory valuation, impairment of fixed assets, and valuation of securities. For that reason, we always strive to be prepared for unexpected risks and be ready to respond to them effectively.

At the beginning of fiscal 2021, when we were first confronted with the pandemic, we borrowed over ¥60 billion to prepare for the worsening of the financial environment and to increase our cash reserves. Fortunately, there were no major disruptions, and with the subsequent recovery of the external economic environment, we were able to maintain a sound financial position. As

of the end of fiscal year 2021, we posted an equity ratio of 62.6%, an interest-bearing debt of ¥126.5 billion, cash and deposits of ¥149.2 billion, and a net debt to equity ratio of -0.04x.

We will continue to prepare for all eventualities while endeavoring to stabilize and expand our earnings through dual management and maintain a strong financial base. As a member of Tosoh's management team, which aims to become a corporate group trusted by all stakeholders, I will do my utmost to contribute to the enhancement of corporate value over the medium to long term while bearing in mind the five tenets of the Tosoh Spirit.

I hope you are as excited as I am about the future of the Tosoh Group.

**Toru Adachi**  
**Executive Vice President**  
**Head of Finance**

## Medium-term Business Plan Progress

Tosoh is executing a medium-term business plan for the three fiscal years from 2020 to 2022.

### Progress in Fiscal Year 2021

Operating income for fiscal 2021, the second year of the three-year medium-term business plan, was ¥87.8 billion, an increase of ¥6.2 billion over fiscal 2020, the first year of the plan.

In fiscal 2022, the final year of the plan, the Chlor-alkali business is expected to see higher-than-planned market prices for products such as PVC resin. However, product demand is not expected to return to the level assumed in the plan, despite the anticipated recovery of the global economy. Moreover, sales volume is expected to fall short of the plan, mainly in the Specialty business. At present, we expect operating income in fiscal 2022 to exceed that of fiscal 2021, and we will make every effort to achieve the profit target of ¥110 billion set forth in the medium-term business plan.

## Management Policy

### Basic Policy

1. Stabilize and expand earnings through the dual management strategy.

### Commodities

- Strengthen business foundation to increase production capacity and enhance

competitiveness and profitability.

### Specialties

- Stabilize and increase the revenue base by differentiating growth areas, expanding business by increasing capacity, and fostering new businesses.
2. Strengthen infrastructure and foster a culture of safety.
    - Ensuring safe plant operation is a social responsibility and takes precedence over everything else.
  3. Maintain a strong financial foundation.
    - Ensure a solid financial foundation that enables the timely execution of major investments and M&A.
  4. Promote energy conservation and effective use of CO<sub>2</sub>
    - Constantly invest in energy conservation as another social responsibility.

### 1. Direction of Capital Investment

- **Commodities**
  - Further strengthen the business base
  - Further strengthen derivative products
- **Specialties**
  - Expand capacity in growth areas
  - Further invest in semiconductor-related businesses based on demand trends
- **Infrastructure**
  - Strengthen and improve the efficiency of logistics infrastructure

### Key Initiatives

- Investments will be made in accordance with the medium-term business plan, with the cumulative investment for the three-year period expected to exceed the plan by about ¥10 billion.
- We will continue to seek M&A opportunities, mainly in the bioscience field.

### Major Capital Investment Plans

- **Commodities**  
Power generation equipment efficiency improvement  
Power generation boiler biomass co-firing support

Calcium hypochlorite (renew facility)

- **Specialties**

CR (debottleneck production)

Glycol columns and eluents (automation)

Bromine (renew facility)

Silica glass materials and processed products (expansion)

- **Infrastructure**

Construction of new general logistics warehouse

Renewal of ethylene and VCM vessels

Construction and renovation of research building at Tokyo Research Center

## 2. R&D

- Accelerate the development of new products based on the previous medium-term business plan.
- Improve material design through building materials informatics (MI) technologies.
- Promote R&D based on SDGs.

### Key Initiatives

- Renovate buildings and facilities at all research bases (Nanyo Complex, Yokkaichi Complex, Tokyo Research Center) (total: over ¥20 billion)
- Accelerate development through innovation (zeolite, zirconia, SARS-CoV-2 antibody detection reagents, etc.)
- Establish a dedicated MI team; establish an MI Center in FY2024 by sequentially expanding the team
- Acquire advanced technologies by utilizing fund information, etc.

## 3. Financial and Shareholder Return Policy

### Financial Foundation

- Maintain a strong financial base that enables timely execution of large-scale investments and M&A.
- Ensure that the financial base allows constant, stable dividends.

### Fiscal Year 2021 Results

- Equity capital: ¥615.6 billion (+¥48 billion from the end of the previous fiscal year)
- Equity ratio: 62.6% (-1.4% from the end of the previous fiscal year)
- Interest-bearing debt: ¥126.5 billion (+¥30.7 billion from the end of the previous fiscal year)

## Shareholder Returns

- Ensure continued stable dividends as a basic policy.
- Determine dividends based on performance, free cash flow, future business development, and other factors.
- Establish target dividend payout ratio of approximately 30%.

### Fiscal Year 2021 Results

- Dividends per share: ¥60 yen (+¥4 compared with the previous year)
- Dividend payout ratio: 30.3% (-2.4% compared with the previous year)
- Enhance shareholder returns through share buybacks (¥10 billion from May to end of July 2020)

## 4. Strengthen Infrastructure and Foster a Culture of Safety

### Key Initiatives

- Continue and expand education (KY training, operation education using simulators, actual experience at training plants)
- Continue to strengthen preventive maintenance based on the results of comprehensive facility inspections and reinforce the construction system
- Introduce operation support systems such as an abnormality prediction detection system using big data and the Internet of Things (IoT)

## 5. Promote Energy Conservation and Effective Use of CO<sub>2</sub>

### Key Initiatives

- Perform energy-saving modification of electrolyzers
- Introduce the latest technology to power generation facilities
- Improve efficiency of naphtha cracking furnace and install gas turbines
- Reduce coal consumption by co-firing biomass in power generation boilers
- Develop technologies for CO<sub>2</sub> separation and recovery and conversion to raw materials
- Establish the CO<sub>2</sub> Reduction and Effective Use Strategy Office and the Nanyo and Yokkaichi Complex Task Force Teams

## Overview by Business Segment

In fiscal year 2021, amid the severe business environment caused by the COVID-19 pandemic, operating income is expected to increase. Sales, however, are expected to decline compared with the previous fiscal year.



## **Petrochemical Group**

### ***Net Sales***

#### **Olefins**

Shipments of propylene and cumene decreased owing to a drop in production.

Product prices decreased due to a decline in raw material and fuel prices and overseas markets.

#### **Polymers**

Domestic and export shipments of polyethylene resin decreased due to the impact of the COVID-19 pandemic. Product prices fell, reflecting a decline in naphtha prices.

### **Operating Income**

Operating income decreased due to unfavorable trade conditions resulting from lower selling prices and the deterioration in the difference between product receipts and payments caused by lower prices of raw materials such as naphtha

## **Chlor-alkali Group**

### ***Net Sales***

#### **Chlor-alkali**

Product prices of caustic soda fell, reflecting a decline in overseas market prices.

#### **Polyurethanes**

Domestic and export shipments of methylene diphenyl diisocyanate (MDI) decreased due to the impact of the COVID-19 pandemic.

#### **Cement**

Domestic and export shipments decreased due to sluggish demand.

### **Operating Income**

Operating income increased due to improved trade conditions for PVC products and polyurethane raw materials.

## **Specialty Group**

### ***Net Sales***

#### **Organic Chemicals**

Shipments of ethyleneamines were almost the same as the previous fiscal year.

#### **Bioscience**

Regarding diagnostic products, shipments of in vitro products decreased due to the COVID-19 pandemic.

#### **Advanced Materials**

Shipments of high-silica zeolite decreased due to the COVID-19 pandemic. Shipments of zirconia for decorative applications increased.

### **Operating income**

Operating income decreased due to drop in sales volume caused by the COVID-19 pandemic and an increase in fixed costs.

## **Engineering Group/Ancillary**

### ***Net Sales***

#### **Engineering**

In the water treatment business, large-scale domestic projects in the electronics industry made steady progress, and service solutions such as maintenance and facility remodeling in various fields performed well.

#### **Ancillary**

Net sales of Ancillary companies such as trading companies decreased.

### **Operating Income**

Operating income decreased due to the absence of the concentration of profitable water treatment business projects in the previous fiscal year.

## Review of Operations: Petrochemical Group

### Olefins

The olefins business is centered on the naphtha cracker located at the Yokkaichi Complex within the greater Kasumi Industrial Complex. Tosoh produces ethylene, propylene, and other basic petrochemical raw materials.

### SWOT Analysis

#### Strengths

- Owner of the sole naphtha cracker in the Chukyo region
- Stable demand for derivatives
- Agility through ownership of ethylene carrier

#### Weaknesses

- Impact of changes in demand for derivatives
- Impact of price fluctuations of raw materials and fuels
- Increase in maintenance costs due to aging of facilities

#### Opportunities

- Strong demand growth in Asia
- Further downstream development (M&A related to derivatives)

#### Threats

- Economic slowdown and declining demand due to prolonged trade friction between the United States and China and the impact of the COVID-19 pandemic
- Unexpected influx of petrochemical products from China

### Objective

We aim to expand our value-added product line through the sale and effective use of all fractions produced by the naphtha cracker in collaboration with a robust derivative chain. In this way, we intend to expand our range of value-added products. We also aim to build a structure

that will enable us to secure stable earnings regardless of changes in the business environment.

### Growth Strategy

To further strengthen the foundation of our Commodity business, we will work to improve cost competitiveness and stabilize operations of our naphtha cracker, and deepen our Petrochemical business by integrating production, research, and sales linked with demand for derivatives.

### Message from the Senior General Manager

In collaboration with a well-balanced and robust derivative chain, we aim to expand our value-added product line by selling each fraction produced by our naphtha cracker and using them more effectively. In order to secure stable profits in a changing business environment, we will strengthen our competitiveness by pursuing the diversification of raw materials and the improvement of naphtha cracker efficiency.

In addition, we are aiming to explore and deepen our business by setting targets for each product line, with sales, R&D, and manufacturing working together with a focus on information sharing.

**Hidetoshi Horiuchi**  
**Vice President**

**Senior General Manager, Olefins Division**

### Polymers

Aiming to be unique and distinctive in this business, we provide products that meet a wide range of needs while integrating the fields of polyethylene and functional polymers.

### SWOT Analysis

#### Strengths

- Lineup of high-quality products that meet a wide range of needs
- Stable production system based on Tosoh-produced raw materials
- World's only manufacturer of chlorosulphonated polyethylene (CSM) in the high-end market

### Weaknesses

- Small-scale plants
- High plant maintenance costs

### Opportunities

- Stable domestic market and expanding demand overseas
- Need to respond to the shift to electric vehicles (EVs) and high-speed communications
- Increasing health awareness triggered by COVID-19 pandemic
- Rising environmental awareness and development of related materials

### Threats

- Increase in production capacity of overseas competitors of raw materials derived from ethane (Middle East) and shale gas (North America)
- Decline in demand due to deplasticization and bioplastics
- Global economic slowdown and supply chain disruptions due to US-China trade friction and COVID-19 pandemic

### Objective

The division's basic strategy is to promote differentiation through high-value-added products. In response to recent social issues concerning plastics (3R, decarbonized society, etc.), we will continue to focus on technological development and marketing promotion. In addition, in 2021, we are working to debottleneck CR production to increase capacity while continuing to aggressively plan investments to raise capacity and strengthen our business foundation.

### Growth Strategy

We will promote high-value-added applications for polyethylene in the medical field such as infusion bags and eye drop containers, the food industry (low-odor containers and easy-peel materials), and the semiconductor sector (high-purity chemical containers), where cleanliness, which is one of our strengths, is required.

In the area of functional polymers, we will focus on the automotive industry (underbody coating, metal bonding, and cold- and heat-resistant impact material), where the shift to EVs is progressing, and the medical field (medical gloves). In particular, we will develop applications for synthetic rubber (CR and CSM) in line with their respective functional capabilities.

### Message from the Senior General Manager

The Polymers Division will continue to pursue the provision of differentiated and high-value-added products that meet the needs of customers, while promoting the development of environment-friendly technologies such as plastic recycling.

In addition, we will continue to study and plan to deepen our ability to respond to the diverse needs of our customers, further expand our product lineup, and increase our capacity to ensure a stable supply of products, thereby contributing to society through business operations that integrate manufacturing, research, and sales.

**Hideaki Nishioka**  
**Vice President**  
**Senior General Manager, Polymers Division**

## Review of Operations: Chlor-alkali Group

### *Chlor-alkali*

Tosoh produces caustic soda and chlorine at one of the largest electrolysis facilities in Asia. Caustic soda is used in paper, chemical fiber, and alumina production. Chlorine is utilized in a wide range of industries, including raw materials for PVC resin, sterilization, and bleaching.

### SWOT Analysis

#### Strengths

- Largest electrolysis facility in Japan with a well-balanced production capacity for caustic soda and chlorine ensuring stable operations
- Competitive infrastructure at the Nanyo Complex and other domestic manufacturing sites

#### Weaknesses

- Renovation costs associated with aging facilities
- Electricity-intensive industry

#### Opportunities

- Reduction of CO<sub>2</sub> emissions using energy-saving technologies developed by Tosoh and licensing of such technologies
- Wide range of chlorine products that contribute to sanitation management, such as hypochlorous acid soda and calcium hypochlorite
- Demand for PVC resin in Southeast Asia due to economic growth

#### Threats

- Contracting market for chlor-alkali products in Japan
- Economic recession due to COVID-19 pandemic

#### Objective

The Chlor-alkali Division, which handles commodity products, is easily affected by market conditions. However, we aim to build a stable revenue base by continuing full production and sales from our electrolysis plants and maintaining a balance between caustic soda and chlorine production.

In addition, with the current trend toward a decarbonized society, the roles and expectations of our company have heightened. Caustic soda is indispensable for the production of cathode

material for EV batteries, which can reduce the burden on the environment, and is required to be of higher quality than before. By responding to these demands, we will contribute to the sustainable development of society.

### Growth Strategy

In Southeast Asia and other overseas markets, we expect demand for chlor-alkali products to grow steadily at a rate of several percent per year.

To ensure that we can meet market demand and support economic development in each country, we will make the necessary capital investments, including updating plant facilities and developing logistics infrastructure in Asia, to establish a stable supply system.

### Message from the Senior General Manager

Caustic soda and chlorine handled by the Chlor-alkali Division are used in a variety of fields, including the production of paper, artificial fiber, and alumina. These products are vital for the development of industry and society and the maintenance of living standards, as well as in the purification of PVC resin and tap water.

We operate the largest electrolysis facility in Japan, which enables us to continue to provide a stable supply. We will also develop a supply system for overseas markets where further demand is expected, thereby meeting the requirements of our customers.

**Hideyuki Obayashi**  
Vice President

Senior General Manager, Chlor-alkali Division

### Urethane

Polyurethane is used in a wide variety of applications, including automobiles, home appliances, housing, and industrial materials. It contributes to energy conservation and weight reduction which contributes to better performance of EVs.

## SWOT Analysis

### Strengths

- Efficient integrated production system leveraging our vinyl isocyanate chain
- Lineup of products with distinctive functional capabilities
- R&D system able to respond to market needs

### Weaknesses

- Business scale inferior to competitors
- Product mix dominated by isocyanates

### Opportunities

- Strong growth in polyurethane market
- Social environmental demands such as carbon neutrality
- Proximity to China, the largest demand center, and Southeast Asia and India, where demand is expected to grow in the future

### Threats

- Gradual decline in polyurethane market due to increased competitiveness of other resins
- Intensifying competition due to further capacity expansion by competitors
- Cost increase due to enhanced environmental responsiveness and deterioration of logistics situation

### Objective

The Urethane Division supplies the world with high-quality products created by leveraging manufacturing technologies and product development capabilities cultivated over many years. Our products are used in a variety of applications, including automobiles, construction, household goods, clothing, and industrial materials, and are indispensable to society.

In recent years, as global environmental awareness has heightened, environmental issues such as reducing CO<sub>2</sub> emissions have become an even greater challenge. We will promote the development of environment-friendly products and aim to reduce CO<sub>2</sub> emissions by establishing manufacturing processes that can effectively use CO<sub>2</sub> as a raw material and by improving existing manufacturing processes.

Through technological innovation, we hope to proactively address these issues and provide products that help solve social environmental concerns.

### Growth Strategy

In order to stabilize and maximize profits, we will continue to strengthen the foundation of MDI and improve its competitiveness and profitability. This will help ensure stable operation of the vinyl isocyanate chain through maximizing sales while producing at full capacity.

We will aggressively invest in growth areas centered on functional urethanes to expand the scale of our business.

### Message from the Senior General Manager

The Urethane Division handles a wide range of products, from commodity products such as MDI to specialty products developed in response to user needs. This division is the embodiment of our company's dual management, the aim of which is to generate stable profits from commodity products and high profits from specialty products.

Recently, the Japanese government declared that it aims to achieve a carbon-neutral society by 2050. We believe that our business has great potential in the use of CO<sub>2</sub> as a raw material, and that we can not only pursue higher profits but also contribute to society by helping reduce environmental impact.

**Takafumi Kiuchi**  
**Vice President**  
**Senior General Manager, Urethane Division**

## Review of Operations: Specialty Group

### *Organic Chemicals*

The company's business is centered on ethyleneamines, environmental chemicals, bromine, and flame retardants. Our highly original products contribute to the reduction of environmental impact and support people's daily lives.

### SWOT Analysis

#### Strengths

- Creation of new technologies through organic synthesis technology
- Global sales bases
- Collaboration across manufacturing, sales, and research departments

#### Weaknesses

- Smaller business scale compared with major global corporations
- Time spent from new business launch to market release

#### Opportunities

- Chemical products indispensable to society and a stable market
- Few bromine and ethyleneamines manufacturers in Asia

#### Threats

- Decrease in demand due to global economic slowdown
- New plant expansion by competitors

#### Objective

The Organic Chemicals Division, with its highly original product line, supports people's daily lives by utilizing advanced organic synthesis technologies that contribute to solving social issues centered on the environment.

While continuing to support the social infrastructure with materials such as ethyleneamines and bromine, we aim to develop a sustainable society where environmental protection is ensured for future generations and people across the globe can enjoy peace of mind through our new products.

### Growth Strategy

Manufactured from the seawater method with low environmental impact, bromine is used as a raw material for organic intermediates and resin flame retardants. We aim to maintain our domestic bromine market share and expand into Asia. Regarding amines, we will develop high-value-added derivatives in order to increase profits throughout the amine chain. Through our eco business, which includes heavy metal treatment agents that insolubilize heavy metals contained in waste incineration ashes to prevent soil contamination and cleaning agents with low environmental impact, we will work to expand our market by refining our proprietary technologies.

In new businesses such as conductive materials and chemicals that prevent the release of aldehyde, we aim to commercialize products as soon as possible through differentiated technologies. Conductive materials play a crucial role in the digitized society, and aldehyde is a causative agent of sick building syndrome.

### Message from the Senior General Manager

With no end in sight to the COVID-19 pandemic, it is difficult to forecast global demand. We will take fullest possible advantage of our status as one of Asia's few manufacturers of bromine and ethyleneamines to ensure stable supply—regardless of global demand trends—and expand our customer base.

At the same time, the Organic Chemicals Division will contribute to social changes based on SDGs. This includes the realization of carbon neutrality—an urgent issue worldwide—and responses in the environmental and energy fields, through its advanced organic synthesis and differentiated technologies.

**Takahiko Kamezaki**  
**Vice President**  
**Senior General Manager, Organic Chemicals Division**

### *Bioscience*

The company operates in the fields of separation and purification and diagnosis, providing services ranging from the development, manufacture, and sale of instruments and reagents to maintenance and customer support.



## SWOT Analysis

### Strengths

- Proprietary technology based on separation
- Extensive lineup of diagnostic items and automated instruments
- Worldwide sales network

### Weaknesses

- Single manufacturing base for each product
- Time and cost required to create new products

### Opportunities

- Demand due to trends in pharmaceutical manufacturing
- Increase in testing opportunities due to infectious disease outbreaks

### Threats

- Market contraction due to consolidation of hospitals and laboratories in Japan and overseas
- Compliance with laws and regulations on a worldwide basis

### Objective

The Bioscience Division strives to contribute to society worldwide by supplying in vitro diagnostic reagents and products that are essential to pharmaceutical companies' production.

We work to provide optimal solutions to our customers and strive to be recognized in the market as a company that is regarded highly by its customers.

### Growth Strategy

By developing and manufacturing instruments and reagents, we aim to expand our business in our target fields, become a revenue pillar as one of the core businesses of the Specialty Group, and broaden our market presence.

To achieve this goal, we will extend our existing product lineup by increasing the number of diagnostic products and expanding analytical column and separation media products mainly for biotechnology. We will also increase sales by expanding the lineup of existing products, developing products for peripheral businesses that generate synergistic effects, and creating new businesses through joint research and M&A.

### Message from the Senior General Manager

In the diagnostics field, which deals with products for diagnosing diseases, and in the separation and purification field, which mainly deals with products for separating, purifying, and analyzing pharmaceutical raw materials, the Bioscience Division is globally developing product groups that can contribute to people's "Good Health and Well-Being," Goal 3 of the SDGs.

We will continue our business growth through technological innovation, expanding existing product lines, diversifying into peripheral fields, and creating new business opportunities. At the same time, we will develop a global sales and support system that can continuously provide solutions and contribute to people worldwide.

**Masanobu Kasai, PhD**  
**Vice President**  
**Senior General Manager, Bioscience Division**

### Advanced Materials

With a wide array of products including synthetic zeolites, zirconia, thin film materials, and silica glass, we are expanding our business globally. Featuring unique functional capabilities, our products contribute to the enrichment of society and the reduction of environmental impact.

## SWOT Analysis

### Strengths

- High-performance product lineup based on proprietary technologies
- Accumulation and transmission of knowhow and experience accumulated through extensive customer support
- Global brand recognition
- Supply stability with multiple production bases



### Weaknesses

- Exchange rate fluctuations

### Opportunities

- New demand inspired by trend toward carbon neutrality
- Healthcare needs associated with promotion of health investment and realization of a health-promoting society
- Long-term demand for semiconductors

### Threats

- Intensifying competition due to the rise of competitors

### Objective

The Advanced Materials Division aims to become a powerful specialty business with a strong presence in the global market by providing products and services with new value based on its proprietary technologies. Our mission is to provide products that contribute to enriching society and reducing environmental impact.

### Growth Strategy

We will promote business growth through the development of new technologies, cultivation of untapped markets, and M&A by focusing on the areas of environment and energy, electronic materials, and life science where high growth is anticipated.

The core business domains of this division are battery materials, synthetic zeolites, zirconia, quartz, and thin film materials. These domains will provide the technology seeds necessary to meet future needs. Focusing on these, as well as market demands, will strengthen the foundation of the division, thereby promoting growth.

Furthermore, we have introduced the concept of intellectual property landscape as a method of searching for new technologies, and are building our own search tools, which will lay the groundwork for future growth.

### Message from the Senior General Manager

The strength of the Specialty business is determined by the function of the product and the extent of its value to the customer. For this reason, we need to continue to lead in technology

and promote the improvement and creation of customer value by disseminating new technologies before anyone else.

Furthermore, changes in customers' values not only pose a risk, but present a significant opportunity. To provide products that meet market needs in a timely manner, it is important that we increase our access to technologies and technical knowledge, and that we disseminate this information throughout the company and share it accurately with the next generation of employees. This is the decisive factor for the Specialty business.

**Nobukatsu Omichi**  
**Vice President**  
**Senior General Manager, Advanced Materials Division**

## Research and Development

Chemical manufacturers play an increasingly important role in the realization of a sustainable and prosperous society. Based on the concept of creating shared value (CSV\*), we aim to introduce innovative products and technologies that offer unprecedented value. In addition, we are engaged in R&D aimed at resolving social issues based on the SDGs.

*\*The idea that strategically addressing social issues will contribute to the long-term growth of a company.*

### Basic Policy

As the basic policy for R&D, since the previous medium-term business plan, we have designated three priority fields, namely, life science, environment and energy, and electronic materials, and are actively investing in R&D accordingly.

With the aim of accelerating R&D and strengthening collaboration between business units and research laboratories, we have established R&D systems according to technology and function. We will generate synergy by reorganizing into business-related research laboratories that support product development for existing businesses and corporate research laboratories that are responsible for basic technologies and new fields. Tosoh Research and Development Planning, which plans and formulates R&D, will be responsible for oversight.

**Toru Doi**  
**Senior Vice President**  
**General Manager, Research and Development Planning**

### Technology Priorities for R&D

#### Life Science

Creation of new products that expand the scope of the separation and purification and diagnosis business

Creation of new businesses by deepening in-house technologies and introducing external technologies

Domains:

- Biopharmaceuticals

- Biomedical materials
- Clinical diagnostics and testing
- Healthcare

### Environment and Energy

Creation of unique products and technologies for the realization of a low-carbon society

Creation of new materials by utilizing powder metallurgy technology, organic complexes, and external technologies

Domains:

- Composite materials for mobility
- Energy conversion materials
- Battery materials
- CO<sub>2</sub> and marine plastic technologies

### Electronic Materials

Creation of new electronic materials using organic compounds, polymer design, and device evaluation technologies

Acquisition of advanced technologies and evaluation technologies through collaboration with Group companies, industry, academia, and government

Domains:

- Communications materials
- Semiconductor-related materials
- Printable electronics materials
- Display materials

### CO<sub>2</sub> Reduction Initiatives

Tosoh considers CO<sub>2</sub> to be a carbon resource and is working on the development of technology to separate, recover, and reuse CO<sub>2</sub>—known as carbon recycling—as a carbon compound.

Specifically, we are developing CO<sub>2</sub> separation membranes and separation and recovery agents for extracting CO<sub>2</sub> from exhaust gases generated by thermal power plants. We are also working on technology to directly synthesize isocyanate, a raw material for polyurethane resin, by reacting CO<sub>2</sub> in exhaust gas with amine compounds.

### Participation in NEDO Research and Development Programs

We participate in commissioned and subsidized projects conducted by the New Energy and Industrial Technology Development Organization (NEDO), a national R&D organization.

- **Leading Research Program: Unexplored Challenge 2050**

Direct conversion of low-concentration CO<sub>2</sub> from exhaust gases into useful products

- **Leading Research Program: Energy and Environment**

Development of liquid-phase hybrid recycling technologies for multilayer plastic films

- **Development of Cellulose Nanofiber-Related Technologies**

Development of cost-reducing technology for manufacturing CNF-reinforced CR for use in transmission belts

### Introduction of External Technology

We have established a base in Silicon Valley and posted two researchers there for the purpose of collecting technology information and finding venture capital companies. We have established a system to collect and evaluate about 2,000 cases of innovative technology information per year. Information includes that received from venture capital companies in the materials and biotechnology fields in which we invest. For promising projects, we aim to revitalize research activities through the introduction of external technologies. Measures include developing themes at the research institute, conducting joint research with partner companies, and considering investments in venture companies.

### Open Innovation

We are actively engaged in open innovation with universities and research institutions to quickly anticipate and respond to market changes resulting from digitalization and globalization. In June 2019, we established a social collaboration course related to joint development in the area of high-silica zeolite. We then established a similar course in the area of zirconia in July 2020.

In addition, we have established a laboratory in the Yokkaichi area to specifically promote joint development with customers.

### Strengthening of Research Infrastructure: Establishment of Battery Materials Open Laboratory

In 2020, we inaugurated an open battery laboratory at the Tokyo Research Center to promote the interdisciplinary development of materials for lithium-ion batteries, fuel cells, and all-solid-

state batteries—considered to be the next generation of batteries—among the various research laboratories within the company.

In the development of battery materials, where competition is fierce and technology is becoming more sophisticated every year, it is extremely important to combine expertise not only in materials but also in electrochemicals and experimentation. At the Battery Open Laboratory, each research institute brings in materials to work on. With the support of experts, an environment is provided for battery fabrication and evaluation analysis. We are also strengthening activities that enable the creation of new technologies and value through interdisciplinary discussions among laboratories.

### Digital Transformation in R&D: Utilization of MI

Product functions are becoming increasingly sophisticated, with electronics-related materials changing particularly rapidly. Digital transformation in R&D is important in adapting to this change. Tosoh has introduced electronic laboratory notebooks using tablet terminals and established a system that facilitates efficient data entry, along with the accumulation and sharing of information.

In addition, we are in the process of establishing a specialized center for MI and working to accelerate research in all fields by utilizing MI technology based on accumulated data.

## Intellectual Property

The most important role of intellectual property is to secure broad and reliable rights to technology obtained as a result of R&D, thereby contributing to the expansion of market share and profits.

Intellectual property conducts related activities in cooperation with the business and research divisions in order to create intellectual property that will enhance corporate value.

### Basic Policy

In order for intellectual property to be the engine for creating profitable intellectual property and be depended upon to enforce rights and respond to other companies' patents, we are in close communication with the business and research divisions. To best respond to research and business strategies, we conduct our activities based on the following three basic policies:

- Strengthen guidance on strategic application
- Strengthen patent search, analysis, and information collection
- Strengthen intellectual property landscape (IPL)<sup>\*1</sup>

<sup>\*1</sup> *A new method for formulating and executing management and business strategies that utilize intellectual property information.*

**Hiroyuki Yoshimura**  
**Vice President**  
**General Manager, Legal and Patents**

### Strategic Application

Tosoh is reinforcing liaison activities, such as holding intellectual property patent review meetings and workshops with the research division, to ensure the systematic filing of patent applications.<sup>2</sup> These liaison activities are essential for creating effective and strong patents that contribute to business in accordance with our planned patent acquisition strategy.

In addition, for priority areas set by the research laboratories, we are instituting a network by strategically applying for patents while utilizing external offices.

In building our network, we actively file foreign patent applications in the United States, China, Europe, and other key countries and regions in consideration of our global business development.

In addition, based on past examples of how intellectual property can later bring benefits, we focus not only on targeted applications, but also on discovering unplanned patent applications.

<sup>2</sup> *The Japan Patent Office handles the entire process from application to acquisition of rights, including intellectual property strategic planning, invention discovery, filing, and intermediate processing.*

### Patent Search, Analysis, and Information Gathering

Patent searches are important for obtaining useful information that can be applied to business and for uncovering the existence of patents that may pose obstacles to our company.

In particular, patent clearance searches are of prime importance in preventing patent infringement by others, hence we are increasing our efforts in this area. Specifically, we conduct patent searches to determine whether the manufacture and sale of our products infringe on the patent rights and applications of others.

We have also introduced an AI-based patent search tool, a patent analysis tool, and a corporate information and technology trend research tool to support our efforts.

### Intellectual Property Landscape

We are building an IPL with the aim of supporting business units and research institutes based on comprehensive analysis of intellectual property and nonintellectual property information.

The performance and functions required of products are becoming more sophisticated and diverse every year. And we are under pressure to satisfy those requirements much more rapidly than in the past. To survive amidst global competition, it is extremely important that we continuously promote R&D while collecting, analyzing, and effectively utilizing a variety of information.

Tosoh collects and analyzes intellectual and nonintellectual property information in collaboration with corporate R&D, business units, and intellectual property. We use frameworks and tools to organize and analyze this information to create new businesses and new applications. Furthermore, we ensure the realization of basic management policies by integrating business, research, and intellectual property strategies.

### **Management Strategy**

- Stabilize and expand earnings through dual management
- Strengthen safety infrastructure and foster safety culture
- Maintain a strong financial base
- Promote energy conservation and effective use of CO<sub>2</sub>

### **Business Strategy**

- Life Science
- Environment and Energy
- Electronic Materials

### **Intellectual Property Strategy**

#### ***Research Strategy***

- Formulate intellectual property strategies based on business and research information
- Develop intellectual property strategy targeted at global markets



## Value-Creation Practices

### Value Creation at the Tosoh Group

Through our business activities, we at Tosoh undertake to create unprecedented value that contributes to solving social issues and helps us grow sustainably as a company. We aim to further enhance our corporate value through this growth. Tosoh Corporation's corporate philosophy combined with the greater Tosoh Group CSR Basic Policy sets the direction for our value creation which will not be hindered by various global social issues. Rather, Tosoh's value creation will continue to strengthen in accordance with the five tenets of the Tosoh Spirit and of the Tosoh Group Code of Conduct, which are derived from our support for the environment, society, and corporate governance and from further strengthening trust and collaboration with our stakeholders. This will enhance our ability to achieve SDGs and resolve social issues, and to return to society the value we have created. Through its CSR activities, Tosoh hopes to fulfill its corporate social responsibility and contribute to the realization of a sustainable society.

### Tosoh Spirit

**Eager acceptance of challenges**

**Calm assessment of situations**

**Passionate response**

**Firm resolve**

**Cooperation and gratitude**

### Special Feature 1: Human Resource Strategies

*We promote autonomous thinking as a base for future growth.*

**Mamoru Kuwada**  
**Director and Executive Vice President**  
**Head of Human Resources**

Amidst an uncertain business environment, the keys to achieving medium- to long-term growth are the development of the next generation of employees, and the creation of a comfortable environment within which they can work.

To develop self-reliant employees capable of independent thought and action, Tosoh has overhauled its training system, which focused mainly on skill development and acquisition, and restructured it into a sustainable learning program based on career education. Tosoh director and executive vice president Mamoru Kuwada serves as the head of Human Resources. Mr. Kuwada talks about the company's current human resource strategy and future initiatives.

### Thoughts on the development of human resources to support the company's future

We aim to develop independent employees who can think and act on their own initiative by leveraging the quality of the corporate culture that has been cultivated at Tosoh over the years.

In fiscal year 2022, Tosoh revised its basic policy for human resource development (see Figure 1). The new policy is to develop self-reliant personnel who can create their own tasks and roles and involve others toward the achievement of their goals, whether inside or outside the organization. They must have their own vision of how they would respond to changes in the business environment, and be motivated to learn and persevere in achieving that vision.

In my view, this does not mean that we have introduced an entirely new way of thinking; rather, we have characterized the quality of our carefully cultivated corporate culture and crystallized it as a basic policy for human resource development.

Tosoh's work ethic has always been one that values the independence and personal initiative of its employees. The relationship between superiors and subordinates is very open, and subordinates are able to work with a high degree of freedom rather than being told what to do. I come from an engineering background and have been in the manufacturing sector for about 30 years since I joined the company, and I feel the same way about my own personal experience.

Although I joined the company in 1984, I still remember the instruction I received from the executive director upon entering Tosoh. Once you join the company, there are no tests like there were in school. From that point onward, you have to negotiate and overcome hurdles on your own. Your success in doing this will determine your future. The point is that you cannot grow unless you train yourself independently. Sometime later, the Tosoh Spirit was established, and I felt that the words of these three tenets of the Tosoh Spirit—'eager acceptance of challenges,' 'calm assessment of situations,' and 'firm resolve'—embody the basic theme of the instruction I received.

I believe that this way of thinking, which values self-reliance and independence, is especially important in today's diverse, complex, and ever-changing world. As changes in the business environment are constantly occurring, the career paths of today's young employees are changing from the past. There will be many types of jobs that did not exist before. The nature of work will become broader and more challenging, and there will be an increasing number of situations that will require people to think on their own feet and act accordingly. As the head of

Human Resources, I believe that our mission is to develop human resources who can respond to changes in the business environment with confidence and self-reliance.

We are working to implement educational programs to develop the five essential elements of self-reliant human resources and to foster a work environment where each and every employee can work with enthusiasm.

### **Specific measures you are taking to promote your human resources strategy**

First of all, with regard to education, we reviewed our training system in fiscal 2022 in order to achieve our basic policy of nurturing self-reliant human resources (see Figure 2). Our previous system was based on the development of work competency and management skills, but we have evolved it into a sustainable learning program based on career education. This program is based on the Tosoh Spirit and discussions with management to identify the aforementioned five elements—the ability to involve and motivate, the ability to change and improve oneself, the determination to get things done, the ability to envision and execute, and the spirit of exploration—that are necessary for the independently minded and self-reliant human resources that Tosoh aims to cultivate. The program is designed to help participants acquire each element step by step through career education and self-study using learning tools provided by Human Resources.

One of the key points of the revised training system is to enable employees to consider their individual careers within the rank-based education system. For this reason, we have added career counseling wherein employees can look back on what they have accomplished, assess their personal skills and abilities, and consider the next steps to take. This supports employees by providing a structure under which they can receive counseling after training and the opportunity to discuss the future of their individual careers.

Human Resources also strives to promote diversity, based on the belief that it is essential to utilize diverse human resources and values. In particular, I see the promotion of the role of women as an essential factor. In terms of hiring, the ratio of female employees has been steadily rising year by year. In fiscal year 2021, we achieved one of our CSR priorities of having more than 20% of career-track positions filled by female employees. Furthermore, we are also promoting the assignment of women to manufacturing, sales, and shift work, where traditionally there have been few female employees, in order to expand their opportunities and create a workplace where they can continue working for a long time. In 2021, we established a new return system that will allow those who have left the company due to family circumstances to return to work.

In addition, as part of our efforts to create a workplace where employees can work enthusiastically, we are working to achieve a work-life balance and promote Kenkokeiei®

whose measures include establishing various leave and absence systems for childcare and nursing care, as well as shorter working hours.

It is important to support the promotion of physical and mental health so that employees, who are responsible for the fulfillment of our corporate philosophy, can maximize their potential. To this end, we are implementing a variety of health promotion activities based on the three pillars of 'physical fitness,' 'lifestyle,' and 'mental health' with the aim of preventing illness and promoting health. Every year, we hold walking activities, events on the themes of good nutrition, giving up smoking, and moderate alcohol consumption. We also conduct mental health workshops led by industry-related physicians and outside lecturers. These activities serve to raise health awareness among our employees and support self-care as a company policy. These activities have been received positively, as evidenced by our having been recognized by Japan's Ministry of Economy, Trade and Industry under Certified Health & Productivity Management Outstanding Organizations program, in the large enterprise category, for the second straight year.

### **Thoughts from the standpoint of an executive in charge of human resources**

We will continue to create a workplace culture in which fear of failure does not stop us from accepting challenges, and in which we support each other in difficult times.

I believe that on-the-job training is essential to human resource education. Of course, there are areas where OJT alone is not enough. We need to supplement it with classroom lectures such as rank-based training. However, I believe that performing the actual work affords people the best opportunity for growth.

For OJT to be effective, the company must proactively provide young employees with opportunities to try things on their own. As I mentioned earlier, this is part of Tosoh's corporate culture. There are often difficulties early on in the process, so the supervisor must monitor the situation and follow up accordingly.

Failure, though, is vital to a person's growth. As in my own experience, I believe that people grow through repeated failures of any kind.

Putting it another way, I think it is important for the development of human resources to maintain a work environment where the boss, seniors, and colleagues are willing to support junior employees even when they make mistakes. I think it is also important that the workplace is comfortable with a variety of measures in place, as well as clean offices and a system for remote work. Above all, I think the most important thing is to foster an atmosphere in the workplace where we continue to support each other even when conditions become challenging. In the future, I would like to pass on Tosoh's quality corporate culture, within which superiors and subordinates can communicate frankly, and develop human resources in a way that



enhances the potential of each individual. I want as many people as possible to feel they are glad to work at Tosoh.

## Special Feature 2: Tosoh SGM Corporation

Tosoh SGM Corporation supports the Tosoh Group with silica glass, a crucial material for the information society.

### Features of silica glass

#### *Superior transparency*

Silica glass has good transmittance characteristics across a wide range of wavelengths from ultraviolet to infrared as well as visible light.

#### *High purity*

Silica glass is made from silica (SiO<sub>2</sub>) and contains very low levels of metallic impurity.

#### *Resistance to heat*

Silica glass boasts a very high deformation temperature of about 1,700°C and can be used at temperatures as high as 1,000°C. It can also withstand sudden changes in temperature.

#### *High chemical resistance*

Silica glass features extreme chemical stability and excellent chemical resistance.

### Tosoh Group's Silica Glass Business Expansion Based on Advanced Manufacturing Technologies

Tosoh SGM was established in 1982 as Yamaguchi Japan Quartz, a subsidiary of Nippon Silica Glass Co., Ltd. (now Tosoh Quartz Corporation), at Tosoh's Nanyo Complex, in order to industrialize the synthetic quartz manufacturing process developed by the former Nippon Silica Glass.

Since a large amount of hydrogen is used in the production of silica glass, the plant was constructed within the Nanyo Complex, which has a large-scale electrolytic soda production

facility and abundant utilities such as by-product hydrogen. In 2000, the company name was changed to Tosoh SGM\* Corporation.

*\*SGM stands for Silica Glass Materials.*

Silica glass is unique from other types of glass, with excellent properties such as high purity, thermal shock resistance, high transparency, and high corrosion resistance. We are able to meet all kinds of needs by fully leveraging the manufacturing technologies we have developed over the years.

### Leveraging the Characteristics of Superior Materials in Expanding into New Markets

There are two main types of silica glass: fused silica glass and synthetic quartz glass. Tosoh SGM is engaged in the production of both.

Fused silica glass is made by melting high-purity crystalline silica powder or synthetic silica powder with an acid hydrogen flame or electric power to produce slabs or column-shaped ingots. It is mainly used for semiconductor manufacturing equipment components due to its superior heat resistance.

Synthetic silica glass, on the other hand, is produced by hydrolyzing high-purity silicon tetrachloride. Its high optical homogeneity makes it well suited for use as a material for optical components such as lenses and prisms.

The characteristics of these superior materials are indispensable in the fields of semiconductor manufacturing, communications, liquid crystal panel manufacturing, optics, and energy, meeting the various needs of the information society. In recent years, the demand for silica glass, an indispensable material in the semiconductor manufacturing process, has been rapidly growing in line with the spread of high-speed communication standard 5G, AI, IoT, autonomous driving, and EVs, as well as the digitalization of society, exemplified by telecommuting and online learning.

Through further expansion of our silica business, we will continue to contribute to a wide range of industrial fields that support the information society.

### Message from the President

#### Tapping Into New Markets by Introducing New Products

For the past four years, we have been promoting our transformation into a new Tosoh SGM. While expanding our production facilities, we are also shifting to new products and production systems that will lead the next generation. Fiscal year 2022 will be the final year of the program.

With our newly renovated facilities, we are transitioning to more precise and efficient manufacturing, launching new products, and accelerating the cultivation of new markets such as space exploration and the cutting-edge medical field.

We will continue to take on challenges aggressively and boldly in accordance with our basic policies of earning the trust and meeting the expectations of our customers, ensuring a safe and comfortable working environment, and continually developing new products and technologies.

**Yutaka Teshima**  
**President and Representative Director**

## CSR Management

### Tosoh Group CSR

#### CSR Basic Policy

The Tosoh Group positions CSR activities at the core of its management and aims to realize its corporate philosophy by sharing and implementing the CSR Basic Policy throughout the Group.

#### Tosoh Group CSR Basic Policy

In order to realize our corporate philosophy, we share and practice the following basic policies.

1) Contribute to the sustainable development of society through our business activities  
Through the deepening of our unique chemistry-based technologies and collaborative activities with our business partners around the world, we provide innovative and reliable products and services that help solve social issues and contribute to people's well-being.

2) Ensure safe and stable operation

We recognize that ensuring the safety and well-being of people involved in our business activities and stable operations are the most important management issues, hence we work assiduously to foster a culture that strengthens and secures our safety infrastructure.

3) Develop and promote a free and open corporate culture

By nurturing an open and people-friendly work environment that provides job satisfaction and respects human rights and diversity, we will realize a corporate culture that is full of vitality and in which employees and their families can take pride.

4) Preserve the environment

In addition to thorough management of chemical substances, we make continuous efforts throughout the value chain to minimize the impact of our worldwide business operations on the environment.

5) Pursue integrity in corporate activities

We work to maintain a global corporate group that is trusted by stakeholders through sincere and highly transparent corporate activities based on dialogue and collaboration.

#### Message from the head of CSR

Fiscal 2021 marks the final year of the initial three-year plan since the implementation of the Tosoh Group CSR Basic Policy. We are continuing to promote activities on a company-wide basis, led by the departments in charge, to achieve our key CSR goals.

During this period, we have actively participated in external initiatives, such as becoming a signatory to the UN Global Compact in April 2019 and endorsing the recommendations of the TCFD in November 2019. Since the importance of addressing climate change has gained urgency, we will further raise the level of our internal awareness as well as our contribution to the SDGs.

**Toru Doi**  
**Director, Senior Vice President**

#### CSR Promotion System

The CSR Committee, chaired by the president of Tosoh Corporation, is composed of members of the executive board, heads of the administrative divisions at Tosoh's headquarters, and chairpersons of the company's other committees. The CSR Committee formulates CSR policies, manages the progress of work toward the key CSR goals, and reports these to the board of directors. In addition, the CSR Promotion Team has been established as a specialized department to assist the CSR Committee, organize the CSR Promotion Meeting and serve as administration for both.

In fiscal 2021, the CSR Committee met twice—in August to deliberate on the results of important CSR activities in the previous fiscal year and in March to review the targets for the following fiscal year.

In addition, in the third year since the formulation of the Tosoh Group CSR Basic Policy, we have worked to improve our response to Group companies and to further the internal implementation of the policy, while actively participating in external evaluations and disseminating the necessary information.

In June 2021, we established the CO2 Reduction and Effective Use Strategy under the CO2 Reduction and Effective Use Promotion Committee. We also formed a Task Force under the committee at both our Nanyo and Yokkaichi Complexes in order to strengthen the implementation of our climate change response.

#### CSR Materiality

The Tosoh Group identified potential issues based on ISO 26000, GRI Standards, trends at other companies, and other factors. ISO 26000 is a globally recognized International Organization for Standardization (ISO) designation for organizational social responsibility, while

GRI is an international standard for sustainability issued by the Global Reporting Initiative (GRI), a nongovernmental organization.

In addition, we narrowed down the list of potential key issues by conducting an evaluation using a biaxial matrix. We plotted the importance of each issue to stakeholders on one axis and the importance of these issues to the Tosoh Group on the other.

From deliberations conducted at a CSR Committee meeting held in August 2018, 18 issues were identified for the sustainable growth of society and the Tosoh Group.

We established Key Performance Indicators (KPI) for the identified key issues and set medium-term targets for our CSR activities. We will continue to engage in CSR activities aimed at achieving these targets.

### **Responsible Care (RC) Activities**

Based on the recognition that environmental protection and safety and health are fundamental and important issues in business operations, the Tosoh Group has established the Basic Principles Regarding the Environment, Safety, and Health and Action Guidelines, taking into consideration the Japan Chemical Industry Association's Basic Policy on the Environment, Health and Safety. We are promoting RC activities.

### **Environment, Safety, and Health Basic Principles**

Based on the recognition of the prime importance of environmental protection and the assurance of safety and health, the Tosoh Group is engaged in continuous RC activities throughout a product's life cycle, from R&D, manufacture, use or consumption, through recycling or disposal. We contribute to the sustainable development of society through continuous innovation in the field of chemistry.

### **Action Guidelines**

Employees and officers of the Tosoh Group have established the following action guidelines to serve as the basis for putting into practice the company's environment, safety and health principles.

#### **1. Environmental Protection**

Aim to maximize the effective use of resources through energy conservation, resource conservation, and the 3Rs—reduce, reuse, and recycle—and to minimize the environmental impact of our business activities and help create a recycling-oriented society.

Promote community-based environmental protection activities on the recognition that the conservation of biodiversity leads to the sustainable development of society.

#### **2. People and Plant Safety and Health**

Always recognize that "safety takes precedence over everything else."

Strive to comprehensively and quantitatively identify and reduce risks in order to eliminate accidents and disasters and ensure stable operations.

Strengthen the emergency response system, including for natural disasters.

#### **3. Chemical and Product Safety**

Strive to obtain accurate information on all chemical substances handled in research, development, and production, including new products, and ensure appropriate management.

Place the highest priority on environmental protection and ensuring safety and health in the provision of products and services.

Strive to heighten customer satisfaction through quality control and safety in logistics.

#### **4. Communication**

Proactively promote communication with stakeholders through information sharing and dialogue.

### **Basic Policies for RC Activities**

FY2021 Key Basic Policies:

- New Resolutions for a New Era
- Aiming for Sustainable Growth
- Tosoh Group Activities

FY2022 Core Policy:

- Turning the "New Normal" into an Opportunity for Improvement
- Tosoh Group RC Activities with new structure, creativity, and determination

### **What is Responsible Care?**

Responsible Care is a voluntary initiative by chemical companies to ensure environment protection, safety, and health in all processes, from development and manufacture to distribution, use or consumption, through recycling or disposal, as well as to publicize the results and engage in social dialogue. Tosoh Group RC activities are not limited to compliance

with the law, but also cover environmental protection, safety and disaster prevention, occupational safety and health, chemical and product safety, quality assurance, logistics safety, and voluntary dialogue to earn the trust of society.

The International Council of Chemical Associations published the Responsible Care Global Charter in 2006 (revised in 2014). Tosoh signed the Global Charter in February 2006 and the revised version in September 2014.

### RC Promotional Structure

We are working on the following system to promote RC activities.

#### Nanyo and Yokkaichi Complexes, Tokyo Research Center

- (1) The Environment, Safety & Quality Control team at the head office, which is the secretariat of the RC Committee, disseminates to business sites company-wide policy decided by the RC Committee.
- (2) The complexes create policies based on company-wide information and disseminate them at committee meetings.
- (3) Activities of each department are audited internally at the complexes.
- (4) The RC Committee audits activities of the complexes and identifies issues.
- (5) The RC Committee deliberates and decides on policies and initiatives for the next year based on the issues identified.

#### Group Companies

- (1) Environment, Safety and Quality Control at the head office, which is the secretariat of the RC Committee, disseminates company-wide policy decided by the RC Committee to all Group companies.
- (2) The RC Committee confirms the status of activities at each Group company through safety and environmental inspections.
- (3) The RC Committee deliberates and decides on policies and initiatives for the next year based on issues identified through discussions during the inspections.

## Safe and Stable Operations

### Basic Concept

The Tosoh Group undertakes activities related to safety and stable operations under its RC promotional system, based on the *Action Plan for Industrial Safety* set by the Japan Petrochemical Industry Association in July 2013. Recognizing that ensuring employees' safety and health and stable manufacturing operations are the most important management issues, we aim to achieve a zero-incidence rate for accidents, including occupational accidents requiring time off work. Our activities are based on our fundamental principles and action guidelines for the environment, safety and health, which state that "safety takes precedence over everything else." In addition, we continue to develop a variety of measures for strengthening the safety infrastructure and fostering a culture of safety. We are also working on a business continuity plan (BCP) to prepare for natural disasters and other business risks.

### Fiscal Year 2021 Results

In fiscal 2021, there were six accidents at Tosoh. In such cases, the Accident Countermeasures Committee investigates the cause, decides on countermeasures, and holds briefing sessions within the company and at Group companies to spread pertinent information and prevent the occurrence of accidents.

### Initiatives to Ensure Safety

#### *President's Control Room Visits*

Since fiscal 2013, the president of Tosoh has visited the manufacturing sites of the Nanyo and Yokkaichi Complexes every year. This has led to the sharing of the management's ideas on safety with the employees and the enhancement of the employees' motivation.

The president visited a total of 245 control rooms and offices over the eight-year period from 2012 to 2019, interacting with a total of more than 5,500 employees. The visit scheduled for fiscal 2021 was canceled due to the COVID-19 pandemic.

#### *Education and Training Upgrades*

To achieve safe, stable, and efficient plant operations, the Tosoh Group, in cooperation with related departments, provides a variety of training programs that reflect the voice of employees.



Technical education includes hands-on hazard prediction training and virtual reality hazard simulation training, using simulators and hands-on learning devices.<sup>1, 2</sup> In fiscal 2021, we introduced three units of practical training equipment to further enhance hazard prediction training. We are striving to further improve our education and training program related to safe and stable operations and improve our on-site capabilities.

We also invite outside instructors to conduct hazard prediction and follow-up training to better anticipate and predict hazards and ensure safety.<sup>3</sup> In addition, hazard prediction training is shared with subcontractors to foster safety awareness throughout the complex.<sup>4</sup>

<sup>1</sup> Equipment that allows users to experience firsthand the hazards of the workplace, such as being caught in a pincer, being caught in machinery, falling, being covered with liquid, and static electricity.

<sup>2</sup> This facility allows visitors to experience the principles and characteristics of a distillation column—part of the basic operation of a chemical plant—and to learn how to start and stop a distillation column and respond to abnormalities.

<sup>3</sup> Hazard prediction training. Before taking action, small groups discuss the risk factors and phenomena that may occur during work, and recognize the points of risk and priority items for implementation.

<sup>4</sup> Hazard prediction training includes follow-up training by external trainers.

### Disaster Preparedness Training

Tosoh conducts disaster drills at each of its offices, laboratories, headquarters, and branch offices to raise employee awareness of the importance of disaster prevention and to equip them with the ability to respond to emergencies. We conduct emergency shutdown, initial fire hose extension and water discharge, and protective equipment application drills at each complex on a regular basis in accordance with procedures to improve on-site response and prepare for emergencies.

In addition, as a public relations measure in the event of an accident, we have established a system based on a manual for residents published by the City of Shunan. In addition, as part of our response to local communities in an emergency, we have prepared a booklet that outlines measures and precautions to take in the event an emergency arises.

### Earthquake and Tsunami Countermeasures

In addition to evacuation and other response drills, we are also working on equipment handling. As earthquake countermeasures, we completed seismic reinforcement work on high-pressure gas storage tanks at the Nanyo and Yokkaichi Complexes in fiscal 2021. We are also reinforcing control rooms and offices where employees are stationed.

In terms of tsunami countermeasures, we are installing raised floor-type electrical equipment and on-site display of flood levels.

### BCP Initiatives

BCP is an action plan for sustaining business as long as possible in the event of a disaster, accident, or other unforeseen event. BCP also ensures the quickest possible recovery and resumption of business following an interruption.

Tosoh's first priority is to ensure the physical safety of employees under such circumstances, including widespread contingencies like the COVID-19 pandemic. To ensure a stable supply of products to our customers, we are optimizing inventory and promoting purchasing from multiple sources, and are also reviewing and improving our disaster countermeasure regulations. In addition, due to our global business expansion, there are more opportunities for our employees to travel and be posted overseas. This increases the vulnerability of employees to global events such as wars, earthquakes, terrorism, riots, and infectious diseases. We are therefore implementing overseas crisis management measures to ensure the safety and well-being of our employees.

### Accident Case Study Research

To prevent the recurrence of accidents and problems, it is important to investigate the causes based on principles, and to develop and implement countermeasures that are permanent rather than temporary.

To uncover the root cause of problems, Tosoh looks into why a problem occurred and conducts detailed examination and analysis of accident cases. In addition, we operate an accident and disaster information database to centrally manage accident cases. This facilitates our sharing of information and utilization of case studies for educational and training purposes.

### Accident Remembrance

As a valuable reminder of the November 2011 explosion and fire at our No. 2 Vinyl Chloride Monomer Plant at the Nanyo Complex, we have erected the Safety Pledge monument and display documents related to the accident.

In addition, we have designated November 13 as Safety Day. On that day, we invite experts to address employees and host meetings and activities related to safety at the Nanyo and Yokkaichi Complexes.

Through these activities, we hope to instill in all our employees the determination to promote and ensure company safety.

### Activation of Digital Transformation

We are proactively introducing digital transformation (DX) and using it to ensure plant safety and stable operations. We are also establishing a systematic training program to quickly develop human resources such as data scientists familiar with digital technology, which is essential for promoting DX.

- a monitoring system for shared use by complexes;
- an operational support system;
- an abnormalities detection system;
- digitalized daily operational handover logs;
- telecommunications tablets for on-site use;
- an instrumentation diagnostic, smart valve system;
- wireless gas detectors;
- wireless vibration and temperature sensors;
- drones; and
- a gas turbine energy management system.

### Preventive Maintenance Efforts

To improve the soundness of our facilities, we have invested approximately ¥21 billion since fiscal 2015 to promote enhancement measures. The effects of these efforts are evident in the reduction of accidents and problems at our facilities. Moreover, from fiscal 2019 we launched a new initiative to strengthen construction systems and are taking measures against accidents and occupational hazards involving subcontractors.

In fiscal 2021, with the aim of reducing accidents and occupational hazards, we created a mechanism for verifying and confirming the presence of problems in the construction management system, based on past accidents. Furthermore, we implemented improvements by correcting any inadequacies. Going forward, we will verify the effectiveness of this initiative and make continuous improvements.

At the Nanyo and Yokkaichi Complexes, the computerization of entrances and exits has made it possible to keep track of the flow of employees and subcontractors going in and out of the facilities. This also enables us to observe any rule violations and implement countermeasures accordingly.

### Safety Technology Initiatives

To further improve safety, we established the Safety Technology team in the Technology Center in June 2020 as a company-wide organization. We are working to introduce up-to-date technologies based mainly on safety engineering.

- Advanced and comprehensive risk assessment

- Training of safety experts (process safety engineers)
- Promotion of safety equipment verification
- Operational support using machine learning and other methods
- Analysis of equipment materials for corrosion and other diagnoses
- Chemical and engineering technology education using practical training facilities
- Support for analysis of serious problems

## Response to Climate Change

### Basic Concept

In October 2020, the Japanese government declared its intention to achieve a decarbonized society by 2050.

Energy-derived CO<sub>2</sub> accounts for the majority of Tosoh's greenhouse gas (GHG) emissions. Tosoh has been actively investing in energy conservation ahead of schedule and working vigorously to reduce these emissions. Tosoh will promptly implement various measures toward a decarbonized society, taking into account trends in Japan's energy policy, the policies of industry associations, technological innovation, and the distribution of CO<sub>2</sub>-free fuels.

### CO<sub>2</sub> Reduction Promotion System

Tosoh's climate change initiatives are being promoted mainly by its CO<sub>2</sub> Reduction and Effective Use Promotion Committee and its Central Energy Management Committee.

We are also collecting information on social trends, regulatory requirements, and risk management related to climate change, and sharing this information with Tosoh Group companies. Matters related to these activities are reported to the respective board of directors for approval as appropriate, and instructions are received as necessary.

### CO<sub>2</sub> Reduction and Effective Use Promotion Committee

The committee is chaired by the overseeing Tosoh director, who is responsible for identifying issues, formulating policies, conducting investigations and analyses, and managing progress with regard to the reduction of energy-derived GHG emissions. This includes shifting to alternative fuels and effective utilization of CO<sub>2</sub> through recovery and conversion to raw materials. These efforts actively promote the reduction and effective utilization of energy-derived CO<sub>2</sub> emitted from the operation of in-house thermal power generation facilities.



In June 2021, the CO<sub>2</sub> Reduction and Effective Use Strategy team and the CO<sub>2</sub> Reduction and Effective Use Task Forces at the Nanyo and Yokkaichi Complexes were established to strengthen the system for promoting CO<sub>2</sub> reduction and effective use.

### Central Energy Management Committee

The committee, chaired by the general manager of production and technology planning, works to reduce overall energy consumption. This includes improvements in energy consumption in production and transportation, and the promotion of alternative energy sources. Specifically, the committee discusses and determines energy management policies, midterm and annual plans, compliance status and evaluation methods, and matters related to energy management.

### CSR Advancement Liaison Meeting

The Tosoh CSR Advancement team serves as the secretariat of the CO<sub>2</sub> Reduction and Effective Use Promotion Committee and the Central Energy Management Committee. Through the CSR Advancement Liaison Meeting, it shares information on climate-related social trends and exchanges opinions with the aforementioned committees on the compilation of Group-wide GHG emissions.

### Reduction Targets

Tosoh is participating in the Low Carbon Society Action Plan of the Japan Chemical Industry Association (JCIA). In March 2019, the JCIA reviewed the CO<sub>2</sub> emission reduction targets for the Japanese chemical industry. Taking advantage of this opportunity, Tosoh has set a target of reducing energy-derived CO<sub>2</sub> emissions by 6% from business as usual (BAU: production x base year 2014 CO<sub>2</sub> basic unit) emissions by fiscal year 2026.

In addition, Tosoh utilizes an internal carbon pricing system to promote capital investment that contributes to energy conservation.

### Fiscal Year 2021 Results

#### Greenhouse Gas Emissions

Tosoh's GHG emissions in fiscal year 2021 totaled 7,484 kilotons-CO<sub>2</sub>e, a decrease of 153 kilotons-CO<sub>2</sub>e compared with fiscal year 2020.

We are ahead of schedule in reducing our energy-derived CO<sub>2</sub> emissions, as we are furthering our capital investment in fuel conversion and energy conservation as planned.

The Tosoh Group's GHG emissions decreased by 2.0% compared with fiscal 2020.

<sup>2</sup> Greenhouse gas emissions are calculated using Japan's Mandatory Greenhouse Gas Accounting and Reporting System. Data for fiscal 2018 does not include emissions from the former Tosoh F-Tech, Inc. Data until fiscal 2018 was for N<sub>2</sub>O only. Data for fiscal 2019 onward represents the total of N<sub>2</sub>O, CH<sub>4</sub>, SF<sub>6</sub>, and HFC emissions.

### Greenhouse Gas Emissions by Scope

To ascertain greenhouse gas emissions across the entire Tosoh Group supply chain, we calculate the scope of the emissions.

(kilotons-CO <sub>2</sub> e)	Fiscal 2018	Fiscal 2019	Fiscal 2020	Fiscal 2021
Scope 1	7,705	7,833	7,770	7,628
Scope 2	438	403	424	402
Scope 3	6,020	5,923	6,944	6,638

Scope 1: Direct emissions from fuel combustion and plant operation by Tosoh.

Scope 2: Indirect emissions from electricity and heat supplied by other companies.

Scope 3: Other indirect emissions including from excavation and transportation of raw materials and fuels, transport in general, use and disposal of products, and employee commuting and business trips.

Scope 3 emissions figures for fiscal years 2018 through 2020 have been revised as a result of a review of the accounting methods used. For calculation methods and emission factors, please refer to the Ministry of the Environment's Database for Calculating Greenhouse Gas Emissions, etc. by Organizations Throughout the Supply Chain. The results were produced by ver 2.6 through fiscal 2019, by ver 3.0 in fiscal 2020, and by ver 3.1 in fiscal 2021.

### Energy Consumption Index

Tosoh's energy intensity index for fiscal 2021 was 98.2% compared with fiscal 2010. This marked an increase of 1.8 percentage points from fiscal 2020 due to a decline in energy efficiency attributable to factors including a decrease in production volume.

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

In fiscal 2021, Tosoh's logistics CO<sub>2</sub> emissions dropped 6.2% compared to fiscal 2020, mainly due to a decrease in energy consumption caused by lower transportation volume. The logistics basic energy unit—energy consumption converted to crude oil (kiloliter) / transport tonne-kilometers (one million tonne-kilometers)—was 18.6, the same as in fiscal 2020.

To reduce CO<sub>2</sub> emissions, we are continuously promoting energy efficiency through a modal shift in transport that sees us promoting marine and rail transport and improving transportation fuel efficiency. Tosoh Logistics Corporation, a Group company, completed renovation of its ethylene carrier, the *Shoyo*, in December 2020. The ship has been designed to be environmentally friendly, with an optimized hull, the Eco-Stator—a rectifying plate that improves propeller efficiency—and friction resistance-reducing paints to improve propulsion performance. The vessel also features an electronic charting system with Track Control, an automatic course maintenance system to achieve optimal navigation and fuel consumption.

### Investment in Energy-Saving Equipment

One of the basic policies of Tosoh's medium-term business plan is to promote energy conservation and the effective use of CO<sub>2</sub>. The company invests tirelessly in energy conservation as a social responsibility.

- Energy-saving modifications of caustic soda electrolyzers (Nanyo, Yokkaichi)
- Installation of gas turbine, improvement of efficiency of naphtha cracking furnace, and introduction of advanced control system for ethylene plant (Yokkaichi)
- Installation of state-of-the-art turbines and rotors in private power generation facilities and introduction of an optimal load balance system in power plants (Nanyo)

### Active Use of Biofuels in Production Activities

The thermal power generation facilities at Tosoh's Nanyo Complex are switching to biofuels as an alternative to coal. In fiscal year 2021, the use of biofuels led to a reduction of approximately 36,000 tons of CO<sub>2</sub> emissions. Starting in fiscal 2021, we are sequentially investing in equipment to further increase usage volume.

### Information Disclosure Based on Task Force on Climate-Related Financial Disclosures (TCFD) Recommendations

In November 2019, Tosoh announced its support of the recommendations of the TCFD.<sup>1</sup> The TCFD was established by the Financial Stability Board to provide a framework for information disclosure useful for companies to understand climate-related corporate risks and opportunities. Going forward, the Tosoh Group will disclose information on the Group's initiatives in line with the recommendations.

<sup>1</sup> In June 2017, the TCFD published recommendations related to items of information disclosure.

### Governance

The Tosoh Group recognizes that contributing to the resolution of various social issues, including climate-related problems, through its business activities is important for the sustainable growth of the Group. As such, it promotes business activities that place CSR at the core of management.

The CSR Committee, chaired by the president of Tosoh Corporation, deliberates on important matters related to the CSR activities of the Tosoh Group. Resolutions of the CSR Committee are reported to the board of directors for approval and direction. In addition, the CO<sub>2</sub> Reduction and Effective Use Promotion Committee is responsible for formulating specific policies and strategies for reducing GHG emissions.

(See page 36: Response to Climate Change)

### Strategy

The CO<sub>2</sub> Reduction and Effective Use Promotion Committee is responsible for planning strategies, identifying issues, formulating policies, conducting investigations and analyses, and managing progress in relation to the reduction of energy-derived indicators and target CO<sub>2</sub> emissions, as well as the effective use of CO<sub>2</sub> as a raw material for chemical products.

Tosoh has a high-efficiency cogeneration in-house thermal power generation facility to secure the stable supply of electricity at low cost, which is required in the manufacture of chemical products. In the future, when carbon taxes and emission trading systems are introduced, we will have to bear new costs. For example, if the carbon price of \$100/t-CO<sub>2</sub> is applied and we purchase emission credits equivalent to 100,000 tons of CO<sub>2</sub>, we will incur costs of about ¥1 billion.

To acquire opportunities, we have started to evaluate the environmental contribution of existing products, and will work to expand sales in response to the growing market for products and services that reduce environmental impact. We have set environment and energy as a priority area for R&D and are working to create products and services that meet market needs and social issues related to climate change.

## Risk Management

Potential risks posed by climate-related issues are assessed by each division in charge through the CSR Committee, using information on social trends and the status of consultations and discussions with the Japanese government. Each division managing risks related to business operations identifies risks related to the division and assesses the possible financial impact, and reports to the president. Risk management in daily business activities is carried out independently under the supervision of the director in charge, who consults the board of directors for approval and instructions when necessary. In addition, Tosoh uses an internal carbon price system when formulating capital investment plans, considering not only profitability but also environmental impact.

Climate-related risks are also listed as a key CSR issue, and the CSR Committee reports progress to the board of directors for plan-do-check-action (PDCA) management.

## Indicators and Targets

Energy-derived CO<sub>2</sub> emission reduction target

6% reduction in BAU emissions by fiscal 2026 (compared with fiscal 2014)

*Actual GHG emissions in fiscal 2021 (kilotons-CO<sub>2</sub>e)*

Scope 1 7,628

Scope 2 402

Scope 3 6,638

## Quality Management

### Basic Concept

The Tosoh Group works to improve customer satisfaction by providing products and services that reflect customer needs in a timely and stable manner through comprehensive quality control and assured distribution. We also continuously improve quality while complying with all product-related legal and regulatory requirements.

## Quality Management System

The Tosoh Group has established a quality management system (QMS) appropriate for its products and organizational structure. It has acquired ISO 9001, ISO 13485, and other certifications, in an effort to improve product quality and customer satisfaction.

Certified complexes and Group companies are subject to internal audits of their activities related to the QMS. This is followed by external audits and management reviews by senior general managers of the complexes and plants to improve the QMS.

## Management System Maintenance and Improvement

### Internal Audits

Tosoh conducts internal audits annually to make sure the QMS is functioning properly with the aim of constantly improving its operations. Tosoh audited 50 of its departments in fiscal 2021, with themes such as confirmation of the process for receiving raw materials and prevention of foreign matter contamination. It also audited the Nanyo and Yokkaichi Complexes to reduce product complaints, strengthen supply chain management, and confirm quality control methods.

### Group Company Support

Parent company Tosoh Corporation supports the quality management of its Group companies and provides opportunities for regular exchange of opinions. Tosoh strives to maintain and improve the quality level of the entire Group by providing advice to suppliers on conducting audits and supporting the strengthening of quality assurance systems.

In fiscal 2021, we conducted a voluntary survey of 24 companies regarding their quality control systems. The Tosoh Group did not find any violations of laws or regulations or any cases that could impact the environment or product safety when used by end users.

### Supply Chain Initiatives

The Tosoh Group also conducts audits of its major suppliers and manufacturing contractors to confirm the efficacy of their quality management systems.

In fiscal 2021, we conducted online and paper document audits of a total of 114 suppliers and production contractors, and are currently working to resolve issues and problems detected.

## Product Quality Improvement

In fiscal 2021, we followed up on measures to prevent recurrence of nonconformities that occurred in the past, and confirmed the implementation status of measures against foreign matter contamination based on risk assessment, including procedures. The number of product complaints decreased to 10. No product liability incidents or violations of quality-related laws and regulations were discovered.

In the area of medical products and devices, we conduct audits of manufacturers to strengthen our quality assurance system. We carried out audits at six manufacturing facilities in fiscal 2021.

## Logistics Quality Improvement

Since some of our products contain hazardous or poisonous substances, which are regulated by law, it is important to manage them from the time they are loaded through transit and delivery at their destination. To this end, logistics plays a central role with the goal of reducing the incidence rate of logistics-related accidents, complaints, and problems. We calculate our incidence rate as follows: *number of logistics accidents, complaints, and problems / number of products transported x 1 million*.

## Occupational Safety and Health

### Basic Concept

The Tosoh Group is working to ensure the safety of people involved in the Group's business activities with the aim of achieving zero lost work time injuries. Eliminating unstable conditions and unsafe behavior that can lead to occupational accidents means doing the following five things: educating people on basic safety behavior, assessing risks comprehensively, avoiding repeat accidents and work-related injuries, strengthening preventive maintenance, and utilizing increasingly safe new technologies.

### Fiscal Year 2021 Results

Tosoh has set a target of zero lost work time injuries among employees and subcontractors, but in fiscal 2021, eight lost work time accidents occurred (eight people were injured). As a measure to prevent recurrence, we hold safety and health committee meetings at the Nanyo and Yokkaichi Complexes to share and disseminate information on occupational hazards and

accidents. We will continue to reconfirm work procedures, implement hazard prediction training, and improve facilities.

In addition, 25 lost work time injuries involving 25 persons occurred at Group companies in fiscal 2021. We are striving to prevent recurrence by sharing information on accidents and occupational injuries in a database and using external safety experts from the Japan Industrial Safety & Health Association to provide guidance.

The current target was established with the approval of the board of directors in March 2019, and is expected to be achieved in fiscal 2024 ahead of schedule. This anticipated success is attributable to investments in energy conservation and process improvements.

Taking into account the government's new Nationally Determined Contribution for carbon neutrality in 2050, we will consider new targets and measures for fiscal 2031.

## 5S Activities and RC Committee 5S Inspections

Tosoh's Nanyo and Yokkaichi Complexes and research facilities participate in the 5Ss—sort, set in order, shine, standardize, and sustain. This keeps work environments clean and orderly and makes it easy to detect irregularities in our complexes and equipment.

In its comprehensive patrol implementation guidelines, the Yokkaichi Complex has revised the prioritization of findings such as correction and improvement.

In addition, the RC Committee chairperson conducts 5S inspections based on the policy that it is important for management to evaluate safety measures in the field and identify issues that need to be improved to maximize safety.

## Hazard Prediction Activities

The Tosoh Group's complexes and research facilities work independently to establish hazard prediction training.

The Nanyo Complex has instituted a practical hazard prediction program to compile information on sources of danger accumulated through hazard prediction training. Meanwhile, the Yokkaichi Complex has prepared a rulebook on safety behavior—*Tips for On-Site Work*—and implemented an education program on hazard prediction for young employees. The Tokyo Research Center is working to establish *One-Person Hazard Prediction*, an activity conducted by individual workers as they prepare to start work at their complex.



## Enhancing Risk Assessment

To make risk assessment more comprehensive, we are revalidating our security equipment by focusing on the multiple layers of protection proposed by Professor Emeritus Kimihide Matsuyama of Kyushu University.

The Nanyo Complex conducts verification in accordance with its own Verification Guidelines for Safety Equipment. In the verification process, the Safety Technology Office educates and instructs the manufacturing division on fault tree analysis (FTA), a method for analyzing the causes of product failures and subsequent accidents, for the purpose of evaluating failures, malfunctions, and mishandling. The Yokkaichi Complex is planning to implement safety and disaster prevention assessment from a technological perspective, which includes the verification of equipment.

### Tosoh Group Initiatives

To strengthen its capabilities in disaster prevention and occupational safety and health, the Tosoh Group established the Tosoh Group Safe Work Environment Network, which improves our ability to share amendments to legislation, data on accidents, and other relevant information.

The Tosoh Group also holds Safe Work Environment Network Meetings, which bring together safety and health management representatives from Group companies for the purpose of information exchange and interaction.

In fiscal 2021, we held two environmental education sessions using written documents and the Internet, and also conducted environmental education led by external trainers. We conducted four other sessions on occupational safety and health education with external instructors. Lastly, we continued to enhance guidance by enlisting the aid of a third party to offer on-site advice that provided us with a fresh perspective on safety and health.

## Chemical Substance Management

### Basic Concept

To ensure that customers can use our products safely and with peace of mind, the Tosoh Group ascertains accurate information on chemical substances and provides information on the chemical content of its products. Tosoh collects information and shares the latest updates with its complexes, related departments, and Group companies through e-mails, briefings, and educational programs to ensure compliance with Japanese and foreign laws and regulations related to chemical substances.

## Enhanced Chemical Substance Management

The 2002 World Summit on Sustainable Development (WSSD) stated its goal as “aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment.” Countries around the world are enacting or amending laws and regulations toward achieving this goal, requiring chemical manufacturers to manage chemical substances more thoroughly across their supply chains.

In accordance with common global targets set for 2021 and beyond, Tosoh continues to collect information on the enactment and revision of laws and regulations, take appropriate measures, and provide customers with information on chemical substances contained in products. Furthermore, we strive to strengthen chemical substance management and minimize risks throughout the supply chain.

### Chemical Substance Management System

In 2016, Tosoh introduced a chemical substance management system to centrally manage chemicals handled within the company and ensure compliance with international laws and regulations. This system involves the creation of a database of the chemical substances contained in each Tosoh product. The database enables us to search for applicable laws and regulations for the product as well as the chemical substances contained within. In addition, Tosoh has certificate-issuing authority for some of its products. As with the database, this allows a rapid response to customers who wish to know the chemical content of those products.

### Chemical Substance Risk Management

The JCIA promotes voluntary initiatives by chemical makers in Japan to strengthen chemical management. The initiatives include the Global Product Safety strategy and the Japan Initiative of Product Stewardship. The JCIA's focus is to publish safety summaries—summarized results of risk assessments of chemical products manufactured and sold by a company—for major products. When safety data sheets (SDS) describing the chemical content of products and related hazards are revised, the summaries are reviewed and updated accordingly.

### Safety Information Disclosure

The Tosoh Group prepares and provides SDS for all of its products, and has made some of these available on its website to help ensure the safe handling of the products.

Following the Japanese Industrial Standard revisions enacted by the government in May 2019, we are conducting necessary work to revise all SDS within a three-year grace period.

As for the labeling of products under Japan's Industrial Safety and Health Act, in addition to the products that already contain substances subject to labeling, we are gradually including products that contain hazardous substances.

### **Legal Compliance**

When a new product is released on the market, it has to be reported, registered, and quantified according to each country's laws and regulations. In fiscal 2021, Tosoh responded appropriately to changes in management methods for newly designated toxic and deleterious substances.

With regard to overseas laws and regulations, we continued to respond to formal registration of the revised K-REACH in South Korea, the country's Act on Registration and Evaluation, etc. of Chemical Substances. Tosoh also initiated compliance with UK-REACH, the United Kingdom's law on the registration and evaluation of chemical substances, which became necessary due to the UK's withdrawal from the European Union.

In fiscal 2021, there were no violations of laws and regulations related to the registration and notification of chemical substances.

### **Product Safety Audits**

In accordance with Japan's Product Liability Act, Tosoh Group employees in Japan work together to ensure product safety and provide appropriate product information. Our Product Safety Review Committee verifies the safety of raw materials and products and deliberates on laws and regulations at each stage from R&D to sales. In fiscal 2021, the committee met 102 times.

## **Environmental Protection**

### **Basic Concept**

Through its business activities, the Tosoh Group contributes to the development of a sustainable society in which the environment, economy, and society are in harmony, and strives to make effective use of resources to create a recycling-oriented society. We aim to minimize our environmental impact by properly managing air and water emissions, waste, and other important control items generated by our business activities.

The Tosoh Group reduces the environmental impact of its business activities throughout the lifecycle of its products. In manufacturing our products, we make effective use of the input of resources—or “inputs” such as fuel, raw materials, and water resources—and work to minimize waste “outputs” and the degree of our environmental impact on air and water.

### **Atmosphere Preservation**

Tosoh Group domestic companies monitor the concentration and amount of sulfur oxides (SO<sub>x</sub>), nitrogen oxides (NO<sub>x</sub>), dust, and other air pollutants emitted by each specific facility. We set voluntary control values that are stricter than those set by Japan's Air Pollution Control Act and those agreed upon with local governments. In fiscal 2021, those companies did not exceed any legal regulatory or agreed-to values.

For equipment that uses Tosoh's specified chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) as refrigerants, we are taking action based on environmental laws and regulations, such as Japan's Ozone Layer Protection Act, along with internal administrative guidelines and trends.

Additionally, in accordance with Japan's Fluorocarbons Emission Restraining Law, we report the calculated amount of leakage of CFC substitutes to the government in an appropriate manner. We set control targets and use detectors to isolate and repair leaks at an early stage to minimize leakage.

### **Water Preservation**

Tosoh and its Group companies in Japan use wastewater treatment facilities to remove pollutants and recover active ingredients from wastewater. We monitor emissions of chemical oxygen demand (COD), nitrogen, phosphorus, and other substances in accordance with voluntary control values that are stricter than those stipulated by the Water Pollution Control Law and agreements with municipalities. In fiscal 2021, there were no instances where water quality exceeded legal limits or agreed-upon values.

Water is an indispensable resource for the Tosoh Group. Each company in the Tosoh Group strives to make effective use of water input and to maintain and improve the quality of wastewater for the sustainable use of water resources around its manufacturing complexes.

### **Enrichment Through Education**

In addition to holding lectures by experts and municipal authorities in June, designated as Environment Month, the department in charge of environmental management at each



manufacturing complex provides on-site education and holds regular liaison meetings with the departments to report on accident cases and inform them of regulations. Group companies are briefed on violations of environmental laws and regulations as well as trends in amendments to environmental laws through the Tosoh Group Safe Work Environment Network.

### **Industrial Waste**

The Tosoh Group promotes the 3Rs—reduce, reuse, and recycle—through resource recycling and other measures. In accordance with the fourth target of Keidanren’s Voluntary Action Plan for Establishing a Sound Material-Cycle Society, Tosoh has set a target of reducing the volume of final waste disposal by approximately 70% compared to the actual volume in fiscal 2000. Tosoh’s final disposal volume in fiscal 2021 was 923 metric tons, well below the target of 1,000 metric tons.

Aware of their responsibilities as generators of waste, Group companies also manage and dispose of waste properly until it is delivered to a disposal company.

### **Status of Disposal of Equipment Containing PCB**

In accordance with Japan’s PCB Special Measures Law, Tosoh and its domestic Group companies are promoting the appropriate disposal of equipment containing PCBs. Tosoh completed disposal of transformers, capacitors, and other equipment containing high concentrations of PCBs by fiscal 2018. In fiscal 2021, we completed disposal of lighting ballasts and other equipment including those containing high concentrations of PCBs. Tosoh will dispose of approximately 50% of all equipment containing low-concentration PCBs by the end of fiscal 2022, and systematically dispose of the remaining equipment by fiscal 2027.

### **Emission Reduction Measures for Substances Subject to PRTR System**

Tosoh and its domestic Group companies are striving to reduce emissions of substances subject to Japan’s Pollutant Release and Transfer Register (PRTR) system by setting voluntary targets. The system is based on Japan’s Act for Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register), which governs materials that require movement and discharge quantity reporting.

Tosoh’s emissions in fiscal 2021 were 409 metric tons. This was below the target of 424 metric tons or less, a reduction of more than 30% from fiscal 2016. Total emissions by the domestic Group companies were 117 metric tons, a decrease of 16 metric tons from fiscal 2020.

## **Biodiversity Preservation**

### **Basic Concept**

The chemical products of the Tosoh Group can have a significant impact on ecosystems if they are not properly managed during the manufacturing process. The manufacture of chemical products uses energy, minerals, and water resources, which may have an impact on the entire supply chain. To realize a society in harmony with nature, the Tosoh Group proactively works to preserve biodiversity through our business activities and contributions to local communities.

### **Community Support and Participation**

The Tosoh Group conducts voluntary community-based environmental activities in each region to help promote and support biodiversity according to the action guidelines stated in its Basic Principles Regarding the Environment, Safety, and Health. In fiscal 2019, Tosoh participated in the Private Sector Engagement Partnership for Biodiversity, for which the Keidanren Committee on Nature Conservation serves as secretariat. In addition, Tosoh participated as a founder in the Japan Initiative for Marine Environment, which was established by five chemical industry organizations to solve the problem of marine plastic waste. We also signed the Declaration for Solving the Plastic Marine Debris Problem by The Japan Plastics Industry Federation.

### **Addressing the Plastic Problem**

Tosoh has positioned the promotion of material and chemical recycling as a contribution to society in the reduction of plastic waste. It is promoting the development of recycling technologies through joint research with universities and national research institutes, based on the progress of the circular economy.

As an example, we are participating in a project entitled *Developing Liquid-Phase Hybrid Recycling Technologies for Multilayer Plastic Films*, which was selected as a leading research project by the New Energy and Industrial Technology Development Organization (NEDO). We are aiming to develop recyclable plastics, and are at the same time actively promoting initiatives to reduce our environmental impact.

### **Cooperation with Local Authorities**

The Nanyo Complex has concluded an agreement with Shunan City in Yamaguchi Prefecture to effectively use branches pruned from trees on the roadside and around the city as woody biomass fuel. The agreement contributes to the effective use of limited resources and the

mitigation of global warming. In addition, Tosoh composts the pruned branches and fallen leaves at the Nanyo Complex and uses them to fertilize plants and promote green spaces.

### **Environmental Protection Activities**

The Tosoh Group is promoting community-based environmental protection activities to support the realization of a society in harmony with nature.

### **Satoyama Preservation Activities**

Tosoh's Nanyo and Yokkaichi Complexes are actively involved in local Satoyama Preservation Activities. Every year, the Nanyo Complex participates in the Forestation for Water Conservation Promotion Project organized by Yamaguchi Prefecture, while the Yokkaichi Complex holds Satoyama Preservation Activities organized by the Yokkaichi Nature Conservation Promotion Committee. Although major activities in fiscal 2021 were canceled due to the COVID-19 pandemic, we will continue to promote Satoyama Preservation Activities to maintain the ecosystem.

### **Community Volunteer Cleanup**

Tosoh cleans up areas around its offices as well as beaches and rivers.

At the Yokkaichi Complex, the Kasumigaura Regional Environmental Promotion Association (KIEP'S) was established in 2009 by 31 companies and organizations located in the Kasumigaura area of Yokkaichi City, and continues today to conduct environmental volunteer activities. An example is KIEP'S support for the Mie Prefecture-sponsored Ise Bay Forest, River, and Sea Cleanup Campaign to clean up nearby beaches.

From fiscal 2022, the Tosoh Labor Union will register with KIEP'S.

## **Creating a Comfortable Workplace**

### **Basic Concept**

Tosoh is actively promoting the realization of work-life balance by improving the workplace environment so that employees from diverse backgrounds can work harmoniously together.

### **Basic Philosophy of Personnel System**

- A creative organization that allows employees to maximize their capabilities
- A challenging culture employing a point-based system for thorough evaluation
- Fair treatment where those who work hard are truly rewarded

### **Work Style Reform**

Tosoh introduced work style reforms in April 2015. Reforms include reducing the total annual actual working hours and creating more comfortable workplaces.

Specifically, we are working on various measures to foster time awareness, enhance systems for creating a comfortable work environment, respond quickly to legal revisions, and promote operational efficiency throughout the company and in each workplace.

The Tosoh Group's goal is to establish a virtuous cycle which enhances the work environment and employee satisfaction and builds a strong corporate structure to underpin the sustainable growth of the Tosoh Group.

### **Work-Life Balance**

Tosoh is expanding its company regulations and creating a workplace culture that supports employees in balancing work and private life.

In terms of support systems for childbirth, childcare, and nursing care, we have established a variety of leave and absence systems as well as shorter working hours, making it easy for employees to take advantage of these systems.

In addition, to promote understanding not only among users of the systems but also among people around them, we have prepared a guidebook that explains how to use each system in an easy-to-understand manner.

Tosoh will continue to foster a workplace environment that recognizes and values diverse employee lifestyles and creates motivation and satisfaction among all employees.

### **Health Management**

Tosoh recognizes that the physical and mental health of its employees is the foundation for realizing its corporate philosophy and the Tosoh Group CSR Basic Policy. We are therefore actively undertaking health promotion activities so that our employees can realize their full

potential. Tosoh plans and implements unique activities at each manufacturing complex based on the three pillars of physical fitness, lifestyle, and mental health.

In fiscal 2021, we set company-wide numerical targets with fiscal 2025 as the year by which we would establish a system to implement the PDCA cycle for the purpose of further promoting health management. To achieve the target, we will support good health through health promotion activities, and maintain and promote a comfortable work environment.

## **Human Resource Development and Diversity and Respect for Human Rights**

### ***Basic Concept***

Based on our philosophy that "education is for developing the type of human resources envisioned by management and contribute to the self-realization of employees in the process," Tosoh has systematically established various educational and training programs to help employees fully develop their personal potential and qualities, cultivate the ability to think independently, and acquire knowledge and skills related to safe and stable operations.

In addition, in today's rapidly changing business environment, it is necessary for employees to envision their own future in order to respond to such changes. We believe that self-reliance and an independent spirit in our employees will lead to the growth of the company as well. To develop human resources who can think and act independently, we have recently formulated a basic policy for human resource development and reviewed our education system.

### **Basic Policy for Human Resource Development**

To develop self-reliant human resources who can envision what they want to be in response to changes in the business environment, and who have the motivation to learn and persevere to achieve their goals.

### ***Rank-Based Training***

The new education system, reviewed in fiscal 2020, is based on career education and aims to develop self-reliant human resources through continuous learning in the following four areas: basic education such as regulations and laws, acquisition of skills through self-development, learning through work experience and opportunities, and global human resource development.

All lectures and group activities for new employee training in fiscal 2021 were conducted online due to the COVID-19 pandemic, and in lieu of group training for all levels of employees, we had participants submit assignments while we distributed lecture materials.

### ***Technical Education***

By acquiring the basic knowledge and skills necessary to work safely in chemical plants and improving sensitivity to hazard prediction through hands-on training, our employees develop the ability to think and act on their own to ensure safe and stable operations.

In addition, to raise the level of technical skill, employees in general technology-related occupations belonging to the manufacturing and facility management divisions are required to attend educational courses and acquire qualifications necessary for promotion to their respective positions.

### ***Support for Independent Learning***

Tosoh has established a distance-learning course program to help employees acquire the basic knowledge, general education, and skills necessary for their work, and to support independent learning. Employees can take the courses regardless of their work duties, and those who complete the courses receive a subsidy equivalent to 50%–80% of the course fees.

The company pays for all courses taken during childcare leave. These courses are used for self-development during leave and as preparation before returning to work.

### ***Support for Qualifications and Skill Testing***

The Tosoh Group supports employees taking examinations and courses to obtain certificates and licenses.

Employees who obtain qualifications and licenses designated by the company are informed through internal newsletters and are rewarded in five categories according to the level of difficulty.

### ***Global Human Resource Development***

We are working to strengthen the development of human resources necessary for the globalization of our business. We offer in-house TOEIC® examinations, online language

training for self-development, and correspondence courses to support language learning in English, Chinese, and Korean.

We also offer a study-abroad program for employees to improve their language and business skills. However, due to the COVID-19 pandemic, the program has been temporarily suspended since fiscal 2020.

## **Diversity**

### ***Basic Concept***

We believe that we must welcome and utilize a diversity of people and cultural values to continue to improve and generate corporate value. As such, we are working to promote diversity.

We respect diversity of people in terms of age, gender, race, nationality, religion, sexual orientation, gender identity, disabilities, and individual interests in accordance with the Tosoh Group Code of Conduct.

### ***Female Employees***

Tosoh places high priority on recruiting and employing women. We have hired a total of 93 women over the past three years, bringing the percentage of female employees in our workforce to 9.9%.

In addition, in accordance with our action plan based on Japan's Act on the Promotion of Women's Participation and Advancement in the Workplace, we are promoting the retention and advancement of female employees by expanding the hiring ratio and job scope and nurturing the development of female executives.

### ***People with Disabilities***

Tosoh believes that the employment of people with disabilities is essential in fulfilling its corporate social responsibility. Our workplaces employ people with auditory, visual, intellectual, and other physical and mental impairments, regardless of the degree of severity. When considering work assignments, we take into account each person's condition and likelihood for outpatient hospital care, adjust the volume and type of work to suit the individual, and teach work procedures in an easy-to-understand manner.

Since fiscal 2018, as part of our efforts to employ people with disabilities, we have supported their transition to employment in the Shunan area, which has led to the employment of seven

people by the end of March 2021. In addition, in fiscal 2020, we introduced a farm-based employment program for people with disabilities in the Tokyo area, and are working to create further employment opportunities. We also utilize Japanese employment and recruitment agencies to hire human resources for our needs and ensure that they play an active role in their respective workplaces.

Tosoh will continue to promote the hiring of people with disabilities while taking into consideration their suitability for the job.

### ***Reemployment of Mandatory Retirees***

An essential element of corporate sustainability is the effective succession of skills, knowledge, and experience accumulated over the years. Tosoh reemploys mandatory retirees to ensure that their skills, knowledge, and experience are passed on to younger generations of employees.

At the same time, we strive to encourage mandatory retirees to seek reemployment by offering restart leave and retirement gift money. This measure serves to promote the continued employment of personnel aged 60 and above.<sup>2, 3</sup>

<sup>2</sup> Employees will continue to receive 7 days of special leave within 1 month of the start of reemployment.

<sup>3</sup> Payment is based on the number of years of service after reemployment.

## **Foreign Employees**

As part of our overseas expansion measures, we are actively hiring foreign nationals.

## **Respect for Human Rights**

### ***Basic Concept***

The Tosoh Group adheres to the policy of unequivocal respect for human rights. We support the aims of the UN Universal Declaration of Human Rights, the ILO's Declaration on Fundamental Principles and Rights at Work, and the UN Guiding Principles on Business and Human Rights. We have also signed the UN Global Compact, enacted in April 2019, in support of its 10 principles across four areas.

The Tosoh Group Code of Conduct mandates respect for fundamental human rights. It ensures that all of our employees and management-level personnel are aware of the need to respect



the diversity of individuals and refrain from all forms of discrimination, human rights violations such as child labor and forced labor, human trafficking and slavery, and harassment.

### **Human Rights Education**

Using a system established by Human Resources and CSR Advancement, the company actively promotes human rights education through training for new employees and rank-based training. In fiscal 2021, we conducted online training and distributed materials to deepen understanding of the global concept of human rights, international standards, the responsibility and significance of companies to address human rights, and human rights issues in the supply chain. Specific reference is made to issues such as harassment, child labor, forced labor, human rights violations on social media, environmental destruction, labor practices, and foreign technical training programs. In addition, in the training for new employees conducted at the Nanyo Complex, we invite external lecturers from the Human Rights Promotion Department of Shunan City to discuss respect for human rights in general as well as human rights in the workplace.

### **Communication with Stakeholders**

#### **Basic Concept**

The Tosoh Group considers its major stakeholders to be shareholders, investors, customers, local communities, local governments, business partners, and employees. The company actively promotes CSR initiatives through its business activities on their behalf.

#### **Relationships with Stakeholders**

Underpinned by its corporate philosophy and CSR Basic Policy, the Tosoh Group provides value to its stakeholders through ESG initiatives, along with its products and services.

We understand the importance of constant communication with our stakeholders in earning and keeping the trust of society and ensuring corporate growth.

#### **Dialogue with Stakeholders**

Through our website, corporate reports, and other means, we provide information regarding our business activities to our stakeholders in a prompt and proper manner. By creating various opportunities for dialogue, we receive evaluations and opinions from our stakeholders, which are then reflected in our business activities.

### **CSR Supply Chain Management**

#### **Basic Concept**

As a global company, Tosoh is engaged in various business endeavors around the world, in the course of which it procures a large number of materials. In our procurement activities, we follow a basic policy that ensures fairness and impartiality, compliance with laws and regulations, and environmental protection.

In recent years, companies are also expected to contribute to the sustainable development of society by resolving various global social issues related to the environment, human rights and labor, and corporate ethics. To meet these expectations, Tosoh's efforts alone are not sufficient; it is essential that the entire supply chain work together.

In addition to enhancing the relationship of trust with our business partners, we have compiled CSR Procurement Guidelines to solve social issues in the supply chain and achieve sustainable procurement. We share these guidelines with our suppliers.

#### **Basic Procurement Policy**

##### **1. Ensuring fairness and impartiality**

In selecting suppliers, we work to ensure fairness and impartiality. We welcome a wide range of domestic and overseas companies and make decisions based on the criteria of economic rationality, such as price, quality, and supply stability.

##### **2. Complying with laws and regulations**

We comply with relevant domestic and international laws and regulations and social norms related to purchasing transactions.

##### **3. Managing information**

We maintain confidentiality in important matters and information obtained in transactions with our business partners and manage such information appropriately.

##### **4. Procuring for CSR**

To fulfill our CSR, we strive to procure products from suppliers who are committed to compliance with laws and regulations pertaining to environmental protection and safety, human rights, and the work environment.

### **CSR Procurement Guidelines**

1. Overall advancement of CSR
2. Fair trade and corporate ethics
3. Human rights and labor
4. Environmental protection
5. Quality and product safety
6. Social contribution

### **CSR Procurement Initiatives**

#### ***Supplier Evaluation***

We share our CSR Procurement Guidelines with our suppliers and ask them to understand our policies and activities related to CSR procurement and to comply with the guidelines.

A CSR self-assessment questionnaire (SAQ) was sent out in fiscal 2020 to 70 suppliers, 56 of whom replied, equivalent to 90% of the total amount of raw materials and fuel purchased by Purchasing & Logistics. Evaluation and analysis of the survey results were conducted in fiscal 2021. Of the responding companies, 71% were above the overall average; those that were below the average were requested to make further improvements. The results of the SAQ indicated there were no cases of human rights violations or environmental issues posing significant risk.

We will continue to strengthen cooperation with our suppliers and promote stable CSR procurement activities through dialogue.

#### ***Conflict Minerals Initiatives***

We are committed to the responsible sourcing of mineral resources. Conflict minerals are those used to fund armed groups, particularly those complicit in human rights violations in conflict zones. These include tantalum, tin, gold, and tungsten from the Democratic Republic of the Congo and neighboring countries. If we find that any of the minerals we use are related to conflict, we immediately stop using them as a supply source.

### **White Logistics Promotion Movement Participation**

In September 2019, Tosoh issued a Voluntary Action Declaration to show its support for Japan's White Logistics Movement.

White Logistics is a movement that aims to improve truck transportation productivity, increase logistical efficiency, and create a favorable working environment for women and elderly drivers. These measures help ensure the sustainability and stability of logistics, which are essential for people's daily lives and industrial activities, while helping solve the shortage of truck drivers that has worsened in recent years.

Tosoh has identified 10 items to be addressed. These include the use of pallets, the consolidation of delivery dates and destinations, the improvement of facilities on the shipper's side, the shift to alternative modes of transportation, and the promotion of joint logistics.



## Governance

### List of Directors and Auditors

#### Toshinori Yamamoto

##### Representative Director and President

Toshinori Yamamoto has worked in accounting, sales, purchasing and logistics, overseas business, and business planning and management. He was appointed to Tosoh's board of directors in June 2009 and to its presidency in March 2016. He has a wealth of knowledge about the Tosoh Group and its management and is therefore eminently qualified to make essential executive-level decisions and to supervise Tosoh Group's global operations toward maintaining sustainable growth and increasing corporate value.

#### Katsushi Tashiro

##### Representative Director and Senior Executive Vice President

Katsushi Tashiro worked in manufacturing, production engineering, and construction before becoming deputy general manager of the Yokkaichi Complex, among other posts. He was appointed a director in June 2013. He possesses a comprehensive understanding of the Tosoh Group's operations and management. As such, he contributes considerably to crucial decisions and the supervision of the Tosoh Group's operations toward sustainable growth and enhanced corporate value.

#### Mamoru Kuwada

##### Director and Executive Vice President

Mamoru Kuwada is experienced in manufacturing, production engineering, construction projects, and business and facilities management. He served as senior general manager of the Yokkaichi Complex prior to his appointment as a director in June 2020. His extensive knowledge of the Tosoh Group's operations and management serve him well in adding to important corporate decisions and in supervising the Tosoh Group's activities toward maintaining sustainable growth and increasing corporate value.

#### Toru Adachi

##### Director and Executive Vice President

Toru Adachi worked in accounting, finance, corporate planning, and business management. He was appointed to the Tosoh Group's Board of Directors in June 2020 following service as the general manager of Corporate Strategy. His wide-ranging knowledge of diverse aspects of Tosoh Group operations and insights into corporate management make his inclusion in vital decision-making as essential as his involvement in the supervision of Tosoh Group efforts toward achieving sustainable growth and increasing corporate value.

#### Toru Doi

##### Director and Executive Vice President

Toru Doi was involved in research before becoming the general manager of the Functional Polymers Research Laboratory and being named a director in June 2021. His wide-ranging experience in the area of research enables him to contribute significantly to the Tosoh Group's R&D efforts. He is therefore well equipped to contribute to important, executive-level decisions and the supervision of the Tosoh Group's activities toward achieving sustained growth and increased corporate value.

#### Tsutomu Abe

##### External Director

Tsutomu Abe was representative director and vice president of Mizuho Bank, Ltd., and president and CEO of IBJ Leasing Co., Ltd. (now Mizuho Leasing Co., Ltd.). He became a Tosoh Group external director in June 2015. Abe has a wealth of knowledge in finance, corporate management, and other fields which he brings to the table in helping to make decisions on matters of importance to the Tosoh Group. He also brings an objective perspective to his role as supervisor and adviser to management.

#### Keiichi Miura

##### External Director

Keiichi Miura was a director and senior executive officer of Taiheiyo Cement Corporation before becoming a Tosoh Group external director in June 2020. His knowledge of research and planning, corporate management, and other areas, along with his objective perspective, make him an ideal contributor to the Tosoh Group's decision-making and managerial oversight toward maintaining sustainable growth and increasing corporate value.

#### Yoshihiro Hombo

##### External Director

Yoshihiro Hombo's positions prior to being named a Tosoh Group external director in June 2020 included those of executive vice president and representative director of Mitsui & Co. Today, he is the president and chief operating officer of Valqua, Ltd. With his broad knowledge of sales, overseas operations, business management, corporate management, and other areas, he is well suited to advise and supervise Tosoh Group management from an objective perspective. As such, he greatly contributes to decisions toward sustaining growth and increasing corporate value.

**Mariko Hidaka**  
**External Director**

Mariko Hidaka is a certified public accountant and former senior partner at EY Ernst & Young ShinNihon LLC. She became a Tosoh Group external director in June 2020. She is widely knowledgeable in matters of accounting, auditing, corporate management, and other fields. With her objective perspective, she is an asset in advising and supervising Tosoh Group management in a manner that contributes to sustainable growth and increased corporate value.

**Auditors**

**Kouji Kawamoto**  
**Internal Auditor**

Kouji Kawamoto possesses experience in finance, accounting, information systems, and purchasing and logistics. He sat on the board of directors and served as an executive vice president of the Tosoh Group before being appointed to the Audit & Supervisory Board in June 2019. He is fully versed in finance and accounting and corporate management and is thus a major asset in ensuring the smooth functioning of the Tosoh Group from an objective standpoint.

**Makoto Okayama**  
**External Auditor**

Makoto Okayama served as deputy president and executive officer of Mizuho Trust & Banking Co., Ltd. and representative director of Japan Investor Solutions & Technologies Co., Ltd. prior to being named a Tosoh Group external auditor in June 2021. He brings with him an abundance of experience in various fields including finance and corporate management, which he puts to appropriate use in conducting neutral and fair audits of the execution of duties by directors.

**Tetsuya Teramoto**  
**External Auditor**

Tetsuya Teramoto was a director and then president and chief executive officer and finally chairman of the board of Eiken Chemical Co., Ltd. He became a Tosoh Group corporate auditor in June 2014. His insightful knowledge of corporate management and other matters enables him to fully and objectively audit all aspects of the performance of duties by Tosoh Group directors.

**Tsuneyasu Ozaki**  
**External Auditor**

Tsuneyasu Ozaki served as a public prosecutor before joining the Special Investigations Department of the Tokyo District Public Prosecutors Office in 1996. He registered as an attorney in 2005 and today heads the Fukuoka branch of the law firm Nishimura & Asahi LPC. His appointment to the Tosoh Group's Audit & Supervisory Board was made in June 2014. His extensive legal background makes him an astute auditor of all aspects of Tosoh Group directors' execution of their duties.

**Corporate Governance**

**Corporate Governance Structure**

**Board of Directors**

Met 15 times in fiscal 2021

As of June 30, 2021, Tosoh's Board of Directors consists of nine directors, including four external directors. In principle, the Board meets at least once a month.

Based on laws and regulations, the Articles of Incorporation, and the Board of Directors Regulations, the board of directors makes decisions on business planning, strategy, and other important management matters. It also oversees the performance of duties by each director and executive officer. In addition, the board makes decisions concerning appointments, dismissals, and division of duties for executive officers.

**Audit & Supervisory Board**

Met 15 times in fiscal 2021

As of June 30, 2021, Tosoh's Audit & Supervisory Board consists of four auditors, three of whom are external auditors. In principle, the Audit & Supervisory Board meets once a month. Members are familiar with corporate management or have considerable knowledge of legal affairs, finance and accounting, and meet to audit the execution of duties by directors.

The auditors attend meetings of the board of directors and other important meetings in accordance with the audit policy and division of duties determined by the Audit & Supervisory Board. They also receive reports from directors and employees on the status of the execution of their duties, request explanations when necessary, review documents relating to important decisions, and investigate the status of operations and assets at headquarters and major manufacturing complexes.

With regard to subsidiaries, we communicate and exchange information with directors and auditors of Tosoh Group companies, and receive reports on their operations as necessary. In addition, Tosoh has established a secretariat for the Audit & Supervisory Board, which has a complement of personnel dedicated to assisting and thereby enhancing the performance of the auditors.

### **Executive Board Meeting**

Met 30 times in fiscal 2021

As of June 30, 2021, Tosoh's Executive Board Meeting comprised four executive officers of the rank of managing director and above. In principle, the committee meets once a week to deliberate on matters to be discussed at board of directors' meetings and important matters related to the overall management of the Group. Tosoh's holding of an Executive Board Meeting ensures appropriate and efficient management decision-making.

### **Nomination and Compensation Advisory Committee**

Met 9 times in fiscal 2021

To strengthen corporate governance, Tosoh established the Nomination and Compensation Advisory Committee in June 2019 as an advisory body to the board of directors. The committee serves to ensure fair and transparent procedures regarding the nomination and compensation of directors, auditors, and executive officers. The ratio of external directors on the fiscal 2021 committee was 80%. The committee consists of the president and four external directors and is chaired by an external director.

Tosoh's activities for determining the amount of remuneration and other payments to directors during fiscal 2021 included five meetings of the board of directors and six meetings of the Nomination and Compensation Advisory Committee. The board of directors reviews the

remuneration system for directors, revises remuneration and other amounts for directors, introduces remuneration for restricted stock, and decides on the policy for determining individual remuneration for directors based on the report of the Nomination and Compensation Advisory Committee.

### **External Directors and Auditors**

Tosoh appoints independent external officers with exceptional experience and insight to oversee corporate governance. These external officers monitor the execution of company business from a neutral and objective point of view. Tosoh has established its proprietary Criteria for the Independence of External Directors and Corporate Auditors, and refers to these criteria when determining whether independence is ensured.

External officers attend meetings of the board of directors and other bodies and receive regular explanations and reports to carry out supervision and auditing.

### **Executive Officer System**

Tosoh introduced the Executive Officer System with the aim of separating management decision-making from supervisory and executive functions, thereby accelerating and streamlining decision-making. Clarification of the roles and responsibilities of business execution has made possible a management structure that can respond to rapid changes in the business environment.

As of June 30, 2021, there were 27 executive officers, five of whom were also serving as directors.

#### **1) CSR Committee**

Met twice in fiscal 2021

Chaired by the president of Tosoh Corporation, the committee consists of members of the Executive Board Meeting, the general managers of the management departments at Tosoh's headquarters, and the chairpersons of company-wide committees. The CSR Committee is responsible for formulating CSR activity policies and managing the progress of key CSR issues.

#### **2) Internal Control Committee**

Met 4 times in fiscal 2021

Chaired by an executive vice president of Tosoh Corporation, the Internal Control Committee works to respond to the internal control reporting system for financial reporting under the Financial Instruments and Exchange Act and the internal control system required by the

Companies Act. In addition, the committee regularly evaluates and amends the status of the development and operation of internal controls.

### 3) Compliance Committee

Met twice in fiscal 2021

Chaired by an executive vice president of Tosoh Corporation, the Compliance Committee is responsible for establishing the compliance system, formulating various measures such as education, and operating the internal reporting system. The committee also periodically evaluates and amends the status of the compliance promotion plan and the operation of the internal reporting system.

### 4) RC Committee

Met once in fiscal 2021

The RC Committee is chaired by the director in charge of the Environment, Safety & Quality Control department, and works to establish a system for promoting RC and formulate RC annual policies. The committee also conducts RC audits on a regular basis to understand the activities of each division.

### 5) Export Supervision Committee

Met once in fiscal 2021

Chaired by an executive vice president of Tosoh Corporation, the Export Supervision Committee is responsible for formulating various measures for compliance with the Foreign Exchange and Foreign Trade Act, the basic policy stipulated in security export control regulations. The head of the export department is assigned to also serve as the head of the operational business unit.

### 6) Fair Trade Compliance Committee

Met once in fiscal 2021

Chaired by an executive vice president of Tosoh Corporation, the Fair Trade Compliance Committee is responsible for establishing internal regulations and manuals regarding compliance with the Antimonopoly Act and the Act Against Delay in Payment of Subcontract Proceeds, etc. to Subcontractors, and formulating measures for implementation. The committee also reports and deliberates on specific cases related to compliance with the law and measures to deal with them.

### 7) CO<sub>2</sub> Reduction and Effective Use Promotion Committee

Met twice in fiscal 2021

Chaired by an executive vice president of Tosoh Corporation, the CO<sub>2</sub> Reduction and Effective Use Promotion Committee is responsible for planning and formulating policies on important issues related to CO<sub>2</sub> reduction and effective use from the perspectives of both technology and cost. In addition, the committee regularly reports and deliberates on specific issues related to planning and measures to deal with them.

## Corporate Governance

### Basic Concept

In order to continuously enhance corporate value, Tosoh strives to build an efficient organizational structure that can respond quickly to changes in the business environment and to conduct sound corporate management that is fair and highly transparent. While respecting the purpose and spirit of the Corporate Governance Code, we continuously seek the optimal form of corporate governance for Tosoh.

### Analysis and Evaluation of the Effectiveness of the Board of Directors

To improve the effectiveness of the board of directors as a whole, Tosoh conducts an analysis and evaluation every year and discloses a summary of the results.

#### 1. Evaluation method

The evaluation is conducted by requesting all directors and auditors to complete a questionnaire and provide opinions. The questionnaire consists of eight categories, including a new category concerning the discussion and exchange of opinions at board of directors' meetings. Other items include composition and operation of the board of directors, materials and information provided, monitoring and supervision, status of response to issues, others, and overall evaluation. The questionnaire comprises more than 12 questions, along with a five-point self-assessment system.

In addition, respondents can write their thoughts and opinions regarding the questions in the free opinion section. These, as well as suggestions for improvement, are used as elements for future efforts to improve effectiveness.



## 2. Summary of analysis and evaluation results

The overall result of the analysis and evaluation is that the board of directors as a whole is currently fulfilling its roles and responsibilities in an effective manner. The primary reasons the board of directors is evaluated as generally fulfilling its roles and responsibilities effectively are as follows:

- (1) The composition of the board of directors has been strengthened, including expertise by increasing the number of external directors and diversity by appointing female directors
- (2) Risk management, based on necessary and sufficient reporting and continued monitoring and supervision of business execution, has been appropriate
- (3) Management of the board of directors, including the frequency of meetings, scope of agenda, deliberation time, volume of materials, timing of distribution, and related matters, has been optimal

In addition, questions in the new category concerning discussion and exchange of opinions at board of directors' meetings asked whether such discussion and exchange of opinions are effectively conducted with regard to management strategy, business theory, and management plans, design and determination of the compensation system, and the status of dialogue with investors and analysts. While the responses indicate that a certain amount of discussion is taking place, there are also comments that call for further efforts for improvement, which will be reflected in future meetings of the board of directors.

Moreover, in light of changes in the environment surrounding companies and social demands on the board of directors, Tosoh asks respondents to write comments on themes that should be discussed at future board of directors' meetings in the free opinion column.

With regard to operation, the Board reviewed the method of seating briefers and question-and-answer session participants, such as the executive officer in charge, in order to further enhance deliberations. While the view is that this initiative has produced results to a certain extent, it was also noted that there is room for further improvement.

Tosoh will continue to work tirelessly to implement initiatives based on the results of our analysis and evaluation so as to contribute to sustainable growth and the enhancement of corporate value.

### Officer Compensation

#### 1. Policy for determining the method for calculating the amount of remuneration

The Tosoh Group's basic policy is to have a remuneration system that aims to continuously improve corporate performance and corporate value, and to secure excellent human resources.

The remuneration of directors is determined within the scope of the total amount of remuneration resolved at the General Meeting of Shareholders.

The date of the resolution of the General Meeting of Shareholders regarding remuneration and other amounts for directors of the company was June 25, 2021.

It was determined that the total amount of remuneration and other compensation for directors shall not exceed ¥670 million per year (this amount shall be (1) ¥620 million for cash remuneration, including ¥60 million or less for external directors, and (2) ¥50 million in stock-based compensation, not including employee salaries and bonuses for directors who also serve as employees). The number of directors at the time of the resolution was 12 or less.

#### 2. Policy for determining individual compensation for directors

The specific details related to the basic policy are as follows:

##### (1) Policy for determining the calculation method for the amount of fixed compensation

Fixed compensation shall be considered as compensation for the position and shall be determined for each position, taking into consideration the remuneration level in the results of the survey on management compensation compiled by an external organization.

##### (2) Details of performance indicators pertaining to and policy for determining the calculation method for the amount of performance-based compensation

The amount of performance-based compensation shall be determined for each position based on the ratio between the fixed compensation and the performance-based range, taking into consideration the remuneration level in the results of the survey on management compensation compiled by an external organization.

##### (3) Policy for determining the details and method for calculating the amount of non-monetary compensation (stock-based compensation)

Allocation of non-monetary compensation in the form of restricted stock shall be determined on a position-by-position basis, taking into account various factors such as the degree of contribution.

##### (4) Policy on determining the ratio of the amount of fixed compensation, performance-based compensation, and non-monetary compensation to the amount of individual compensation and other compensation of directors

The ratio of fixed compensation, performance-based compensation, and non-monetary compensation (stock-based compensation) to the amount of individual compensation shall be determined for each position, taking into consideration the level of remuneration and other compensation in the results of the evaluation of management remuneration compiled by an



external organization. In addition, from the perspective of their role and independence, external directors shall receive only fixed compensation.

#### **(5) Policy on determining time and conditions for granting remuneration and other compensation to directors**

Fixed compensation and performance-based compensation shall be paid monthly. Fixed compensation shall be paid monthly based on the current year's position, and performance-based compensation shall be paid monthly based on the previous year's performance as remuneration for the current year. As for non-monetary compensation in the form of stock-based compensation with restrictions on transfer, restricted shares shall be allocated annually in accordance with the allocation agreement. The restrictions on transfer shall be removed upon retirement.

#### **(6) Method for determining the details of individual remuneration and other compensation for directors other than the above**

Individual remuneration and other compensation for directors shall be determined by the board of directors based on the report of the Nomination and Compensation Advisory Committee, which mainly consists of independent external directors.

### **Message from External Directors**

#### **High Hopes for Leveraging Individuality in Developing New Fields**

##### **Tsutomu Abe External Director**

This is my seventh year as an external director, and during that time our company has achieved groundbreaking growth, not only in terms of finances, but also in many other areas. I would like to commend the management team and all employees for their efforts in overcoming various challenges and difficulties.

Our company is characterized by an extremely wide range of business domains, from Commodity fields such as petrochemicals to Specialty fields like bioscience. Naturally, the management team's understanding and management of these many independent businesses is more important than ever before. The promotion of dual management of commodities and specialties requires each of the various business units to secure their own product lines and independence while expanding communication across the organization and between

employees. The market environment is tough and there are always competitors. However, we have a large number of products and we believe that combining them allows us to leverage our individuality in developing new fields of business.

In 2020, the number of external directors was increased from two to four. The increase in the diversity of their backgrounds and experiences has led to more open and active discussions and heightened the effectiveness of the board of directors. In particular, the appointment of Tosoh's first female external director has resulted in more proposals from new perspectives, thereby deepening the discussions.

I will continue to capitalize on my past experience in support of the company's further growth.

#### **Continue Changing and Don't Rest on Past Successes**

##### **Yoshihiro Hombo External Director**

After my first year as an external director, I was surprised by the number of issues discussed at our company's board meetings and the breadth of the business domains on which they are based.

I feel that the board of directors is well aware of our business portfolio strategy, which hinges on the balance between the energy-intensive Commodity fields that support our current earnings and the Specialty fields such as bioscience, where high added value is our competitive edge. A diversified chemical manufacturer like Tosoh is always questioned about the state of the company as a whole, and I was frankly impressed by the sense of pride and stability of the company's good management from that perspective. I was also impressed by the well-balanced discussions on health and safety at the company's manufacturing complexes, medium- to long-term R&D policies, business reform with an awareness of changes in the global environment, and human resource development.

Over the past ten years, our business situation and financial structure have improved dramatically. Perhaps because of this, each of our business units seems to be brimming with confidence. That is why I dare to suggest that it is important not to simply accept the status quo. As the environment surrounding our company changes rapidly, we believe it is important for the management team to constantly ask themselves, "What is the purpose of our company and what kind of contribution does the world expect from us?"

Each of the external directors has a different background. Based on the discussions at the Executive Board Meeting, it would be my hope that the external directors can contribute to the betterment of our company's management by making proposals from their personal perspectives.

## **Strengthen R&D, the Driving Force Behind New Business Creation**

### **Keiichi Miura External Director**

In the fiscal 2020 Tosoh Report, I mentioned that our management team emphasizes R&D and is fully cognizant of the importance of nurturing technology. Our laboratories are collaborating efficiently with outside parties and steadily accumulating technologies in the three priority fields of electronic materials, life science, and environment and energy. In fact, with the COVID-19 pandemic, we have been developing and launching reagents in response to the spread of infection. Looking at it this way, you could say that our potential for growth is quite attractive. I expect this to be the driving force behind the creation of new businesses in the future.

Recently, Tosoh's Board of Directors decided to construct a new research building and customer support building at the Tokyo Research Center to accelerate future business expansion and technology development in Specialty fields. Research laboratories play a vital role in expanding business in the Specialty sector as much as or more than in the Commodity sector. As such, I believe it is appropriate to invest in the right management to create an environment conducive to achieving our R&D goals. The consensus of the board of directors is that they would like to see a continued explanation of the direction in which R&D will be strengthened by the new facilities.

Since there are many cases of intermittent growth in Specialty fields, we must have a strong financial structure and flexibly make decisions to respond to rapid changes. This will enable us to invest and execute M&As without missing opportunities. As an external director with a background in technology, I will provide advice that emphasizes these points and contributes to the enhancement of corporate value.

## **Prioritize CSR Issues such as Decarbonization and the Advancement of Women**

### **Hidaka Mariko External Director**

At the board of directors' meetings, not only were materials distributed in advance and carefully explained, but we were also made fully aware of the annual schedule and agenda.

For chemical manufacturers, environmental issues such as the realization of a decarbonized society and the plastic waste problem are very difficult topics. We have been implementing measures from a medium- to long-term perspective for some time now, with these activities having achieved some success. Given the recent increase in extreme weather events, however, I think we need to step up our efforts. In the organizational revision in June 2021, the CO<sub>2</sub> Reduction and Effective Use Strategy team was newly established under the CO<sub>2</sub> Reduction and Effective Use Promotion Committee. Task forces have also been set up at the

Nanyo and Yokkaichi Complexes. We are investing in energy conservation more aggressively than initially planned, and are prioritizing technological development and investing funds. We will continue to take on even more difficult challenges, including various reviews for the new medium-term management plan starting in fiscal 2022, for which I would like to provide continuous support.

With regard to the advancement of women, Tosoh has enhanced its human resource system in recent years leading to an increase in the number of women hired. On the other hand, I think that there is still room for improvement in terms of application and awareness in the workplace. We believe that a workplace where female employees play an active role is a good environment for all employees regardless of gender. I would like to do my small part to support the realization of such a workplace environment by interacting with employees.

## **Compliance and Cybersecurity**

### **Compliance**

#### ***Basic Concept***

The basic policy of the Tosoh Group is to ensure compliance, pursue profits through fair competition, and continue to be a useful entity for society at large.

The basis of the Group's compliance activities is for all employees and each and every officer to practice compliance sincerely, fairly, and ethically.

#### ***Tosoh Group Code of Conduct***

The Tosoh Group Code of Conduct prohibits all forms of corruption, respects human rights, and describes how to deal with important matters that must be observed in conducting business activities. Based on the acknowledgment by top management that compliance is the foundation of the Tosoh Group's management and should take precedence over all other interests, all employees and officers of the Tosoh Group are obliged to comply with the Tosoh Group Code of Conduct, which was revised in October 2018 to include additional CSR initiatives.

In addition to the Japanese, English, Chinese, and Korean versions, the Tosoh Group Code of Conduct has been translated into the languages of the respective regions in which the Group's overseas businesses are located. Pamphlets explaining the Tosoh Group Code of Conduct are distributed to all employees and officers of domestic Group companies.

### **Compliance Promotion System**

We believe that practicing compliance, which means following the established rules, not only protects employees from accidents and other disasters, but also strengthens the management structure of the entire Tosoh Group. To this end, we have established a promotion system to ensure that employees are aware of the importance of compliance and are able to practice it. The Compliance Committee reports the content of its deliberations to the board of directors.

### **Compliance Consultation Desks**

Tosoh has established compliance consultation desks to promptly recognize and respond to violations or potential violations and prevent or quickly correct compliance-related issues. Employees of Tosoh and its domestic Group companies, temporary employees, and employees of subcontractors can choose to report or consult with the internal, external, and corporate auditor consultation desks.

The desks provide consultations regarding violations of laws and regulations, harassment, human rights violations, bribery, and other incidences of corruption. The details of each consultation are reported to the corporate auditors on a case-by-case basis for guidance and supervision.

Wallet size cards listing the contact information for each consultation desk are available to employees so as to ensure they can contact a desk at any time when needed. Tosoh's internal regulations stipulate the protection of confidentiality and the prohibition of the disadvantageous treatment of persons seeking consultation.

### **Cybersecurity**

In response to the growing importance of security in our business activities, Tosoh is working to further strengthen cybersecurity in addition to bolstering conventional measures.

To prevent damage to public trust and competitiveness resulting from the leak, loss, or damage of plant control systems, mission-critical systems, confidential information, and personal information, we are using the *Cybersecurity Management Guidelines* issued by Japan's Ministry of Economy, Trade and Industry and various other cybersecurity frameworks to formulate response policies and strengthen risk management throughout the organization.

As part of our employee education activities, we hold regular briefings at the Nanyo and Yokkaichi Complexes on compliance using the *Information Security Management Guidelines*. The briefings further serve to alert employees on warning and protection measures through case studies of incidents. We also conduct attack e-mail drills to let employees experience firsthand the threat of cyberattacks.

Given the constant changes in the environment surrounding information security, we source the latest information from industry associations and government agencies and apply it to our own cybersecurity measures.

## Management and Company Data

### Business and Other Risks

The Tosoh Group identifies and analyzes risks that may have a significant impact on management and takes appropriate measures to minimize the impact of such risks when they become apparent, and implements initiatives to protect corporate value.

### Risk Assessment System

Under the supervision of the board of directors, the Tosoh Group has established a system in which each department in charge analyzes risks that may have a significant impact on management and responds appropriately. Each department is responsible for implementing risk countermeasures in a systematic manner, as well as for prompt response to crises.

### Major Risk Items

The following is a list of major risks that we recognize as having the potential to significantly impact the Group's financial position, business performance, and cash flow. We have positioned them as important CSR issues and are actively addressing them. Forward-looking statements in the text are based on the judgment of the Tosoh Group as of March 31, 2021.

### *Climate Change*

With the adoption of the Paris Accord, efforts are being made worldwide to reduce emissions of greenhouse gases, which are considered to be the major cause of climate change and global warming.

If quantitative restrictions or taxes are introduced in the future in relation to CO<sub>2</sub> and other emissions or the use of fossil fuels, or if demand for oil-related products declines due to the emergence of nonfossil-fuel alternatives, the Group's business performance and financial position may be affected. For this reason, the Group has established the CO<sub>2</sub> Reduction and Effective Use Promotion Committee to promote technological improvements for CO<sub>2</sub> reduction and effective use.

We are also taking measures to adapt our various facilities to withstand extreme weather conditions such as typhoons and floods caused by climate change that may cause damage to production facilities and roads used for transportation.

### *Environmental and Other Legal Regulations*

The Tosoh Group's business performance and financial position may be affected by restrictions on business activities, additional capital investment, or new expenses due to the strengthening of domestic and international legal regulations concerning the environment or other matters, or due to demands for social responsibility. For this reason, the Tosoh Group conducts its business activities with the recognition that environmental protection and health and safety and the like are management issues of the highest priority.

### *Technological Innovation*

In the midst of rapid changes in the domestic industrial structure and international social issues, if we are unable to continuously develop and provide new products that meet customer needs, or if groundbreaking technological innovations are made by competitors, our business performance and financial position may be adversely affected. Given these risks, the Tosoh Group is actively engaged in R&D to strengthen and expand its core businesses and create new products and opportunities for the sustainable growth of the company.

Especially in the Specialty products business, the speed of technological innovation is remarkable. This is why we believe it is necessary to develop and provide new products in a timely manner. We have positioned creating and providing products and services that solve social issues and contribute to society as a key CSR objective.

### *Intellectual Property*

In the course of developing a wide range of businesses, there is a possibility that the Group's intellectual property rights or those held by third parties may be infringed upon. In such a case, the Group's business performance and financial position may be affected, requiring technological innovation through R&D. The Tosoh Group recognizes the importance of intellectual property rights, and is working to acquire rights and prevent infringement of rights held by third parties, both in Japan and overseas.

### *Information Security*

If a problem were to occur in the plant control systems or core systems at our manufacturing complexes, we would be forced to suspend important operations, which could have an impact on our business performance and financial position. The Tosoh Group has taken various protective measures against cyberattacks.



In the event that information is leaked to outside parties due to unforeseen circumstances, the Tosoh Group's public trust and competitiveness could be compromised. This could affect the Group's business performance and financial position. Given this risk, the Group strives to appropriately manage confidential and personal information, and has taken appropriate measures that comply with the European Union General Data Protection Regulation.

### **Quality Issues**

Unexpected defects in our products could lead to a loss of public trust, discontinuation of product sales, or even legal action. This could affect the business performance and financial position of our Group. The Tosoh Group has, therefore, established a quality management system for its products and has product liability insurance in place.

### **Raw Material and Fuel Procurement**

Some raw materials and fuels are dependent on specific regions or suppliers. The Group's business performance and financial position may be affected in the event of procurement disruptions due to disasters or accidents at those suppliers. To mitigate this risk, the Group procures raw materials and fuels necessary for production from both domestic and overseas sources. The company is working to ensure stable long-term procurement by diversifying raw material and fuel suppliers, concluding medium- to long-term contracts, and purchasing from the spot market.

### **Overseas Business Activities**

There are risks from social or political turmoil caused by war, terrorism, or other factors, inadequate social infrastructure, and difficulties in recruiting and securing human resources that can potentially hinder our overseas business activities and negatively impact our business performance and financial position. As such, the Tosoh Group is engaged in a wide range of overseas business activities, including product exports and local production overseas, and is addressing the important CSR issue of diversity and inclusion, with a particular focus on human rights issues related to supply chains.

Other risks are as noted below:

- Occurrence of accidents, disasters, and infectious diseases
- Fluctuations in international market prices for products and fuels
- Changes in inventory valuations
- Shifts in domestic and international economic conditions, supply and demand, and competition

- Issues with acquisitions, capital alliances, and business restructuring
- Fluctuations in exchange rates
- Fluctuations in interest rates
- Capital expenditures
- Litigation
- Impairment in fixed assets
- Valuation of marketable securities
- Reversal of deferred tax assets
- Retirement benefits
- Estimates based on construction progress standards

### **Response to the COVID-19 Pandemic**

The Tosoh Group is promoting the prevention of COVID-19 infections in line with its CSR Basic Policy which holds that the safety and health of people involved in its business activities must be ensured.

In Japan, to reduce the possibility of employees becoming infected, we are promoting telecommuting—approximately 70% during periods of state of emergency—and staggered work hours. We are also employing web conferencing in lieu of business trips, meetings, and interviews, and implementing measures such as temperature checks for visitors. COVID-19 infection control offices have been established at the Nanyo and Yokkaichi Complexes, and we are implementing countermeasures using a phased management approach in response to the infection situation.

Major infection prevention measures at manufacturing complexes (in addition to company-wide measures):

- Temperature check by thermo-camera when entering the workplace
- Disinfection of contact areas after each shift
- Mandatory wearing of masks
- Social distancing with outsiders
- Maintain records of entry and exit at manufacturing complexes, instrument rooms, etc.
- Installation of CO<sub>2</sub> meters in temporary periodic maintenance structures to promote ventilation

### **Workplace Vaccination**

The Nanyo and Yokkaichi Complexes implemented workplace vaccination programs to reduce the chance of infection among employees and curb the spread of serious diseases.

By conducting vaccination at company workplaces, we contribute to reducing the burden on local governments and accelerating the vaccination process.



***Business Activity and Product Contributions***

Tosoh is expanding its lineup of reagents for the detection of antibodies to SARS-CoV-2 for our fully automated chemiluminescence enzyme immunoassay analyzers. The reagents contribute to basic and clinical research on COVID-19 infections by facilitating an understanding of the state of immunity after infection or vaccination.