**SUMCO** CSR Report 2019



# Message from the Management



CEO & Chairman of the Board Mayuki Hashimoto



COO & President Hisashi Furuya

### SUMCO Vision

### **1** World's Best in Technology

- 2 Deficit-Resistant Even during **Economic Downturns**
- **3** Empower Employee **Awareness of Profit**
- Competitiveness in **Overseas Markets**

SUMCO wishes to express its sincere sympathy to all those affected by natural disasters in 2018, including the 2018 Hokkaido Eastern Iburi Earthquake and torrential rains in western Japan, and pray for a speedy recovery in the areas affected.

SUMCO's Chitose Plant (Chitose City, Hokkaido Prefecture) was also exposed to Intensity 6 Lower tremors during the Hokkaido Eastern Iburi Earthquake, and while no injuries were incurred, the damage included a partial shutdown of the production line. Despite these challenges, SUMCO's employees continued with all-out recovery efforts and SUMCO received enormous support from customers, suppliers and other business partners. As a result, regular operation was restored in the month following the earthquake. The lessons gained through this most recent earthquake will be utilized to make improvements to the SUMCO Group's business continuity plan (BCP).

### Aspiring to Serve as a Good Corporate Citizen

Semiconductor devices are used in every facet of our lives, from information terminal devices such as smartphones and personal computers, communications equipment and data centers that process and store large volumes of information, home appliances including televisions and air conditioners, through to automobiles, trains and other vehicles. Providing the technological base for such devices, silicon wafers can also be considered critically important as a key material in maintaining today's standard of living.

At the SUMCO Group, under our philosophy to contribute to the development of industry as well as to the improvement of people's quality of life through the supply of silicon wafers, we strive to be a good corporate citizen and engage in CSR activities in accordance with the SUMCO CSR Policy.

### **Corporate Governance**

The SUMCO Group endeavors to maintain fairness, efficiency and transparency in its management by further enhancing its corporate governance.

In March 2019, SUMCO adopted a Board of Directors structure made up of four directors who are not Audit and Supervisory Committee Members and five directors who are Audit and Supervisory Committee Members (four of whom are Independent Outside Directors), thereby increasing the percentage of Independent Outside Directors serving on the board. We believe this structure will enhance the efficiency of our management structure and improve the auditor and supervisory

functions with respect to the execution of operations by directors.

As Independent Outside Directors, SUMCO has appointed an attorney, a management consultant who is a certified public accountant, a person with experience in the public sector as well as corporate management, and an expert in the field of metallic materials research. Bringing in a great breadth of knowledge and insight derived from the diversity of their backgrounds, the Board of Directors engages in lively discussion to contribute to the sustained growth of the Company as well as the enhancement of corporate value over the medium-to-long-term.

### Compliance

SUMCO has established and implement the SUMCO Charter, a code of conduct that all officers and employees must comply with

The SUMCO Charter broadly covers various social norms that ought to be followed by companies, such as fair business activities and blocking relationships with anti-social forces, as well as compliance with laws and regulations.

Similar charters have been established by all companies in the SUMCO Group. Our Group-wide efforts will continue to ensure that our corporate activities are sound and in accordance with social norms.

### **Risk Management**

The SUMCO Group has a global market share of approximately 30%. Since the Group supplies high-quality silicon wafers to major semiconductor manufacturers around the world, we see the stable supply of our products as our most critical management challenge and an important social responsibility.

In addition to managing risks to ensure stable supply, SUMCO takes steps to maintain and improve its business continuity plans across the entire supply chain.

### **Environmental Conservation Efforts**

The production of silicon wafers requires a great deal of electricity, water and chemical substances. For this reason, the SUMCO Group has established environmental targets, and strives to reduce its use of each of these as well as the amount of industrial waste generated.

We also ensure the thorough management and handling of harmful chemical substances and waste, and make every effort to minimize the environmental risks resulting from our business activities.

### **Relationships with Stakeholders**

SUMCO endeavors to fulfill its responsibilities to stakeholders, who support our business activities



### Health and Productivity Management

Based on a commitment to give top priority to the safety and health of our employees, we view their health as a critical management resource and have reinforced measures for health and productivity management since 2017. In February 2019, SUMCO and six SUMCO Group companies were certified under the large enterprise category of the 2019 Certified Health & Productivity Management Outstanding Organization Recognition Program (White 500).

The SUMCO Group aspires to promote various CSR activities while endeavoring to fulfill its social responsibilities to the stakeholders who support us by actively reflecting their views and wishes, which are grasped through various types of dialog with stakeholders, in our management activities.

### Our Main Responsibilities to Stakeholders

### Customers

•Enhance customer satisfaction (Maintain and improve the quality of products and services)

### Shareholders

- ·Return profits (dividends, etc.)
- Enhance corporate value

### Suppliers

- Fair trade
- Develop a solid and sustainable supply chain

### Employees

- •Offer secure employment
- ·Return profits (bonuses, etc.)
- ·Build a favorable work environment (mental health, childcare/nursing care leave)

### Local communities

- •Create employment, Pay taxes
- Support the improvement of local environments
- Support local educational and cultural activities

# **Editorial Policy**

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### **Editorial Policy**

The objective of this report is to convey the SUMCO Group's stance on CSR and report its activities to stakeholders in order to enhance their understanding and earn their support. This report has been prepared with reference to portions of the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines, Standards.

### Period Covered

January 2018 to December 2018 Data for periods outside the above are noted as such.

### **Organizations Covered**

SUMCO Corporation and its Group companies. "SUMCO" and "the Company" as used in this report refers to SUMCO Corporation. The Financial Highlights cover SUMCO Corporation and its consolidated subsidiaries. Other performance data outside the above scope are noted as such.

### Publication

June 2019

### **Note Regarding Forward-Looking Statements**

Projections, predictions, prospects, and other forward-looking statements contained in this report are made by the Company based on the information available at the time of the release of the statements and therefore are subject to risks and uncertainties. Due to various factors, actual results may vary significantly from results anticipated in the forward-looking statements.



# Outline of the SUMCO Group (As of April 1, 2019)

### **Company Information**

Trade name SUMCO Corporation Head office 1-2-1 Shibaura, Minato-ku, Tokyo Establishment July 30, 1999 Main business Manufacture and sales of silicon wafers for semiconductors

Capital Representative

### **Group Companies**

Japan

SUMCO TECHXIV Corp. SUMCO Technology Corp. SUMCO Service Corp. SUMCO Support Corp. SUMTEC Service Corp. SUMCO Insurance Service Corp.

### Overseas SUMCO Phoenix Corporation SUMCO Southwest Corporat SUMCO Personnel Services Corpo SUMCO Europe Sales Plc PT. SUMCO Indonesia

Japan Formosa SUMCO Technology Corporation

#### Network in Japan **Overseas Network**



### **Financial Highlights**

(employees) 10,000

8,000

6,000 4,000

2,000

0





2014 2015 2016 2017 2018(FY)

58.6%

138,718 billion yen Mayuki Hashimoto, CEO & Chairman of the Board Group companies 7 companies in Japan; 10 companies overseas

n	SUMCO Singapore Pte.Ltd.
ation	SUMCO Korea Corporation
oration	SUMCO Taiwan Technology Corporation
	SUMCO Shanghai Corporation
	FORMOSA SUMCO TECHNOLOGY CORPORATION



Sales composition by region (year ended December 2018)



# SUMCO Products that Support Our Lives

SUMCO manufactures silicon wafers, a key material in semiconductor devices. Semiconductor devices that use SUMCO's silicon wafers support our lives in a variety of ways, from electronic devices around us such as mobile phones, computers, smartphones and digital appliances to automobiles, medical equipment, industrial machinery control units, as well as the control of public transportation and infrastructure.



Numerous semiconductor devices are at work inside motor vehicles. An extremely high level of quality and reliability is required for silicon wafers to be used for motor control in electric vehicles (EV) and hybrid vehicles (HV/ PHV) and for driver assistance systems such as self-driving, automatic braking and lane-keeping functions.



With smartphones and computers becoming increasingly sophisticated, vast quantities of data in the form of high-quality photographs and videos are being processed in the cloud and stored in data centers. SUMCO's high-precision leading-edge silicon wafers are used for the memory and logic chips that store and process enormous volumes of data.



Devices called power semiconductors are used to control electric power. These devices are technically complex and require reliable control of large amounts of power and power saving performance, making this a specialized field.

Power supply control for heavy electric machinery, in particular, such as electric trains that use power of over 1000V, requires special know-how for the silicon wafers, as well.





Large numbers of cutting-edge semiconductors are used in telecommunications equipment including logic chips to run various applications such as email and internet browsing, image sensors and memory to store data. Every year, the functions of these semiconductors become more sophisticated, and they are made using SUMCO silicon wafers.



IoT devices, including wearable devices and digital appliances that can be operated via smartphone, are connected to the internet. SUMCO's silicon wafers are used in the data communication semiconductors and sensors equipped in these

devices.



Digital cameras record precious memories while security cameras protect public safety. As the "eye" of these cameras in taking videos and images, semiconductor devices called image sensors are used. The high quality and reliability of these image sensors are also supported by SUMCO's silicon wafers.



The production of silicon wafers is generally divided into two processes: the monocrystalline silicon process and the wafer process. In the monocrystalline silicon process, polycrystalline silicon is melted to produce monocrystalline silicon ingots. In the wafer process, these monocrystalline silicon ingots are sliced into wafers, which are then polished and cleaned to create a flat, mirror-like surface.



In the medical field, medical equipment has continued to evolve, with the advent of highprecision diagnostic imaging equipment and surgery robots capable of precise control. A large number of silicon wafers are used in these medical devices, and the silicon wafers that serve as their substrates require high reliability, especially as human lives are involved. SUMCO's silicon wafers contribute to the advance of medicine.

### SUMCO Vision

### SUMCO Strives to be an Excellent Company through the Combined Power of All its Employees.



tinuous Quality Improvement (SCOI) Award from Inte

### 1. World's Best in Technology

SUMCO's technological capabilities and abilities to ensure stable supply of products has earned high praise from customers, and has been officially recognized by many semiconductor manufacturers with excellent supplier awards.

In March 2019, we received the Supplier Continuous Quality Improvement (SCQI) Awards for the 17th consecutive year from Intel Corporation, the world's top semiconductor manufacturer. We also received the Excellent Performance Award for the fifth consecutive year from Taiwan Semiconductor Manufacturing Company (TSMC), the world's largest foundry. From Samsung, the world's largest semiconductor memory manufacturer, we received the 35th Anniversary of Partnership Award, SUMCO has therefore achieved the feat of simultaneously winning awards for five consecutive years from the top companies in the semiconductor sales.

Using this recognition as springboard to an even higher level of success, we will continue to promote collaboration with our customers based on long-term commitment and mutual trust and to improve our technical capability.

### 2. Deficit-Resistant Even during Economic Downturns

The silicon wafer market is characterized by major short-term changes in its business environment. The SUMCO Group has been working to achieve a revenue structure that avoids deficits even during economic downturns, and we are striving to improve our earnings.

Through continuous efforts in cost reduction, quality improvement and product differentiation from competitors, we will further strive to establish a corporate structure to ensure higher earnings.



Excellent Performance Award from

The 35th Anniversary of Partnership Award from Samsu

### Net sales/Operating income/



### 3.Empower Employee Awareness of Profit

Rather than the chairman, president or executives, it is the employees that actually manufactures and sells our silicon wafers. All employees of the SUMCO Group share the SUMCO Vision, maintain an awareness of profit and cost, and work to identify and solve issues. To cultivate this awareness and associated

activities among employees, CEO & Chairman of the Board, Vice Chairman and COO & President visit each plant freguently to hold management briefings in order to share the management issues Business conditions briefing(by Michiharu Takii, vice Chairman) environment.



We also recognize that without high levels of employee motivation, we will be unable to realize the SUMCO Vision of becoming "World's Best in Technology" and "Deficit-Resistant Even during Economic Downturns." The SUMCO Group works to boost employee motivation by establishing a variety of award systems to appropriately recognize and reward employees' efforts and achievements.

Moreover, with the aim of cultivating a workplace in which all employees can work comfortably, SUMCO has been pursuing initiatives to help employees strike a balance between work and child-rearing. As part of these efforts, SUMCO has established various work styles allowing employees to utilize flexible working hours to reflect their childcare responsibilities, and has set up an in-house nursery school at the Kyushu Factory (Imari), our largest manufacturing site.





Employees of SUMCO Phoenix Corporation

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### 4. Competitiveness in Overseas Markets

In addition to Japan, the SUMCO Group has plants in the United States, Taiwan and Indonesia, as well as a network of sales offices in various parts of the world, allowing us to supply silicon wafers to semiconductor manufacturers around the world. Nearly 80% of our sales come from the overseas market and we are proud to count all of the top 10 global companies in semiconductor sales among the customers of the SUMCO Group. The solid and longstanding relationships of trust developed with these customers represent a significant advantage to the SUMCO Group, and to further reinforce this advantage, we actively cultivate talented global human resources regardless of nationality.



Sales composition by region

Global top 10 companies in semiconductor sales (2018)



※ Excludes Fabless, includes Foundry

Created by SUMCO based on various sources and databases

**Special** Feature

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### The SUMCO Group's Business Activities and the Sustainable Development Goals (SDGs)

Silicon wafer products from SUMCO are not seen first-hand in everyday life, but they are essential to the manufacturing of the semiconductor devices equipped in all manner of electronic products that enrich our lives.

To fulfill our responsibilities as one of the companies supporting social infrastructure, SUMCO utilizes the SDGs as indicators of the medium-to-long-term demands of the international community and makes every effort to realize a sustainable society.

### **SUMCO** Vision

### **1** World's Best in Technology **2** Deficit-Resistant Even during Economic Downturns

### **B** Empower Employee Awareness of Profit **D** Competitiveness in Overseas Markets

### SUMCO CSR Policy

Supported by its cutting edge technology, SUMCO shall steadily provide products and service with excellent guality, ability and safety, shall win customers' satisfaction and trust, and shall contribute to the sustainable development of society.

- SUMCO shall produce legitimate profits, grow corporate value, proceed with timely and appropriate disclosure to the public, and aim at returns to its shareholders and investors.

SUMCO shall comply with law and regulations, international rules, and social norms, shall implement risk management, and shall maintain business continuity.

- SUMCO shall choose its suppliers by fair and rational standards, establish mutual confidence, and prosper together.
- SUMCO shall manage environmental activities, make use of resources and energy efficiently, and control emission.
- SUMCO shall maintain safe, healthy, comfortable and appropriate workplaces for everybody working in SUMCO, shall have a high regard for human rights, ability and personality, and shall realize fair and diverse ways of working.
- SUMCO shall respect various cultures and histories, and shall interact with society and local communities.

### About the SDGs

SDGs, or the Sustainable Development Goals, refer to the goals laid at in "Agenda 2030", which was adopted at the "United Nations Sustainable Development Summit" in September 2015. The SDGs comprise 17 goals and 169 targets to be achieved by the year 2030.

The goals and targets of the SDGs comprehensively deal with the various issues faced in the areas of the economy, industry and society. As the central figures of economic activities, companies are expected to play a key role as one of the main parties responsible for achieving the SDGs.

\* To learn more about the SDGs, check the appropriate sections on the United Nations website, starting with the "Sustainable Development Goals Knowledge Platform".









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### Main Goals of the SDGs and SUMCO's Initiatives

Contributing to the digital infrastructure supporting our daily lives •Silicon wafers that serve as the basic materials for a wide range of semiconductor devices including communications equipment, automobiles, digital appliances, medical equipment and urban infrastructure  $\Rightarrow$  p.5-6

 Silicon wafers for the automotive semiconductor devices supporting driver assistance systems such as self-driving and automatic braking  $\Rightarrow$  p.5

Silicon wafers for security cameras, communication network tools utilized in

• Silicon wafers for IGBTs which are utilized for electric vehicles (EV) and hybrid

•Initiatives to reduce waste and use water resources effectively  $\Rightarrow$  p.22

•Participation in cleaning activities and environmental conservation

• Publishing a CSR report that incorporates an environmental report

•Establishing an in-house nursery school and improving the childcare allowance

•Prohibiting discrimination on the basis of gender and clearly stating it in the

•Utilizing and developing a diverse range of human resources  $\Rightarrow$  p.30 •Initiatives aimed at safety, health and hygiene  $\Rightarrow$  p.32

Promoting compliance and fair business activities •Initiatives to prevent bribery and other forms of corruption  $\Rightarrow$  p.13

### Corporate Governance

### Why SUMCO Tackles Corporate Governance

SUMCO recognizes that it is a critical management challenge to fulfill its mandate from shareholders by achieving sustainable growth and improving corporate value in the medium-to-longterm, while building and maintaining positive relationships with other stakeholders. Based on this recognition, SUMCO pursues a range of measures related to corporate governance, such as reinforcing the auditing and supervisory functions of the Board of Directors, ensuring efficiency in how directors execute their duties and improving internal controls within the SUMCO Group, in order to achieve swift management decision-making and to ensure transparency and fairness in the execution of business.

### Basic Stance on Corporate Governance Structure

SUMCO is organized as a company with an Audit and Supervisory Committee. By adopting this system, the effectiveness of supervision and auditing has been enhanced through audits conducted by Directors who are Audit and Supervisory Committee Members and have voting rights at Board of Directors meetings. In addition, the effectiveness of internal controls has been enhanced through audits conducted with the support of the Internal Audit Department.

### Corporate Governance Structure



### **Board of Directors**

SUMCO's Board of Directors comprises internal Directors with a proven record of performance in their respective areas of responsibility and outstanding management abilities, along with Outside Directors with expert knowledge and extensive experience, based on the basic stance of the Company to ensure an overall balance and diversity in knowledge, experience and capabilities of the directors. The Board of Directors comprises four directors (except for directors who are Audit & Supervisory Committee Members) and five directors who are members of the Audit & Supervisory Committee (four of whom are Independent Outside Directors).

In accordance with legal statutes, the Articles of Incorporation and the Rules of the Board of Directors, the Board of Directors makes decisions on management strategy, management plans, and other such important matters relating to business. It receives reports from every Director on the status of the execution of duties and it exercises supervision of compliance, internal controls, risk management, and important business execution at affiliated companies. With the participation of Independent Outside Directors, the Board of Directors also engages in the free exchange of opinions regarding the appropriate evaluation of company performance and related matters, and reflects that evaluation in the personnel administration of senior management members. It is also our basic company policy that matters relating to financial results and so on, matters relating to management plans, and the execution of other such important operations should be decided after adequate discussion by the Board of Directors, including the Independent Outside Directors. For this reason, the Articles of Incorporation do not stipulate that decisions on the execution of important business can be delegated to each Director.

The effectiveness of the Board of Directors is evaluated each year in order to continually enhance the effectiveness of corporate governance. In 2018, Board of Directors meetings were convened 16 times in total.

### **Independent Outside Directors**

SUMCO has appointed four Independent Outside Directors. One is an attorney; one is a management consultant who has experience working as a certified public accountant; one is a person with wide experience and knowledge cultivated through experience in the public sector as well as many years of experience in corporate management; and one is an individual with knowledge as an expert in the field of metallic materials research and experience cultivated through years of working as a university professor.

Each Outside director satisfies SUMCO's "Criteria of Independence" established in accordance with Tokyo Stock Exchange

standards on the independence of independent directors, and has been verified to be free of potential conflicts of interest with general shareholders.

In an effort to ensure the sustained growth of the SUMCO Group and increase its corporate value over the medium-tolong-term, the Independent Outside Directors provide advice on important matters related to management based on their own individual knowledge and take the perspective of minority shareholders and other stakeholders in supervising management. They participate in the appointment of candidates for Director and other important decision-making by the Board of Directors, and supervise business execution by the Board of Directors, senior management and others as well as conflicts of interest between the Company and senior management and others.

### Audit and Supervisory Committee

The Company's Audit and Supervisory Committee is made up of five directors who are Audit and Supervisory Committee members (four, a majority, of whom are Independent Outside Directors). In order to ensure the effectiveness of Audit and Supervisory Committee activities, permanent Audit and Supervisory Committee Members are put in place by mutual voting among Audit and Supervisory Committee members. In addition, it is the Company's basic policy to take steps to ensure that at least one Audit and Supervisory Committee Member has considerable knowledge and experience pertaining to finance and accounting. Additionally, the Company has established the Audit and Supervisory Committee and assigns staff to support the activities of the Committee and facilitate the smooth performance of its audit and supervisory functions.

### Message from an Outside Director

### Masahiro Mitomi, Outside Director

Q1. From your standpoint as an Outside Director, moving forward, how do you expect SUMCO to pursue the promotion and development of its business in the medium-to-long-term, and how do you envisage your involvement?



To promote and develop its business activities going forward in the medium-to-long

term, I think it is important for SUMCO to continually implement initiatives aimed at achieving the SUMCO Vision. I also think that to respond flexibly to changes in the industry, SUMCO should withdraw from fields in which it lacks strengths and opportunities, and venture farther into fields in which it enjoys strengths and opportunities. This is the perspective from which I will be involved as an Outside Director going forward.

### Q2. Please describe the strengths, characteristics and other qualities of SUMCO's governance system.

To start with, the strength of SUMCO's governance system lies in the fact that human resources with long involvement and familiarity with the silicon wafer industry are tasked with management. Combined with the fact that four of the Outside Directors enjoy an environment in which they can openly express their views to senior management based on their respective areas of expertise, Data

The Audit and Supervisory Committee exercises its statutory right of investigation and audits the Directors' execution of their duties from the viewpoints of appropriateness and conformance with laws and regulations and the Articles of Incorporation by inspecting and confirming the status of compliance with laws and regulations, Articles of Incorporation, and so on, and by monitoring and otherwise supervising the development of and operational status of the system of internal controls, including the internal control of financial reporting.

### Nomination and Remuneration Committee

In an effort to further enhance its corporate governance, SUM-CO has established a Nomination and Compensation Committee composed of two internal Directors and two Independent Outside Directors to serve as a discretionary advisory body for the Board of Directors.

The Nomination and Compensation Committee convenes twice a year in principle, receives inquiries from the Board of Directors regarding the process for selection of candidate Directors of SUMCO (excluding Directors who are Audit and Supervisory Committee Members), their qualifications, the reasons for their designation as candidates, the remuneration of executives, and related matters. The committee examines the appropriateness and other aspects of the matter of inquiry and, also taking evaluations of company performance into account, delivers its findings. The Board of Directors, receiving the findings of the Nomination and Compensation Committee, designates candidate Directors (excluding Directors who are Audit and Supervisory Committee Members) and decides on their remuneration and related matters.

I believe that the robust discussions that take place in the Board of Directors are characteristic of SUMCO's governance system.

# Q3. In recent years we have seen heightened interest and expectations pertaining to ESG (environment, social and governance). How do you feel SUMCO, for its part, needs to respond to this trend?

I believe SUMCO has incorporated ESG perspectives in the course of efforts to achieve the SUMCO Vision and its CSR policy. Accordingly, I think it will be important to push forward in a thoroughly honest fashion to achieve the vision and policy, and develop the human resources capable of doing so at multiple levels within the organizational hierarchy.

Masahiro Mitomi Director (Audit and Supervisory Committee Member)				
October 1987	Joined the Tokyo Office of Arthur Andersen			
March 1991	Registered as a Certified Public Accountant			
September 1991	Senior Staff of San Francisco Office, Arthur Andersen			
September 1994	Manager of Seattle Office, Arthur Andersen			
March 1996	Senior Manager of Atlanta Office, Arthur Andersen			
May 2001	Representative Director of Value Create Inc. (present post)			
April 2009	Part-time Lecturer of Keio Business School (present post)			
March 2014	Outside Director of the Company			
March 2016	Outside Director (Audit and Supervisory Committee Member) of the			
	Company (present post)			
March 2017	Outside Director (Audit and Supervisory Committee Member) of			
	OTSUKA KAGU, LTD.			

## Compliance

### Why SUMCO Addresses Compliance

The SUMCO Group recognizes that properly complying with laws, ordinances and expected social norms are critical to the Company fulfilling its social responsibility and essential to the continuous enhancement of the Company's corporate value. Based on this belief, SUMCO strives to promote compliance activities.

### The SUMCO Charter of Corporate Conduct

For the Group's further growth while fulfilling its social responsibility, the SUMCO Group has instituted the SUMCO Charter of Corporate Conduct to define the norms that the Group's employees should uphold, not only in terms of compliance with laws and ordinances, but also more broadly in terms of CSR in general. The SUMCO Charter of Corporate Conduct is positioned as the highest level of SUMCO regulations, and is placed above the various in-house regulations and compliance programs found within the Group.

The SUMCO Charter of Corporate Conduct will be kept available on the corporate intranet at all times to further broaden employee awareness. Education in the SUMCO Charter of Corporate Conduct is also being provided to all employees on

### SUMCO CSR Policy

regular basis.

In accordance with the SUMCO Charter of Corporate Conduct, the Company appoints a Chief Compliance Officer to embody the highest level of responsibility for compliance. The Chief Compliance Officer monitors the status of compliance with the SUMCO Charter of Corporate Conduct by means of compliance supervisors in each department and Group company, regularly reports findings to the Board of Directors, and undergoes review by the Board.

In order to further ensure compliance with laws and ordinances, the Legal Oversight Regulations appoint departments with primary responsibility for continually overseeing those laws and ordinances that are related to the execution of the departments' business. Each responsible department continuously monitors the enactment, amendment and abolishment of relevant laws and ordinances, while the auditing department confirms the status of legal compliance through internal audits.

In the event a problem related to compliance is discovered, the departments involved act in cooperation and under the supervision of the Chief Compliance Officer to immediately investigate the cause of the problem and prevent its recurrence.

- 1. Supported by its cutting edge technology, SUMCO shall steadily provide products and services with excellent quality, ability and safety, shall win customers' satisfaction and trust, and shall contribute to the sustainable development of societv
- 2. SUMCO shall produce legitimate profits, grow corporate value, proceed with timely and appropriate disclosure to the public, and aim at returns to its shareholders and investors.
- 3. SUMCO shall comply with laws and regulations, international rules, and social norms, shall implement risk management, and shall maintain business continuity.
- 4. SUMCO shall choose its suppliers by fair and rational standards, establish mutual confidence, and prosper together.
- 5. SUMCO shall manage environmental activities, make use of resources and energy efficiently, and control emission.
- 6. SUMCO shall maintain safe, healthy, comfortable and appropriate workplaces for everybody working in SUMCO, shall
- have a high regard for human rights, ability and personality, and shall realize fair and diverse ways of working.
- 7. SUMCO shall respect various cultures and histories, and shall interact with society and local communities.

### Fair Business Activities / Anti-Corruption

SUMCO is committed to promoting fair business activities and preventing bribery and other forms of corruption, and the SUMCO Charter of Corporate Conduct clearly provides for legal compliance, fair competition, and prohibition of any wrongful provision of profits to public servants and other officials. SUM-CO sets forth further detailed provisions in the Regulations on Handling the Grant of Benefits.

The Regulations on Handling the Grant of Benefits prohibit (1) unlawful political contributions and donations; (2) entertainment or gifts in connection with the duties of public servants; (3) financial benefits in connection with the exercise of shareholders' rights; (4) excessive entertainment, gifts or other such benefits that exceed commonly accepted bounds in society; and any unlawful benefits as well as the entire range of transactions that are recognized as wrongful or improper in light of what is commonly accepted in society. The Regulations also define standards for making donations, providing sponsorship, paying entertainment expenses, giving celebratory or condolence gifts, paying membership dues to external organizations, and outsourcing operations and ensure the implementation of them under an appropriate approval process.

SUMCO keeps the Regulations on Handling the Grant of Benefits available at all times on the corporate intranet in order to make it widely known. We also provide training on the SUMCO Charter of Corporate Conduct to thoroughly familiarize all officers and employees with it, and the status of compliance with these provisions is regularly reported to the Chief Compliance Officer.

### Internal Reporting System

SUMCO has introduced an internal reporting hotline which is available to all employees for reporting actions violating laws and ordinances as well as those violating the SUMCO Charter of Corporate Conduct. In addition to an in-house contact point for internal reports, an external contact point (an attorney) has also been provided so that employees can make reports with peace of mind. Anonymous reports are accepted and all disadvantageous treatment including retaliation against employees who make reports is strictly forbidden.

The Company makes every effort to fully disseminate information about the internal reporting system to employees. Information on how to use the hotline and about contact points for consultation are posted at all times on the corporate intranet, and these matters are also explained during training on the SUMCO Charter of Corporate Conduct which is conducted regularly for all employees.

#### Export Control

To ensure thorough export control aimed at maintaining international peace and security, SUMCO has clearly laid out compliance with export control rules in the SUMCO Charter of Corporate Conduct. The Company has established an appropriate export control system in accordance with the Security Export Control Rules where it ensures that exports are only executed after the reviews and examinations of all the requirements to be met, and implemented measures including regular training on export control for employees.

### Key Elements of the SUMCO Charter of Corporate Conduct

Based on SUMCO CSR Policy, the SUMCO Charter of Corporate Conduct broadly defines the norms that the Company's employees should uphold in terms of CSR in general.

- Compliance with laws and ordinances, international rules and social norms In addition to complying with relevant laws and ordinances in Japan and overseas, the Charter holds SUMCO and its employees to more stringent standards with respect to anti-corruption, promotion of fair business activities and suchlike. During training on the Charter, we also cover international CSR requirements such as the RBA (Responsible Business Alliance) Code of Conduct and require employees to understand thoroughly .
- Respecting human rights and maintaining safe, comfortable and appropriate workplace environments To cultivate a comfortable and appropriate workplace by advancing safety and health and respect the human rights, abilities and individuality of all employees, we strictly prohibit discrimination on the basis of unreasonable factors including nationality, race, age, gender and religion and strictly prohibit various forms of harassment.
- Information management and intellectual property protection In light of the fact that information and intellectual property rights represent the source of corporate competitiveness, the Charter prohibits conduct such as the leaking or falsification of information and defines the appropriate management of information, and also establishes provisions concerning the utilization of intellectual property rights while prohibiting conduct that infringes upon the intellectual property rights of others.

#### Protecting the environment

The Charter also sets forth provisions on how SUMCO should comply with environmental laws and ordinances while making every effort to reduce waste and pollutants, and also requires employees to understand this policy and act with an awareness of environmental conservation on a daily basis.

### Improving quality

To improve customer satisfaction and mitigate the risks inherent in product liability, the Charter requires diligent efforts to maintain and improve the quality of our products and services.

### **Conflict Minerals**

We understand that none of tantalum, tin, gold or tungsten is necessary to the functionality or production of a product manufactured by us, and that thus our product is not subject to the Conflict Mineral regulations under the Dodd-Frank Wall Street Reform and Consumer Protection Act of the United States of America established in 2010.

### **Renouncing Relationships with Antisocial Forces**

The SUMCO Charter of Corporate Conduct declares that the Company denounces any kind of relationship with antisocial forces and rejects unreasonable requests or demands from such forces. This is thoroughly disseminated among all executives and employees of the Company through education and training.

### Initiatives on Intellectual Property

As its basic policy, the SUMCO Group attaches importance to intellectual property and utilizes it as a strategic tool for the Group's business, while at the same time respecting the intellectual property rights of third parties. Based on this policy, we have set forth rules on how we obtain, maintain and utilize intellectual property and prevent infringements in the SUMCO Charter of Corporate Conduct and Intellectual Property Regulations, and provide regular education on intellectual property matters to employees. We also actively and continually pursue efforts to facilitate the effective utilization of intellectual property, including an inventor commendation scheme designed to encourage invention and improve the quality of patent applications. Obtained intellectual property rights are also reviewed periodically to eliminate obsolete intellectual property so as to keep costs at a reasonable level.

### **Risk Management**

### Why SUMCO Addresses Risk Management

The Silicon wafer business is a critical industry that supports our IT-oriented society, and the SUMCO Group is responsible for the stable supply of silicon wafers to semiconductor device manufacturers around the world. For this reason, the SUMCO Group regards business continuity as a key management concern.

The Business Security Committee (BSC), which is an organization responsible for company-wide risk management, identifies, analyzes and assesses risks, implements countermeasures and promotes risk management activities including the formulation of business continuity plans (BCP), with the aim of predicting risks in advance, preventing them from being realized and minimizing damages when a risk is realized.

### Major Risks Recognized in the Basic Rules on Risk Management

- (1) Risks Related to General Management Examples: Contractual disputes, investment in new businesses
- (2) Risks Related to Accidents and Disasters Examples: Earthquakes, wind and flood damage, water and electric power service interruptions
- (3) Risks Related to Discontinuation of Business Examples: Fire, equipment accidents, production impediments, disruptions to raw material procurement
- (4) Risks Related to Compliance Examples: Antitrust violations, violations of laws related to corruption and anti-corruption, violations of employment-related laws and ordinances, violations of environmental regulations
- (5) Risks Related to Information Examples: Leaking of trade secrets, network shutdowns

### **BSC(Business Security Committee)**

Established to take charge of SUMCO's risk management as a whole, the Business Security Committee (BSC) is responsible, among other things, for formulating the Company's risk management policies and assessing the progress of risk management.

#### BSC's Structure and Objectives



### Risk Management Basic Policy

SUMCO has set forth basic matters pertaining to risk management in the Basic Rules on Risk Management, under which we undertake risk management activities.

- Our basic approach to responding to risks involves the following two points.
- a. Prioritize the handling of risks by likelihood of occurrence and severity of impact to ensure optimum allocation of management resources and maximize the effectiveness of measures.
- b. Minimize damage and loss by preventing the suspension or discontinuation of business activities to ensure business continuity in the event of an accident or other emergency situation.

(6) Risks Related to Intellectual Property

- Examples: Infringing upon intellectual property rights or suffering infringement
- (7) Risks Related to Human Resources and Employment Examples: Harassment, occurrence of scandals, crimes and other incidents
- (8) Risks Related to Taxation and Accounting Examples: Funding impediments, rapid exchange rate fluctuations
- (9) Risks Related to Products and Services Examples: Quality issues, complaints
- (10) Risks Related to Safety and Health Examples: Industrial accidents, spread of infectious
- disease (11) Risks Related to the Environment
- Examples: Pollution, environmental accidents (12) Risks Related to Credit
- Example: Bankruptcy of a customer

### **Ensuring Business Continuity**

Our Basic Rules on Risk Management define business continuity as an important management issue, and we have been working to develop and improve our BCP (business continuity plan) to ensure business continuity.

The details of the BCP, and its state of improvements, the results of training drills and other matters are reported on the BSC, and the BSC verifies the effectiveness of the BCP, and determines policies on future action to be taken. Each department and group company improves the BCP further according to the nolicies

### **Establishment of Emergency Frameworks**

In case a large-scale disaster such as a major earthquake or an accident should occur, we have established frameworks including manuals defining initial responses and the establishment of Emergency Response Team so that we can respond immediately, ensure the safety of employees, protect our assets and aim to resume businesses as soon as possible.

In fiscal year 2018, we conducted BCP drills to ensure the continuation of head office functions based on a scenario in which an inland earthquake in Tokyo Metropolitan area makes the operations at the Tokyo Head Office impossible.

In addition, we also conducted integrated emergency response drills at each plant. The drills included activities such as evacuation, firefighting, reporting, rescue, emergency relief and transportation, and continuous improvements are made by identifying issues and reviewing procedures and other details after conducting the drills.



### Safety Confirmation System

The SUMCO Group has introduced a "Safety Confirmation System" which enables guick conformation of the safety status of employees working in Japan. We think the system also helps speed up post-disaster recovery efforts.

### Computer System-related Disaster Countermeasures

The Company has ensured redundancy for mission-critical and peripheral systems used on a company-wide basis, establishes equivalent backup servers and performs data synchronization in order to continue business operation even in the event that a server installation location is damaged by a large-scale disaster such as a major earthquake.

### Implementing Emergency Drills and Countermeasures

At the SUMCO Group, we regularly conduct initial firefighting drills such as the handling of fire extinguishers and fire hydrants, drills on the handling of respirators and training on the employment of lifesaving measures such as CPR and AED usage, in order to reduce damage in the event of a disaster. We also conduct exercises such as carrying drills using cloth stretchers to simulate an evacuation by stairs to further enhance employees' ability to respond in an emergency.

Additionally, at our Kyushu office we periodically conduct joint response drills with suppliers that deliver chemicals to our sites so that all involved can take safe and smooth action in the event of a leakage of chemicals during delivery.



### Voice 01

Katsuhito Asahi, Unit Leader Nagasaki Safety and Disaster Prevention Section, General Affairs Department, SUMCO TECHXIV Corporation



### Q. Please describe the status of implementation and the level of participation in the emergency response drills you conduct at the plant.

For integrated emergency response drills, we envisage a major earthquake measuring upper 6 on the intensity scale having occurred. With the disaster control headquarters comprised of key executives and managers including General Manager of Production and Technology Division operating as the center, we mainly confirm the actions taken in the initial response. In recent years we have focused the drills on confirming the safety of employees, searching for missing people, conducting rescue and relief activities, providing emergency medical care and selecting safe evacuation routes from the perspective of placing the highest priority on human life. In fiscal year 2018, more than 400 people in Nagasaki Plant took part in the drills, a figure which suggests a heightened interest in disaster prevention among employees. Once a year we also conduct latenight emergency response drills for shift workers, envisaging a scenario in which a major earthquake strikes at night. Each year when we conduct our emergency response drills, we ask the local Omura Fire Department to attend. In addition to reviewing the drills overall, the members of the fire department offer valuable insight and guidance from their perspective as professionals. Moving forward, we will continue to coordinate with the local community to steadily improve our disaster preparedness level through drills and decidedly achieve the goals of self-help, cooperation, and public assistance in times of disaster.

### Information Management

The Company clearly stipulate the appropriate use and management of information in the SUMCO Charter of Corporate Conduct. We have also established the Rules on Information Management along with related regulations, guidelines and other materials. Under this framework we make every effort to prevent leaks of trade secrets and customer information by conducting regular information management training for emplovees.

Additionally, SUMCO has established the Rules on Personal Information Management in accordance with the Act on the Protection of Personal Information to ensure that personal information is managed appropriately.

### Preventing Information Leaks

SUMCO undertakes measures to prevent information leaks by addressing various computer system-related risks such as external attacks on our computer systems via the Internet, the unauthorized usage of our computer systems and the infection of computer viruses.

Enviror

SUMCO Corporation CSR Report 2019

# **Eco-friendly Business Activities**

### **Environmental Management**

### Why SUMCO Addresses Environmental Issues

From energy-saving initiatives to curbing greenhouse gas emissions and reducing waste, lowering the environmental impact by the business activities of companies is a pressing task to ensure that the global environment is maintained and protected.

To ensure that the irreplaceable global environment is passed on to future generations, the SUMCO Group has established an environmental management system. We have obtained ISO14001 certification for all of our plants, and pursue initiatives aimed at protecting the environment.

### SUMCO Environmental Policies

### 1. Basic Environmental Philosophy

As a manufacturer of high-quality silicon wafers for semiconductors and of quartz crucibles, SUMCO has established the following action guidelines and is committed to self-initiated and sustained environmental conservation activities to pass on the Earth's irreplaceable environment to future generations.

### 2. Environmental Action Guidelines

- 1 Through our business activities, we shall pursue activities with an emphasis on the following points.
- ①We shall act to conserve electricity and other energies consumed by our business activities, thereby curbing emissions of greenhouse gases.
- <sup>②</sup>We shall strive to reduce waste and increase recycling and reuse rates.
- ③We shall strive to reduce chemical substances used in our business activities.

(a) We shall thoroughly manage the harmful chemical substances and waste, thereby reducing the risks to the environment.

- 2 We shall abide by environment-related laws and regulations, bylaws, and other agreed requirements.
- 3 We shall strive to prevent environmental pollution in our entire business activities and undertake efforts to protect the global environment and coexist in harmony with local communities.
- We shall define environmental objectives , and by periodically reviewing these objectives and targets, shall promote continuous improvement of our environmental management system.
  January 1, 2017

### **Environmental Management Structure**

The environmental management officer and the environmental managers at each site report to the environmental management executive officer and act in accordance with their respective roles, responsibilities and authorities. Thoroughness of instructions and information sharing are ensured at meetings of the company-wide Environmental Management Committee and the Environmental Management Committee at each site, both of which are convened periodically.

### Environmental Management Structure



### **Environmental Objectives**

The SUMCO Group sets environmental objectives based on its Environmental Policies and the results of environmental impact assessments that are conducted periodically. At each of our manufacturing sites, we implement initiatives to reduce environmental impact and improve the environment in accordance with these objectives, such as reducing CO<sub>2</sub> emissions, the usage of chemical substances, the generation of industrial waste and water consumption. The previous year's performance serves as the base value for these environmental objectives. Further, we verify our performance every six months and review the target figures as necessary.

### Environmental Objectives (Fiscal Year 2018 to Fiscal Year 2021) and

Base : Performance in the previous		18	2019	2020	2021
year	Targets	Results	Targets		Targets
Reduction of CO <sub>2</sub> emissions	Reduction by 0.9%	Reduction by 1.1%	Reduction by 0.7%	Reduction by 0.7%	Reduction by 0.7%
Reduction of chemical substance use	Reduction by 0.9%	Reduction by 1.0%	Reduction by 1.6%	Reduction by 1.6%	Reduction by 1.6%
Reduction of industrial waste	Reduction by 0.6%	Reduction by 0.9%	Reduction by 2.6%	Reduction by 2.6%	Reduction by 2.6%
Reduction of water consumption	Reduction by 0.6%	Reduction by 0.7%	Reduction by 0.3%	Reduction by 0.3%	Reduction by 0.3%

### **Environmental Education**

Education Targeted at Suppliers to Prevent Environmental Accidents

The SUMCO Group [Japan] provides environmental education to supplier of chemicals and other products and to industrial waste treatment firms to ensure the prevention of environmental accidents and compliance with laws and ordinances.

#### Contents of Education

- 1. Requests for vehicle inspections to prevent fuel, oil and other substances from leaking
- 2. The importance of SUMCO personnel being present at the time of delivery or collection, and request that their instructions be followed.
- Request for inspection of industrial waste collection vehicles, particularly to prevent leakage or dripping of sludge, liquid waste, etc.
- 4. Introduction to actual environmental accidents that occurred at the Company in

the past

Suppliers receiving environmental education on the prevention of environmental accidents

# al of s

### **Environmental Audits**

Through the SUMCO Group, internal environmental audits are conducted by internal auditors, while environmental management system audits are implemented by an outside review organization.

#### Internal Environmental Audit

Internal environmental audits are annually conducted by internal auditors for all organizations in the SUMCO Group subject to the Company's environmental management system. The results are reported to the environmental management executive officer and reflected in the following year's activities to enable continuous improvement of the environmental management system.

#### Environmental Management System Audit

The SUMCO Group is subject to regular audits conducted every year and a renewal audit conducted every three years by an external independent auditor.

٦	Ficcol	Voor	2010	Deculte
α	FISCAI	rear	2018	Results

### **Compliance with Environmental Legislation**

The SUMCO Group identifies the requirements of laws, regulations and agreements and verifies compliance.

We also ensure compliance with overseas chemical substance regulations, namely the Restriction on Hazardous Substances (RoHS) Directive and Regulation on Registration, Evaluation, Authorization and Restriction of Chemical Substances (REACH).

### Progress of Soil and Groundwater Contamination Countermeasures at the Noda Office

In a voluntary survey implemented at the Noda Office in 2005, it was found that amounts of volatile organic compounds (VOC) and fluorine exceeded the soil and groundwater environmental standard values. We have been pursuing countermeasures in consultation with relevant parties. At present, we are working to prevent the spread of and recover contaminated substances by using a pumping well set up near the boundary of the plant grounds.

Accumulated Amount of Contaminated Substances Recovered Annually from Groundwater at the Noda Office



### **Environmental Impact of Business Activities**

The depletion of energy resources, global warming, threats to biodiversity and other environmental problems are having an increasingly serious impact on the global environment. The SUMCO Group identifies electric power, chemical substances, waste products and wastewater as significant environmental aspects in its production activities and pursues initiatives to make environmental considerations and reduce the environmental impact across all of its business activities.

### Business Activities and Environmental Impact in 2018 (the SUMCO Group [Japan])

### Input

### Energy

• • •

Electricity .....1,423 GWh (crude oil equivalent) 358,498 kL Fuel(crude oil equivalent) ··· 6,232 kL

### Water

Industrial water 9.9 Mm <sup>3</sup>
Tap water 0.2 Mm <sup>3</sup>
Groundwater 3.3Mm <sup>3</sup>

PRTR-regulated substances Amount handled .......909t

Business activities	Output
Product development · Environmental assessment Procurement · Safe raw materials · Use of recycled materials Production · Energy conservation · Reduced use of chemical substances · Reduced water consumption · Reduced emissions of pollutants · Reduced amount of waste · Compliance with laws and ordinances Transport · Improved transport system · Use of reusable shipping cartons · Reuse of materials	CO2 emissions 728 Breakdown •Electricity* ··· 703 •Fuel ··· 21 •CO2 emissions from •CO2 emissions from •CO2 emission coefficient of each electroly are co CO2 emission coefficient of each electroly are co cordination coefficient of each electroly are co supplie. Discharged wastew •Ocean •Rivers •Sewerage Waste •Ordinary business w •Industrial waste •Specially controll industrial waste •PRTR-regulated sult •Amount released

000t-CO2

· 26,797t

3,497t

Environmental Impact (Japan)











\* CO2 emissions of the overseas subsidiaries are calculated using the emission coefficient of each country based on the Greenhouse Gas Protocol Initiative.

\* STC = SUMCO TECHXIV Corporation, SPTI = PT. SUMCO Indonesia, FST = FORMOSA SUMCO TECHNOLOGY CORPORATION, SPX = SUMCO Phoenix Corporation

### **Combating Global Warming**

To reduce electric power consumption for the production of silicon wafer, the SUMCO Group makes every effort to streamline production and promote rationalization. When it comes time to update production and utility facilities, we replace them with energy-saving and high-efficiency alternatives.

In offices, lighting is turned off during lunchtime and other breaks, and air conditioners are set at a reasonable temperature to save energy and reduce CO<sub>2</sub> emissions.

The SUMCO Group (Japan) also participates in the "Commitment to a Low Carbon Society" of the electric and electronic industry as a part of efforts to address the issues of climate change, and strives to combat global warming.

### CO<sub>2</sub> Emissions (SUMCO Group)

•••••



### CO<sub>2</sub> Emissions per Silicon Wafer (sales)



Cumulative Reduction of CO2 Emissions (the SUMCO Group [Japan]) (thousand tons-CO2)





Electric Power Consumption per Silicon Wafer (sales)



### CO<sub>2</sub> Reduction through Modal Shift to Ship Transport in the Field of Logistics

SUMCO used to rely solely on airfreight for the transportation of silicon wafers to overseas markets. However, to reduce both CO<sub>2</sub> emissions and transportation costs, we have been promoting a modal shift to ship transport for some of our products since 2009, taking into account factors affected by longer transportation lead time and changes in the transportation environment. We conduct tests before switching to ship transport to confirm that the quality of products is not affected, as well as consulting with customers.

CO2 Reduction through Modal Shift to Ship Transport



### **Reduction of Waste**

To reduce the large volume of sludge generated at our plants, the SUMCO Group (Japan) are making efforts to optimize the quantity of chemicals injected for wastewater treatment. As for waste oil, waste acid, waste alkali, waste plastics and other waste, we are promoting both their recycling and their conversion into valuable resources.

### Waste Reduction through the Adoption of Reusable Containers

We are replacing the containers used to ship 300-mm diameter silicon wafers with reusable alternatives as one of the initiatives to reduce post-delivery waste.

The percentage of reusable containers used for shipment in 2018 was 62.6%.

Before introducing reusable containers, we conduct tests to ensure that the quality of the products is not affected .

#### Amount of Recycle (the SUMCO Group [Japan])



Amount of Disposal (the SUMCO Group [Japan])



### Effective Use of Water Resources

To ensure the effective use of water resources, we utilize the reject water generated in the water purification process as cooling water for utility facilities and dilution water for wastewater treatment chemicals. We also pursues initiatives to conserve as much water as possible for recycling, such as collecting the rinse water used to clean silicon wafers.

Our water recycling rate hovers at around 40% and was 39.4% in 2018.



### Amount of Water Supplied and Discharged



### Amount of Water Consumption by Water Source (the SUMCO Group [Japan])

# Governance

### Chemical Substance Management

The Act on 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 / PRTR Law) requires businesses to report the amounts of any designated chemical substances released into the environment or transferred.

In 2018, there were 12 substances subject to reporting under the PRTR Law. The majority of these were substances contained in cleaning agents and fuels. Amount of PRTR-Regulated Substances Released and Transferred (the SUMCO Group [Japan])



### List of Substances Subject to PRTR Reporting (Class 1 Designated Chemical Substances: 1 ton or more per year; Specific Class 1 Designated Chemical Substances: 0.5 tons or more per year)

Period c	overed: April 2017 to March 2018							(t)
Ordi- nance Chemical Substance handled								
No.			Atmosphere	Public waters	Soil	Landfill	Sewerage	Waste
20	2-aminoethanol	14.4	0.00	0.04	0.00	0.00	0.00	0.00
30	Linear alkylbenzene sulfonate (LAS)	1.9	0.00	5.81	0.00	0.00	0.00	0.00
71	Ferric chloride	6.9	0.00	0.00	0.00	0.00	0.00	0.00
80	Xylene	63.6	1.27	0.00	0.00	0.00	0.00	1.30
88	Hexavalent chromium compound	0.7	0.00	0.00	0.00	0.00	0.00	0.70
296	1,2,4-Trimethylbenzene	70.9	0.09	0.00	0.00	0.00	0.00	0.00
300	Toluene	7.6	6.7	0.00	0.00	0.00	0.00	0.86
332	Arsenic and its inorganic compound	0.9	0.00	0.00	0.00	0.00	0.00	0.00
374	Hydrogen fluoride and its water- soluble salts	658.6	0.45	5.83	0.00	0.00	0.00	303.10
407	Poly (oxyethylene) alkyl ether	18.1	0.00	0.03	0.00	0.00	0.00	2.60
410	Poly (oxyethylene) nonylphenyl ether	56.0	0.00	0.00	0.00	0.00	0.00	56.00
438	Methylnaphthalene	9.0	0.01	0.00	0.00	0.00	0.00	0.00
	Total	908.6	8.52	11.71	0.00	0.00	0.00	364.55

\* The amount handled is not equal to the total amount released and transferred because some substances were released after decomposition and detoxification.

# Speedy, Accurate and Fair Disclosure of Corporate Information

### Why SUMCO Addresses Information Disclosure

SUMCO makes every effort to enhance management transparency and earn legitimate recognition of its corporate value from shareholders and investors by releasing information including the Company's management vision, the status of its business activities and financial performance in a speedy, accurate and fair manner. We also undertake activities to continually improve corporate value by reflecting the feedback received from shareholders and investors in our management.

### Basic Policy on Information Disclosure

SUMCO believes timely and appropriate disclosure of corporate information to investors is a core element in ensuring a sound stock market. The Company shall commit itself to speedy, accurate and fair disclosure of corporate information while always adopting the perspective of investors. Corporate information that is useful in investor decision-making shall be actively disclosed even when not mandated by laws and regulations.

### Communication with Shareholders and Investors General Meeting of Shareholders

SUMCO positions General Meeting of Shareholders as the occasion where important decisions on the Company's policies and other matters are made as well as an opportunity to have dialogues with shareholders.

We are engaged in early dispatch of the notice of convocation, posting on our website and preparation for the English translation.

We also effort to provide explanations of the details of business report and answer questions asked by shareholders during meetings in as clear a manner as possible by utilizing narrated video footage.

### **IR** Activities

The Timely Disclosure Network (TDnet) of the Tokyo Stock Exchange is utilized to disclose information that needs to be disclosed in a timely fashion, and documents are posted both in Japanese and English simultaneously on our website to ensure the fair disclosure of information to shareholders and investors in Japan and overseas. Our Annual Report and Message to Shareholders are also published to convey messages from top management and report on business performance and conditions.

As well as regularly held meetings with institutional investors and securities analysts, SUMCO also periodically provides company briefings to individual investors and organizes visits to overseas institutional investors in Europe, North America and Asia to help investors develop a better understanding of the Company.

### Information Disclosure System

The Public Relations & IR Department is responsible for dialogue with shareholders and other investors, under the supervision by executive management, the results of which are reported to the Board of Directors and executive management as needed. Top management also provides its own explanations during financial results briefings held quarterly and also takes part in individual meetings with shareholders and other investors as needed.

When engaged in IR activities, the necessary information is collected from the relevant departments and coordinated and summarized by the Public Relations & IR Department. The details of IR activities are also confirmed by top management in advance, with due care taken to avoid any conflicts with insider trading regulations.

Through these activities, SUMCO reflects feedback and requests from shareholders and investors in management in an effort to achieve sustained growth and enhance its corporate value in the long-term.



Message to Shareholder



Annual Report 2017

# The Pursuit of Quality and Reliability

### Why SUMCO Addresses Quality and Reliability

As a company that manufactures silicon wafers that represent the base materials for the semiconductors installed in all kinds of electronic devices, we see it as a social responsibility of the highest priority to ensure the safety and reliability of our products while making sure they comply with all applicable laws, ordinances and regulations.

For this reason, the SUMCO Group makes every effort to implement the stable supply of products that meet the quality requirements of customers and further boost customer satisfaction by implementing quality management in an appropriate and effective manner.

### The SUMCO Quality Policy

It is the quality policy of the SUMCO Group to deliver world class quality and reliability through anticipation of future needs; continuously improving products, processes, technology and service for total customer satisfaction.

### Quality Control System

In the SUMCO Group, all sites including affiliate companies in Japan and overseas have implemented quality management systems certified in accordance with IATF16949 and ISO9001 to control quality through all processes from design and development to production and shipment. We have also built an internal quality audit system to ensure continuous efforts to further improve product reliability.

### The SUMCO Group Mission Statement, Quality Policy and Targets



### **Quality Education**

To enhance product reliability and safety, it is necessary for not only those in charge but also each worker to have the mindset of a supervisor and improve their skills.

For this reason, we have developed quality education programs for each job and level of employee and assigned instructors for each education program to each production site to provide necessary education to the human resources that need it whenever required.

In 2018, we conducted over 240 internal seminars in an effort to enhance the knowledge and awareness of quality control on the part of employees.



Quality education at one of the SUMCO seminars

### **Response to Quality Problems**

Should a plant become the subject of a customer complaint, experience an abnormality or other quality problem, the plant handles the problem immediately, investigates the cause and takes measures to prevent recurrence, in order to minimize the impact on customers.

When complaints or internal abnormalities occur, we swiftly deploy a response throughout the entire SUMCO Group as needed. When a best known method (BKM) for a particular problem is available, we ensure this BKM is disseminated to prevent recurrences of similar issues within the Group.

### Flow for Sharing Quality Problems



### Initiatives to Improve Customer Satisfaction Conducting Customer Satisfaction Surveys

To maintain our "first call" status among customers, evaluations received from customers are shared with relevant departments each time for continuous improvements, and analyzed from four different aspects: quality, cost, delivery and service (QCDS).

The results of analysis are shared among management and other relevant departments, incorporated into the improvement plans of each department, and used to further enhance customer satisfaction.

### Communication with Customers

To further enhance customer satisfaction, we strive to improve the quality of products and services through two-way communication with customers.

As part of this initiative to promote communication with customers, we proactively hold technical communication meetings both domestically and internationally in order to grasp customer needs accurately and at an early stage, foster technological development at a rapid pace, and reliably provide products that match customer needs.

At the technical communication meetings, we make proposals based on our unique technologies, as well as check and follow up on the performance of our products. We position these technology conferences as opportunities to win recognition and trust for the Company. The feedback and demands of customers learned from the technical communication meetings are utilized for continuous product improvement of our products and are reflected in business plans, such as for formulating technology development roadmaps that accommodate customers' needs for higher precision and enable product differentiation. By doing so, we strive to gain and maintain a strong presence among customers.

In our initiatives to promote communication with customers, we endeavor to provide the most appropriate information.

### Flow for Sharing Customer Satisfaction (CS) Evaluation Information



### Ensuring the Safety of Products

### Management of the Chemical Substances Contained in Products

SUMCO ensures that the chemical substances regulated by law or those that customers have asked us to eliminate or reduce the use of are managed properly according to internal rules and standards.

### Provision of Safety Data Sheets (SDS)

SUMCO makes available safety data sheets (SDS)based on JIS Z7253 to provide information on the related hazards of chemical substances used by the Company and to give instructions on how to handle them safely.

### Voice 02

Toshiro Tanaka, General Manager-Quality Assurance Department

### Q1. What points do you give the greatest priority to in terms of quality at SUMCO?



Naturally we need to make sure what we produce meets the required specifications of the product, but it is also important when SUMCO products are used, they adequately fulfill the expected function.

Even if a product meets standards, if it deviates from our normal level of quality, we treat it as a non-conforming piece, and always strive to achieve stability in quality that takes performance experienced by the customer into account.

In recent years, the importance of risk assessments has attracted increased attention, and SUMCO is no exception. We have taken proactive steps in this area such as holding seminars and briefing sessions on initiatives to promote effective use of failure mode effect analysis (FMEA). By addressing quality risks through adequate risk assessments, we aim to attain Zero Excursion and Zero Defect.

# Q2. What challenges or fulfilling experiences have you faced in promoting quality control across the entire Group, including overseas?

Overseas, the cultural background of language can differ, and even the same expression can be interpreted differently, which can cause problems as we pursue our work. Similarly in our Japan operations, due to differences in product types or processes, even using the same words can produce a subtly different impression. We pursue quality control initiatives in the hope of understanding and overcoming those differences, and praising one another's efforts when our shared goals are met.

I would count providing support for IATF16949 certification in Indonesia and introducing the SUMCO method of change management procedures among our achievements in terms of quality improvement initiatives. We are working with the help of overseas departments to develop quality assurance systems that span the entire SUMCO Group. Governance

# The Supply Chain

### Why SUMCO Addresses the Supply Chain

Year after year, stakeholders have been exhibiting a growing interest in companies' social responsibility through the supply chain in the course of their business activities.

In light of these growing concerns, the SUMCO Group believes it is important to share CSR-related societal demands with suppliers and to collaborate with them on issues including human rights, labor, safety, the environment and ethics in the supply chain.

### Basic Stance on CSR Procurement

SUMCO promotes responsible procurement activities to fulfill its social responsibilities across the supply chain. We thoroughly share various issues related to the supply chain with suppliers and tackle procurement activities with those issues in mind to ensure that customers can use our products with peace of mind and to satisfy our various stakeholders.

### Management System

In addition to procurement departments, the departments at SUMCO responsible for quality assurance, CSR, environmental management and safety and health coordinate on supply chain management efforts. Specifically, we issue various questionnaire forms (described later) and collect the responses, conduct audits of quality, CSR and the environment respectively and reflect the results obtained from these efforts in our assessment of suppliers in an effort to develop more robust supply chain management.

### Procurement Policy

In the procurement of materials, SUMCO strives to engage in fair and rational trade with suppliers based on mutual trust. With the cooperation of suppliers, we also actively promote initiatives to fulfill our corporate social responsibilities, including compliance with related laws, ordinances and social norms, and efforts to support global environmental conservation.

- 1. Transactions based on partnership
- We will develop favorable partnerships with our suppliers based on mutual trust. 2. Fair transactions
- We will ensure that our procurement is clean, open and fair.
- 3. Promotion of value analysis (VA) activities We will encourage our suppliers to conduct value analysis (VA) activities in order to propose cost improvement methods,
- new materials, new technologies and others, and will actively adopt such proposals. 4. Compliance in procurement activities
- We will comply with laws, ordinances and social norms in the course of our procurement activities.
- 5. Fulfillment of corporate social responsibilities We will fulfill our social responsibilities when conducting procurement activities across our entire supply chain, including our suppliers.
- 6. Green procurement
- We promote the procurement of materials with minimum environmental impact.

### **CSR Procurement Activities**

Through periodic briefings to suppliers and procurement activities such as those described below, we request our suppliers to make voluntary efforts to promote CSR management.

### (1) Supplier Handbook

To help suppliers understand our approach to procurement activities, we distribute Supplier Handbook, which includes a section on our procurement policy and requests to suppliers including items relating to CSR. The Supplier Handbook is posted on our dedicated procurement website used in SUMCO's daily procurement activities

In this handbook, we ask suppliers that comprise our supply chain to promote CSR. As guideline to be followed in implementing CSR management, we ask suppliers to utilize the RBA (Responsible Business Alliance) Code of Conduct (formerly known as the EICC Code of Conduct), and also encourage subcontractors and sub-subcontractors to implement CSR management in a similar fashion.

### (2) Green Procurement Guidelines

To promote the procurement of products with a minimal environmental impact (green procurement), we have also posted Green Procurement Guidelines on the dedicated procurement website. The guidelines summarize relevant laws and ordinances, the RoHS Directive, REACH regulations, prohibited or controlled substances designated in customer requests and other pertinent information.

### (3) Raw Material Surveys

SUMCO's procurement and environmental management departments work together to promote green procurement by asking suppliers to submit certificates of non-use of prohibited substances as well as issuing and collecting various guestionnaires, in order to confirm that substances specified in the Green Procurement Guidelines are not being used.

### (4) CSR Ouestionnaires and Audits

We distribute and collect CSR questionnaires based on the RBA Code of Conduct to our main suppliers to review the status of CSR initiatives at each company. The questionnaires are issued to more than 200 such companies, and SUMCO has managed to secure responses from almost all of them. Based on the results of these questionnaires, we undertake regular CSR audits that include field audits of a given number of suppliers in order to verify the state of compliance with the items in the CSR questionnaire and confirm the status of improvements.

### Major Items in the CSR Questionnaire

1. Human Rights and Labor (1) Freely chosen employment Examples: Prohibition of forced and bonded labor (2) No use of child labor Example: Prohibition on child labor, not having young workers engage in dangerous work (3) Limitation on Working Hours Example: Compliance with laws and ordinances on working hours and holidays (4) Lawful Wages Examples: Compliance with laws and ordinances on minimum wages (5)Humane Treatment Examples: Prohibiting harassment and establishing disciplinary mechanisms (6) Non-Discrimination Examples: Prohibiting discrimination on the basis of race, nationality, gender, age, sexual orientation, religion, disabilities or other traits (7)Freedom of Association 2. Safety and Health (1) Occupational Safety Examples: Obtaining and renewing permits and licenses, providing personal protective equipment (2) Preparedness for Emergency Examples: Setting up appropriate emergency evacuation doors and evacuation routes, conducting drills

### **Initiatives to Reduce Environmental Impact**

Through the aforementioned CSR questionnaires and CSR audits, SUMCO strives to reduce environmental impact across the entire supply chain by incorporating items designed to review initiatives aimed at reducing the amount of waste generated, curbing greenhouse gas emissions and reducing the use of electricity, water and energy, and by recognizing suppliers implementing continually concrete reduction activities by setting numerical targets or taking other measures.

### Strengthening of Business Continuity Plans for Material Procurement

SUMCO promotes optimum inventory control and multi sources for procured materials according to the level of risk involved.

If a disaster or accident should occur, we immediately launch an investigation into its impact, while we take all possible steps for emergency procurement, including finding alternative suppliers and adopting alternative products, thus ensuring the necessary framework to do all we can to minimize the impact on production.

- 1. Continuing optimum inventory control based on the characteristics of each procured material We will review inventory quantities, storage sites, transportation methods and other aspects for each type of material whenever necessary.
- 2. Source investigation and risk response
- We will investigate and confirm production sites and sources of major items and respond according to the level of risk involved.
- 3. Maintenance, enhancement and review of business continuity plan for each item procured We will develop business continuity plans for each major item so that we can properly respond to the occurrence of any risk. 4. Risk assessment of suppliers
- We will periodically conduct checks on our main suppliers with respect to their financial condition, production systems, business continuity plans and other aspects, and respond appropriately depending on the results.

Environmental

3. Environment	
(1) Compliance with Environmental Laws and Ordinances	
Examples: Obtaining the necessary licenses and othe	er
permits, compliance with environmental standards	
(2)Pollution Prevention and Waste Reduction	
Examples: Reducing waste and greenhouse gases,	
controlling wastewater	
(3)Reduction in Energy Consumption and Greenhouse	
Gas Emissions	
4. Ethics	
(1)Compliance with Laws	
Examples: Prohibiting bribery and corruption, estab	
lishing internal reporting systems	
(2)Fair Business Activities	
Examples: Compliance with laws and ordinances on	
fair trade, competition and advertising	
(3)Information Management	
Examples: Appropriate management of customer	
information and protection of intellectual property	

(3)Prevention of Occupational Injury and Illness

- information and protection of intellectual property riahts 5. Business Continuity (1) Risk Assessment and Risk Management
- (2)Business Continuity Plan (BCP)
- 6. Management Systems

## **Respect for Human Rights**

### Why SUMCO Addresses Human Rights

The SUMCO Group regards respect for basic human rights to be an important social responsibility. We pursue a number of initiatives to be a company that "values people" and respects the human rights of all people associated with the SUMCO Group.

### **Basic Approach**

The SUMCO Group pledges in the SUMCO CSR Policy to maintain safe, healthy, comfortable and appropriate workplace for everybody working at SUMCO and to have a high regard for human rights, ability and personality, and aspires to realize fair and diverse ways of working. To this end, we strive to create a workplace where employees are motivated to work hard. Based on this policy, the SUMCO Group prohibits prejudicial treatment and workplace harassment based on race, religion, gender, age or for other illegitimate reasons and documents such rules in the SUMCO Code of Corporate Conduct and various regulations. In addition to the internal reporting hotline mentioned on page 13, we have also established harassment consultation services at each Company site.

SUMCO also has clearly stated policies thoroughly prohibiting child labor and forced labor which are strictly enforced, and we have also established mechanisms to ensure compliance with

### Maintaining and Enhancing a Pleasant Working Environment

SUMCO regularly conducts human rights training including education on various forms of harassment for all employees, and makes every effort to improve awareness of these issues in the workplace.

In addition, based on the group analysis results of stress checks conducted annually, we formulate and implement action plans aimed at improving the working environment at each workplace.

Additionally, as a part of efforts to maintain and enhance a pleasant workplace environment, the SUMCO Group also conducts various in-house recreation activities and deepens exchanges between employees at each site to revitalize workplace communication.

### Establishment of a Harassment Consultation Service

SUMCO has established a Harassment Consultation Service to serve as the point of contact for employees to consult about harassment-related issues. To ensure that employees can casually seek advice at any time, the service works on three principles: (1) protecting the privacy of employees seeking consultation; (2) prohibiting disadvantageous treatment of related persons; and (3) dealing with consultations in a fair manner. The consultation services are staffed by both male and female consultants, and information about the consultation service is posted to the corporate intranet on an ongoing basis to ensure the service is well known to employees. In 2018, the Harassment Consultation Service handled two consultation cases. statutory standards concerning working hours, holidays, wages and other such requirements.

### Promotion Framework

The SUMCO Group annually convenes the Human Rights Awareness and Promotion Committee, a company-wide committee that includes Group companies, and engages in human rights awareness initiatives on a regular basis. The committee confirms the policies and details of human rights awareness initiatives for each fiscal year, while each plant or Group company implements activities in line with this policy. The activities include invitation of outside experts to give talks and awareness training using audiovisual materials.

### Major Themes Covered in Human Rights Awareness Training

### Respect for diversity

- Human rights for the elderly
- Workplace harassment
- Sexual harassment
- Harassment related to pregnancy, childbirth,
- childcare or nursing care leave in the workplace
- Mental health issues in the workplace

### Labor-Management Relations

SUMCO's basic labor-management policy is to maintain sound relations based on mutual understanding and trust, and to solve issues through discussion for the perpetual development of the Company and improvement of working conditions.

Specifically, with the aim of promoting communication (sharing information) and managing business operations under concerted efforts between labor and management, high-level labor-management meetings are generally held twice a year. In addition, at production briefings and labor-management meetings held once a month at each plant, the plant managers and union representatives meet to exchange information and views concerning the production situation and other matters. Meanwhile the Labor-Management Study Committee meets regularly throughout the year to discuss important labor-management issues such as the improvement of working conditions and review of various systems from multifaceted, holistic and long-term perspectives, thus allowing labor and management to work closely together to address various issues.

### Human Resources Development

As declared in the SUMCO Vision, SUMCO aspires to become the "World's Best in Technology." To reach this goal, diversified training opportunities are provided to employees at all levels, from new recruits to managers and executives. We encourage employees to stay abreast of the changing times, making every effort to foster the development of human resources who will be able to think and act independently. Each year, up-and-coming engineers are also given the chance to present their research findings to senior management as a means of enhancing their motivation. In pursuit of "Empower Employee Awareness of Profit," another element to the SUMCO Vision, the SUMCO CEO AWARD was established as the SUMCO Group's highest award, part of a measure to boost employee awareness of participation. The award is annually presented to individuals and organizations that have made meaningful contributions to enhancing corporate value. Along with this award, the Group also holds presentations by TPM teams annually in order to recognize outstanding success.

Moreover, to achieve "Competitiveness in Overseas Markets" as declared in the SUMCO Vision, we are working to cultivate an awareness of understanding and respecting a diverse range of cultures and values within the Group, and are endeavoring to develop globally competitive human resources by enhancing programs such as study abroad and foreign language learning schemes.



SUMCO CEO AWARD



Engineer Presentation Contest

### Utilizing and Developing a Diverse Workforce

Employment of People with Disabilities

In 2004, SUMCO established SUMCO Support Corporation, and in May the same year, SUMCO Support was designated as a special subsidiary company by the government.

Ever since, people with disabilities have flourished in a wide range of business fields at SUMCO Support and at various other Group companies.

Moving forward, the SUMCO Group will continue its efforts to fit the right person to the right job in order to help individual employees reach their full potential, as well as to provide employment opportunities and maintain and improve supportive work environments for people with disabilities.

### Employment of Older Workers

We have set up a re-employment system by which employees, if they are well-motivated and wish to continue working after mandatory retirement at age 60, can continue working until



### Employment Ratio of People with Disabilities (SUMCO Group [Japan])

age 65. This allows them to continue working while leveraging their extensive experience, sophisticated skills and high-level abilities.

Additionally, by maintaining the same compensation applied at the time of mandatory retirement even after a regular employee is re-employed, the system allows employees to contribute with a strong sense of motivation even after reaching mandatory retirement age.

Utilization of Global Talent

The SUMCO Group maintains manufacturing plants in the US, Taiwan and Indonesia, as well as sales offices around the world. By utilizing local hiring and actively working to hire talented global human resources regardless of nationality, the SUMCO Group seeks to achieve even further growth as a global company.

	Regular e		Temporary employees
SUMCO	3,8	55	431
	8,017		
Consolidated	Japan	5,711	927
	Overseas	2,306	

### Number of Employees (full-time equivalents)

### Number of Employees by Region (Consolidated)

Region	No. of employees
Japan	5,711
North America	601
Southeast Asia	340
East Asia	1,343
Europe	22
Total	8,017

### Breakdown of Employees (Consolidated)

	Managers	General employees	Total
Male	768	6,538	7,306
Female	47	664	711
Total	815	7,202	8,017



### Measures to Help Employees Balance Work and Childcare Responsibilities

To provide employees who are raising children with a more comfortable workplace environment and to help them balance work with child-rearing, SUMCO has established child-care leave periods that are longer than required by law, along with a diverse short working hour system. In 2016, the Company set up SUMCO Nursery School Imari as an in-house day-care facility at our Kyushu Plant in the Imari area, the largest site across the SUMCO Group. We also provide a day-care support allowance at sites other than the Imari area.

Additionally, as a new form of regional contribution, the facility is also a community day-care service based on the Japanese government's Comprehensive Support System for Children and Childrearing. Accordingly, a portion of the capacity is made available to local residents who are not SUMCO employees.

Looking ahead, SUMCO will continue to pursue a variety of initiatives to put in place a workplace environment in which a diverse array of employees can excel while ensuring a harmonious relationship with the local community.

### Voice 03



Chihiro Kuroki Imari Crystal Engineering Section Crystal Engineering Department

Q1. How do you use the SUMCO Nursery School Imari? How do you think the facility can be utilized to balance work and childcare responsibilities once returning to work?

Since I currently utilize short working hour (9:00 a.m. to 4:00 p.m.), I make use of the facility from 8:30 a.m. to 4:30 p.m. on weekdays. For my household, since our parents homes are far away and there is no one nearby we can leave our child with, we have no choice but to use the nursery school in order to work while raising a child.

The facility is located about ten minutes from the workplace, which is helpful in dealing with issues such as being called over if my child suddenly comes down with a fever. Each of the classrooms also have cameras installed. As this lets me monitor my child's condition in real-time, I can enjoy greater peace of mind when leaving my child in their care. What's more, since I'm assured of a spot for my child, I haven't had to worry about hunting for a facility. I think the fact that I was basically in a position to resume work from the outset allowed me to spend pregnancy, childbirth and childcare leave with peace of mind

### Q2. Apart from SUMCO Nursery School Imari, have you been helped by any other systems such as childcare leave or workplace support?

When I experienced trouble during pregnancy, or when I have needed to take time off work at short notice when my child has fallen ill, my supervisor and colleagues have responded with flexibility, and I am extremely grateful for their support. Moreover, after finishing childcare leave, I was placed back into the same department and I was able to resume work without a lot having changed. Thanks to that, I was able to get used to my current lifestyle in short order. My application for short working hour was also accepted without hesitation and I have been given consideration in terms of assigned workload and other aspects. I think these have also made it a truly pleasant workplace.



Children of SUMCO Nursery School Imari

# Initiatives for Safety and Health

### Why SUMCO Addresses Safety and health

The safety and health of employees is essential for them to be able to reach their full potential and work with vitality. The SUMCO Group sees ensuring the safety and health of its employees as one of its crucial social responsibilities.

In the SUMCO CSR Policy, the SUMCO Group pledges to "maintain safe, healthy, comfortable and appropriate workplaces for everybody working in SUMCO, shall have a high regard for human rights, ability and personality, and shall realize fair and diverse ways of working." Based on this, the SUMCO Group promote safety and health initiatives under the following basic principles and policy.

### SUMCO Group Basic Policy on Safety and health

### **Basic Principle**

Under the principle that "the safety and health of employees takes the highest priority over all," the SUMCO Group is committed to "creating a safe and pleasant workplace environment supportive of good mental and physical health" through leadership by supervisors and through active communication across the organization. Basic Policy

- 1. We will collectively and thoroughly strive to create a workplace where all members adhere to relevant laws and regulations as well as rules stipulated in manuals and work procedures.
- 2. In the event of any work-related accidents, we will collectively and thoroughly analyze the root causes and implement measures to prevent their recurrence.
- 3. We will collectively and thoroughly strive to create an open workplace environment, as well as to maintain and promote their mental and physical health and to prevent occupational illnesses.
- 4. We will collectively and thoroughly engage in raising awareness of traffic consideration and promote traffic safety initiatives as models for society.

### Safety and health Initiatives

#### Promotion Framework

For the purpose of maintaining and enhancing the Group's levels of safety and health, the SUMCO Group annually convenes the Company-wide Safety and Health Committee in which report on the status of safety and health-related initiatives and information sharing are made.

The committee, attended by the Chief Health Officer and other executives, reports on Group-wide activities related to safety, health and hygiene management as well as major work-related accidents, and also reviews and approves safety and health-related issues and targets to be addressed in the following fiscal year.

Additionally, each plant defines policies and objectives related to safety and health for each fiscal year based on company-wide safety and health issues, and engages in daily activities to achieve those objectives.

#### Occupational Safety and Health Initiatives

The SUMCO Group has introduced an Occupational Safety and Health Management System (OSHMS) which is implemented with the aim of achieving zero accident in the workplace.

Under the system, the management defines a sequence of "Plan - Do - Check - Act" (PDCA) actions to manage safety and health on a regular and voluntary basis, with the help of employees. This is a safety and health management framework designed to prevent work-related accidents, advance the health of employees, promote the formation of a pleasant workplace environment and raise the level of safety and health in the workplace.

Major Initiatives to Prevent Work-Related and Traffic Accidents The SUMCO Group conducts annual system audits (internal audits) of all plants in accordance with its Occupational Safety and Health Management System. SUMCO also endeavors to maintain and enhance safety management levels by seeking to prevent work-related accidents through promoting voluntary safety and health initiatives and encouraging the advancement of health and the formation of a pleasant workplace environment.

Additionally, when workers notice a potential hazard, they are obligated to report on it as a near miss case. Through the case reports and risk assessments, the risk factors at each workplace are identified. We try to avert accidents by implementing countermeasures to these risks based on hazard levels, and reducing the degree of risk posed accordingly.

Information on these risks and the corresponding countermeasures are shared across the entire SUMCO Group through Company-wide meetings attended by the safety and health personnel at each plant, safety exchange meetings attended by the workplace safety and health promotion personnel at each plant, and safety and health committee meetings at each plant.

Additionally, through safety patrols conducted at each plant and other regular safety patrols of each plant by the Safety and Disaster Prevention Department, labor unions and industrial physicians, we carry out inspections and other guidance on the state of safety and health management initiatives at the workplace as part of efforts to attain high levels of safety and health.

### Safety and Health Education and Training Initiatives

The SUMCO Group focuses on employee education and training with the aim of preventing work-related and traffic accidents.

In terms of matters related to safety and health, we strive to prevent accidents and minimize any damages or injuries caused by accidents. We achieve this by raising employees' awareness while also having them learn about what actions to take in the event of an emergency, not only through tiered safety and health education, but through workplace safety meetings, risk prediction training (KYT), the viewing of safety-related DVDs and efforts to enhance sensitivity to danger by way of simulated hazards in a "safety dojo."

Preventing traffic accidents is another key challenge, and the SUMCO Group strives to prevent traffic accidents by providing traffic accident prevention training along with the viewing of DVDs on traffic accident prevention, and KYT using videos of traffic accidents, and by providing driving analysis and guidance based on drive recorders installed in vehicles.

### Accident Frequency Rate \*1



2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 (year)

\* 1 Accident frequency rate = Number of workers killed or injured in occupational accidents / Total working hours  $\times$  1,000,000

\* 2 Accident frequency rate for all manufacturing industry in 2018 has not been disclosed as of publication of this report.

#### Safety and Health/Disaster Prevention Awards Received (in the past five years)

Year & month	Award	Awarded site
February 2014	Ministry of Health, Labor and Welfare Class 1 No Accident Record (7 million hours)	Kyushu Factory (Kubara), SUMCO Corp.
May 2014	Letter of Appreciation from Saga Pref. Governor for Safety Management of High-Pressure Gas	Kyushu Factory (Saga), SUMCO Corp.
July 2015	Hokkaido Labor Bureau Director's Commendation	Chitose Plant, SUMCO Corp.
March 2016	Recognized by the Volunteer Fire Corps Factory of the Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications	Kyushu Factory (Imari), SUMCO Corp.
June 2016	Ministry of Health, Labor and Welfare Class 2 No Accident Record (10.5 million hours)	Nagasaki Plant, SUMCO TECHXIV Corp.
October 2016	Excellent Safety Operations Facility Bronze Medal	Miyazaki Plant, SUMCO TECHXIV Corp.
October 2017	Yamagata Labor Bureau Director's Commendation	Yonezawa Plant, SUMCO Corp.
October 2017	Letter of Appreciation from Miyazaki Fire Prevention Committee	Miyazaki Plant, SUMCO TECHXIV Corp.
December 2017	Letter of Appreciation from Japanese Red Cross Society (Blood donation)	Chitose Plant, SUMCO Corp.
June 2018	Hazardous Material Safety Awards from Japan Association for Safety of Hazardous Materials	SUMCO Technology Corp.
September 2018	Commendation as Model Business Site for Safe Driving Management from the Miyazaki Prefecture Police Headquarters	Miyazaki Plant, SUMCO TECHXIV Corp.
October 2018	Silver Order of Merit from Japan Red Cross Society	SUMCO Technology Corp.

### Participation in Traffic Safety Initiatives

SUMCO's Chitose Plant participates in activities calling for traffic safety as part of the traffic safety campaign each spring and autumn. To coincide with the arrival of the tourism season in Hokkaido accompanied by a sharp increase in the number of rental cars, the employees line up along a road to remind drivers and pedestrians about traffic safety.

The Kyushu Plant is engaged in traffic safety initiatives as a member of the Shiroishi district's Safe Driving Supervisors Committee, including annual participation in the "Traffic Mirror Cleaning Initiative (March)" for mainly local elementary and junior high schools and "Early Headlight Lighting Initiative (November) to encourage drivers to turn on their headlights before it gets dark.

SUMCO Technology Corporation also promotes safe driving both internally and externally through participation in traffic accident prevention campaigns (at New Year, spring, autumn, year-end) and early headlight lighting initiative as a member company of the Noda Regional Safe Driving Supervisors Council



Appealing to drivers to drive safely



Early Headlight Lighting Initiative

### **Promotion of Health**

The SUMCO Group's Approach to Employees' Health Under the principle that "the safety and health of employees take the highest priority over all," the SUMCO Group strives to create a bright and lively workplace with high job satisfaction and has announced the "SUMCO Group Health Declaration" both internally and externally.

### SUMCO Group Health Declaration

The SUMCO Group considers employee's health to be an important management resource and strives to be a group in which all employees work energetically by supporting the voluntary health promotion by each employee, as well as implementing active organizational initiatives.

#### Health Promotion Framework

The Company-wide Health Committee and Health Promotion Meeting are convened regularly. These bodies report on the status of initiatives and attainment level of health objectives for each site and consider new measures.

Specifically, we have established a Health Promotion Section under the Human Resources Department while the Executive Vice President has assumed the position of Chief Health Officer. Further, under the leadership of the supervising industrial physician, the industrial physicians, full-time public health nurses and regular nurses offer individual health guidance, meetings and smoking cessation support, as well as conducting initiatives to improve the workplace environment through stress checks, mental health training and other services.

#### Health-related Meeting Bodies



Specific Initiatives for Health Promotion

We promote initiatives to maintain and improve the health of each employee as a company through various well-planned company-wide initiatives.

To further enhance our health initiatives, in 2018 we sent letters to employees and their families to encourage greater awareness of health issues. Since maintaining and improving our health is based on regular and voluntary activities at the individual level, we ask that employees become conscious of health issues and actively engage in various health initiatives with their families.

In recognition of initiatives aimed at employee health, the SUM-

CO Group was certified under the 2019 Certified Health & Productivity Management Outstanding Organizations



Recognition Program (White 500) selected by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.

Examples of Specific Health Promotion Initiatives

- 1. Activities promoting smoking cessation
- ·Blanket ban on smoking in Company buildings (completed in 2018)
- · Inter-workplace anti-smoking challenge race
- ·On-site health classes (anti-smoking, mental health)
- · Smoking cessation outpatient services (some business sites) 2. Mental health
- · Initiatives to improve the workplace environment based on stress check results
- · Mental health training and consultation framework for counsellors and other staff
- 3. Measures to address lifestyle-related diseases and other issues ·Walking campaign, contracts with sports gyms
- · Campaigns to encourage all employees to undergo secondary examinations after regular medical checkups
- · SUMCO fall prevention gymnastics (during working hours)

### Voice 04

in a lively fashion

Minako Iyadomi Supervising Industrial Physician Striving to create a workplace enviror



In 2003, manufacturing sites, the core of the SUMCO Group began efforts to improve the workplace environment using group analysis results of stress checks, and the initiative has since spread throughout the Company. Additionally, from 2007, "work engagement" was added to the stress check items as an indicator of positive mental health, offering valuable feedback on each employee and workplace.

In 2019, these workplace environment improvement initiatives that are now entering their 17th year underpin efforts aimed at the sustainable development of a workplace in which employees can work "in a lively fashion" as a semiconductor material manufacturer which is expected to exhibit advanced technological and development capabilities while strongly affected by external factors in the silicon cycle.

For employees with disabilities, we also coordinate with attending physicians and public organizations such as employment centers for persons with disabilities. By consulting with the relevant persons while considering and supporting persons with disabilities based on their unique characteristics, we strive to develop a workplace in which all employees can demonstrate their own abilities and work "in a lively fashion".

# **Community-based Social Contribution Activities**

### Why SUMCO Addresses the Local Community

The SUMCO Group sees existing in harmony with the local community and contributing to the region as one of the corporate social responsibilities

In SUMCO CSR Policy, the SUMCO Group declares that "SUMCO shall respect various cultures and histories, and shall interact with society and the local communities," and carries out a range of activities in an effort to be a company that can contribute to the local community as a good corporate citizen.

### Participation in Cleaning Activities and Environmental **Conservation Initiatives**

SUMCO's Chitose Plant implements a clean-up program on approximately 1.5 km of sidewalks along the main roads of the Chitose Industrial Complex where the plant is located. Plant members pick up empty cans and trash that have been discarded, as well as fallen leaves and other refuse. Last year, in a rare occurrence, Hokkaido was hit by a typhoon, and the road surface was covered in fallen leaves, but we will continue to implement timely clean-up efforts so that pedestrians can walk on the roads in comfort.

SUMCO's JSQ Division participates annually in the Omono River Basin Joint Clean-up organized by Akita City with the participation of local residents and nearby companies.



no River basin joint clean-up

SUMCO's Yonezawa Plant actively engages in various local environmental activities as a member of the Hachimanpara Corporate Council made up of companies located in the Hachimanpara Industrial Park. The activities include planting seasonal flowers in median strips of roads inside the park and cleaning up areas along major roads.

AT the Nagasaki Plant of SUMCO TECHXIV Corporation, many employees and their families participate each year in the cleanup of the Omura Bay coastal area organized by the Omura Bay Cleanup Project.



Maintaining flower beds along medi- Omura Bay coastal area joint clean-up

Each year, the Miyazaki Plant of SUMCO TECHXIV Corporation also works with nearby companies in a local cleanup initiative called the "Kiyotake-cho KINRIN Clean Activity," and also works on an environmental conservation project for the Kiyotake River

in association with local groups.

SUMCO Technology Corporation participates annually in the Edogawa Clean Campaign organized by the Edogawa River Office and local municipalities near Noda City, collecting discarded cans and bottles, etc. and performing cleanup activities on the riverbed, embankments and side ditches along the Edogawa River. Additionally, the company conducts a cleanup campaign through the plant grounds and along nearby public roads and sidewalks every two months to keep the areas inside the industrial park clean

### **Greening Initiatives**

At the Chitose Plant, we work on beautification of the surrounding environment. In June, after the snow season, we enter the "Flower-Filled Contest" hosted by Chitose City's greening promotion foundation (Chitose Environment and Greenery Foundation) and plant colorful flowers such as marigolds and scarlet sages in the green belt on roads around the plant.

At the Noda Operation Department of SUMCO Support Corporation\*, we conduct "Flower Project" initiatives including the voluntary creation of flower beds and planting of seeds and seedlings, thereby delighting visitors to the Noda area and employees alike.

\* SUMCO Support Corporation is a special subsidiary company of SUMCO that was established with the purpose of employing persons with disabilities

### Support for a Vocational Facility for People with Disabilities

At the Yonezawa Plant, we collect empty plastic bottles and cans from the plant and employees' homes and provide them via recycling operators to vocational facilities for persons with disabilities to support their employment. Using the money received from the recycling firm for the sale of such bottles and cans, the plant also periodically purchases useful items and donates to the facility.

### Participation in Emergency Drills at Welfare Institutions

At the Nagasaki Plant of SUMCO TECHXIV Corporation, we have organized an external rescue team, and joint rescue drills under the guidance of members of the Omura Fire Department are conducted every year to prepare the team for fire disasters at nearby welfare institutions.



Emergency drill at a welfare

### Participation of Female Employees in Safety and **Health Patrols**

At the Nagasaki Plant of SUMCO TECHXIV Corporation, female employee representatives take part in patrols of business sites and factories within the prefecture as members of the "Support Team for Shining Women," a safety and health patrol team for women formed by the Nagasaki Labor Bureau.



Participation of Female Employees in Safety and Health Patrols

#### Interaction with local high schools

At the Nagasaki Plant of SUMCO TECHXIV Corporation, we have maintained a relationship with local high schools since the establishment of the plant. Every year, we host study tours to inspect the production process or the extra high voltage monitoring room for the power intake facility, as well as providing internships. Responding to requests from local high schools, we also send employees to give lectures on semiconductors.



Dispatching employee instructors to local high schools

### Participation and Sponsorship of Sports Events

SUMCO participates in and sponsors local sports events. The SUMCO Kyushu Factory co-sponsors the IMARI HALF-MARA-THON every year. In 2019, more than 3800 participants attended the competition and they ran through the city in the early spring weather.

On January 27, 2019, the SUMCO Imari Road Relay Race Team fielded by the Kyushu Factory took part in the 72nd Tozai Matsuura Relay Race Competition (sponsored by Saga Shimbun) and won its 13th championship for two consecutive years while breaking the competition record. The event has a long tradition, attracts many regional and company-affiliated teams, and contributes to revitalization of The 72nd Tozai Matsuura the region.



elay Race Competitio (courtesy Saga Shimbun)

### Voice 05

Ichiro Omura Director Next Gen. Power Electronics Research Center Professor Graduate School of Life Science and Systems Engineering Department of Biological Functions Engineering Kyushu Institute of Technology

### Q1. What are you working on in the SUMCO joint research course, and how significant is it?

Kyushu Institute of Technology, we launched a research course inside the department on a joint basis with SUMCO in fiscal year 2017. Under the theme of high-quality power semiconductor wafer evaluation methods and the direction of specially appointed professor Kaneda, we have conducted a number of joint research projects with SUMCO researchers and researchers at our Next Generation Power Electronics Research Center. In particular, we share trends in power semiconductor-related technologies and pursue research that prioritizes the development of high-precision wafer quality evaluation technologies and the application of simulation technologies. We also actively cooperate in fostering the development of junior human resources from SUMCO. Through establishment of joint research courses, issues can be shared between companies and universities, and excellent result-focused outcomes can be produced

### Q2. SUMCO has been pursuing coordination between industry and academia along with initiatives to contribute to local communities. What do you think about these activities?

In fiscal year 2018, the Next Generation Power Electronics Research Center received the Minster of the Environment Award for Global Warming Prevention Activity for its research into power semiconductors. Moreover, SUMCO is a top global producer of high-quality wafers that are essential in the manufacturing of power semiconductors that contribute to lower CO2 emissions. By having both of us coordinate with one another from a long-term perspective, I think we are bringing greater sophistication to semiconductor technologies and low-carbon technologies in the Kyushu area, strongly promoting the development of human resources in the field, and making significant contributions to the social challenges of preventing global warming and utilizing electricity effectively.



### Participation in Local Events

Each year at the Uesugi Snow Lantern Festival, a famous winter festival that takes place in Yonezawa, SUMCO's Yonezawa Plant produces snow lanterns, a winter tradition in Yonezawa, in an effort to vitalize the local area.

In order to bring excitement to local events as a company that has established business sites in Imari City, SUMCO's Kyushu Factory participates in the Imari Autumn Festival – Imari Dance in All as a means of contributing to local revitalization.

Additionally, SUMCO's JSQ Division supports activities of the "Barajima Kanto Group," which is located in Barajima, Akita and headed by a SUMCO Employee. The group participates by performing in the Akita Kanto Festival every year. At the Kanto Myogikai\* this year, the group unfortunately failed to win a prize, but their energetic pole lantern performance at the "Yoru Kanto\*" event earned thunderous applause from spectators gathered from around the country.

\*The "Kanto Myogikai" is a pole lantern performance contest that takes place during the day as part of the Akita Kanto Festival, with the objective of pre-serving skills in lantern balancing and its musical accompaniment. Pole lantern performances during the night are called "Yoru Kanto."



Participates in an annual event, the "Imari Autumn Festival—Imari Dance in All

### Voice 06

Giles Barfield Senior Manager SUMCO Europe Sales Plc (SES)

### Please let us know the details of your donation and support activities to Foodbank conducted at 2018.



In SES we decided, as part of honouring SUMCO's mission statement "to be a good neighbour in our community", to do something that would help people in our community. We chose to volunteer at a foodbank as this should help a large portion of some of the most vulnerable people in the community. Foodbanks are volunteering organisations that collect donated food and distribute it to the poor and needy.

Their services are in more demand than ever due to the overall economic climate. SES worked closely with a foodbank in South London, about 7.5km away from our office, to find out when was the best time to support them.

Foodbanks tend to receive a large amount of donations in the run-up to Christmas, but these donations have to last for most of the following year. SES agreed to send two teams of volunteers on one of the foodbank's busiest days of the year for donations. At this time the few members of staff are overrun with donations and struggle to keep thing



### organised.

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Performance for the ISO Division

Armed with a lot of energy and some 5S techniques, the members of SES went ahead to help the foodbank reorganise the collected food into the various food groups as well as put it in date order to ensure that the shortest sell by date food was used first and that nothing went to waste.

The foodbank was exceptionally pleased with SES's help as they would never have had the time to do it themselves during such a busy period. SES members brought some of their own food to donate to the foodbank as well as donations to ensure that the foodbank was able to continue supporting the local community when the Christmas stocks had been used up.

All SES members thoroughly enjoyed the experience.



The donation and support activity to Foodbank by SES



### Site Data

2018 data on the acquisition status of ISO 14001 certification for the SUMCO Group's business sites/plants and regulated substances discharged from each site/plant to the surrounding air and water

Name of business site/plant		Kyushu Factory (Nagahama)	Kyushu Factory (Kubara)	Kyushu Factory (Saga)
Scope of bus	Scope of business Design, development and manufacture of silicon wafers		Design, development and manufacture of monocrystalline silicon ingots and silicon wafers	Design, development and manufacture of monocrystalline silicon ingots and silicon wafers
	Examining organization	Japan Quality Assurance Organization	Japan Quality Assurance Organization	Japan Quality Assurance Organization
Status of acquisition of ISO 14001:2015 certification	Date of acquisition	January 11, 1999	January 11, 1999	January 11, 1999
	Date of renewal	January 11, 2020	January 11, 2020	January 11, 2020

Air			Measurement results (regulation value)	
Nitrogen oxides (NOx)	ppm	Boiler 89 (150)	Boiler 51(150)	Boiler 67 (110)
Sulfur oxides (SOx)	m³N/h	ND (K-value regulation 17.5)	ND (K-value regulation17.5)	/
Soot and dust	g/m³N	Boiler∕(∕)	Boiler∕(∕)	Boiler ND (0.001)

Water		Regulation value	Measurement result	Regulation value	Measurement result	Regulation value	Measurement result
Biological oxygen demand (BOD **1)	mg∕ℓ	/	/	/	/	10	7.6
Chemical oxygen demand (COD *2)	mg∕ℓ	30	9.7	30	7.1	/	/
Suspended solids (SS)	mg∕ℓ	30	12	30	4	25	5
N-hexane extract	mg∕ℓ	5	ND	5	ND	3	ND
lodine consumption	mg∕ℓ	/	/	/	/	/	/
Fluorine and its compounds	mg∕ℓ	8	5.4	8	3.38	3	0.99
Ammoniac nitrogen	mg∕ℓ						
Nitrate nitrogen	mg∕ℓ	80	15	80	24	100	14.1
Nitrite-nitrogen	mg/ l						
Nitrogen content (T-N)	mg∕ℓ	120	36	120	28	60	18.2
Chromium content (T-Cr)	mg/ l	0.2	ND	0.2	ND	0.2	ND
Phosphorus content (T-P)	mg∕ℓ	12	0.41	12	0.36	8	1.52
Arsenic	mg∕ℓ	0.05	ND	0.05	ND	0.1	ND
Trichloroethylene	mg/ l	0.1	ND	0.1	ND	0.1	ND

\*1. In case of discharging treated wastewater into the river, the drainage restriction of biological oxygen demand (BOD) applies. \*2. In case of discharging treated wastewater into the sea, the drainage restriction of chemical oxygen demand (COD) applies.

\*Numbers list the maximum annual figures.

"/" denotes non-applicability

denotes an unmeasured item as the regulated substance is not used. "ND" denotes non-detection

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### Site Data

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Name of busines:			Yonezawa Plant
Scope of bu	siness	Manufacture of silicon wafers	Design, development and manufacture of monocrystalline silicon ingots
	Examining organization	Japan Quality Assurance Organization	Japan Quality Assurance Organization
Status of acquisition of ISO 14001:2015 certification	Date of acquisition	January 11, 1999	January 11, 1999
	Date of renewal	January 11, 2020	January 11, 2020

Air		Measurement resul	
Nitrogen oxides (NOx)	ppm	Boiler 77 (260)	Boiler ∕(∕)
Sulfur oxides (SOx)	m³N/h	0.025 (K-value regulation 9.0)	/
Soot and dust	g/m³N	Boiler 0.015 ( 0.3 )	Boiler∕(∕)

Water		Regulation value	Measurement result	Regulation value	Measurement result
Biological oxygen demand (BOD)	mg∕ℓ	25	22.1	600	13
Chemical oxygen demand (COD)	mg∕ℓ	20 *1	19	/	/
Suspended solids (SS)	mg/ l	50	13	600	46
N-hexane extract	mg/ l	3	ND	5	0.6
lodine consumption	mg/ l	/	/	220	2.1
Fluorine and its compounds	mg/ l	8	7.3	8*2	1.5
Ammoniac nitrogen	mg/ l				
Nitrate nitrogen	mg/l	100	10.3	380	170
Nitrite-nitrogen	mg/ l				
Nitrogen content (T-N)	mg/l	30	24	/	/
Chromium content (T-Cr)	mg/ l	1	ND	0.5	ND
Phosphorus content (T-P)	mg/ l	2	0.2	/	/
Arsenic	mg/ l	0.05	ND	0.1	ND
Trichloroethylene	mg/ l	0.1	ND	0.1	/

\* 1. At the Noda office, since Tokyo Bay pollutant load restrictions apply, it is also subject to chemical oxygen demand (COD) restrictions.

\* 2. At the Yonezawa Plant, treated wastewater is discharged into public sewerage systems and is thus subject to the Sewerage Act. (Destination of treated waste water outflowing from sewerage treatment site: river) Accordingly, the regulation value for fluoridation compound is 8 mg/l.

Name of busines					JSQ Division
Scope of business Design, development and manufa		Design, development and manufacture of silicon wafers	Design, development and manufacture of quartz crucibles		
	Examining organization	Japan Quality Assurance Organization	Japan Quality Assurance Organization		
Status of acquisition of ISO 14001:2015 certification	Date of acquisition	January 11, 1999	January 11, 1999		
	Date of January 11, 2020		January 11, 2020		

Air		Measurement results (regulation value)		
Nitrogen oxides (NOx)	ppm	Boiler ∕(∕)	Firing furnace 🖊 ( 🗡 )	
Sulfur oxides (SOx)	m³N/h	/	/	
Soot and dust	g/m³N	Boiler ∕(∕)	Firing furnace 0.09(0.2)	

Water		Regulation value	Measurement result	Regulation value	Measurement result
Biological oxygen demand (BOD)	mg∕ℓ	600	1.4	160	24
Chemical oxygen demand (COD)	mg/l	/	/	/	/
Suspended solids (SS)	mg∕ℓ	600	8	200	24
N-hexane extract	mg/ l	5	ND	5	ND
lodine consumption	mg∕ℓ	/	/	/	/
Fluorine and its compounds	mg/l	8	4.3	8*	2.9
Ammoniac nitrogen	mg∕ℓ				
Nitrate nitrogen	mg/ l	/	/	100	3.3
Nitrite-nitrogen	mg∕ℓ				
Nitrogen content (T-N)	mg∕ℓ	/	/	120	4.9
Chromium content (T-Cr)	mg∕ℓ	2	ND	2	ND
Phosphorus content (T-P)	mg/l	/	/	16	0.29
Arsenic	mg/l	/	/	0.1	ND
Trichloroethylene	mg∕ℓ	0.1	/	0.1	ND

\* At the Chitose Plant, treated wastewater is discharged into public sewerage systems and is thus subject to the Sewerage Act. (Destination of treated wastewater out flowing from sewerage treatment site: river) Accordingly, the regulation value for fluoridation compound is 8 mg/l.

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### Site Data

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Name of busines			SUMCO TECHXIV Corporation Miyazaki Plant
Scope of business		Design, development and manufacture of monocrystalline silicon ingots and silicon wafers	Design, development and manufacture of monocrystalline silicon ingots and silicon wafers
	Examining organization	Japan Quality Assurance Organization	Japan Quality Assurance Organization
Status of acquisition of ISO 14001:2015 certification	Date of acquisition	January 11, 1999	January 11, 1999
	Date of renewal	January 11, 2020	January 11, 2020

Air				
Nitrogen oxides (NOx)	ppm	Boiler 71 (260)	Boiler 65(150)	
Sulfur oxides (SOx)	m <sup>3</sup> N/h 0.004 (K-value regulation 17.5)		/	
Soot and dust	g/m³N	Boiler 0.01(0.3)	Boiler ND (0.1)*2	

Water		Regulation value	Measurement result	Regulation value	Measurement result
Biological oxygen demand (BOD)	mg∕ ℓ	600	86.8	25	4.3
Chemical oxygen demand (COD)	mg∕ ℓ	/	/	/	/
Suspended solids (SS)	mg∕ ℓ	600	21	30	3
N-hexane extract	mg∕ ℓ	5	ND	5	ND
lodine consumption	mg∕ ℓ	/	/	/	/
Fluorine and its compounds	mg∕ ℓ	15* <sup>1</sup>	10.3	8	1.7
Ammoniac nitrogen	mg∕ ℓ				
Nitrate nitrogen	mg/ l	380	64.7	100	11.0
Nitrite-nitrogen	mg∕ ℓ				
Nitrogen content (T-N)	mg∕ ℓ	240	89.4	120	5.4
Chromium content (T-Cr)	mg∕ ℓ	2	ND	0.2	ND
Phosphorus content (T-P)	mg∕ ℓ	32	0.18	16	0.03
Arsenic	mg∕ ℓ	0.1	0.004	0.1	/
Trichloroethylene	mg∕ ℓ	0.1	ND	0.1	/

\* 1. At STC Nagasaki plant, treated wastewater is discharged into public sewerage systems and is thus subject to the Sewerage Act. (Destination of treated wastewater outflowing from sewerage treatment site: the sea) Accordingly, the regulation value for fluoridation compound is 15 mg/l.

\*2. The frequency of atmospheric soot and dust measurements at STC Miyazaki was revised to once every five years (the next measurement will be taken in 2023).

Name of business site/plant		SUMCO Phoenix Corporation Albuquerque Plant	SUMCO Phoenix Corporation Phoenix Plant	
Scope of business		Design, development and manufacture of silicon wafers	Design, development and manufacture of monocrystal silicon ingots and silicon wafers	
Status of acquisition of ISO 14001:2015 certification	Examining organization	DNV	DNV	
	Date of acquisition	June 19, 2000	June 19, 2000	
	Date of renewal	June 30, 2021	June 30, 2021	

Air		Measurement results (regulation value)		
Nitrogen oxides (NOx) ton/y		1.26 (10.2)	13.11 (24.6)	
Sulfur oxides (SOx)	ton/y	0.01 (0.34)	0.41 (1.25)	
PM10 (Particulate Matter)	ton/y	0.09 (0.84)	0.71 (2.5)	

Water		Regulation value	Measurement result *	Regulation value	Measurement result
Biological oxygen demand (BOD)	mg/ l	/	/	/	/
Chemical oxygen demand (COD)	mg∕ℓ	/	/	/	/
Arsenic	mg∕ℓ	2.09	/	0.13	0.013
Cadmium	mg∕ℓ	/	/	0.047	ND
Copper	mg∕ℓ	/	/	1.5	0.067
Cyanide	mg∕ℓ	0.5	/	2	ND
Fluorine and its compounds	mg∕ℓ	36	/	/	/
Lead	mg∕ℓ	1.0	/	0.41	ND
Mercury	mg∕ℓ	0.004	/	0.0023	ND
Molybdenum	mg∕ℓ	2.0	/	/	/
Selenium	mg∕ℓ	0.46	/	0.1	ND
Silver	mg∕ℓ	5.0	/	1.2	ND
Zinc	mg∕ℓ	2.2	/	3.5	ND
Suspended solids (SS)	mg∕ℓ	/	/	/	/

\* At the Albuquerque Plant, only ph and water flow rate measurements are required, and the City of Albuquerque periodically takes wastewater measurements.

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Inquiries: Legal & CSR Office, General Affairs Department SUMCO Corporation Seavans North, 1-2-1 Shibaura, Minato-ku, Tokyo 105-8634 E-mail : sumco-csr @sumcosi.com



