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Overview

Operations Since our establishment in 1921, we have maintained unique carbide chemical operations that exploit in-house assets. These include Mount Kurohime, which has five billion metric tons in limestone reserves, and an in-house power generation capacity of 180,000kW. Our broad product range includes calcium cyanamide, chloroprene rubber and cement. Having expanded into the fields of inorganic fine chemicals and pharmaceuticals in recent years, we are continuously taking on diverse challenges in the field of chemistry.

- Products**
- **Elastomers & Performance Plastics:** Chloroprene rubber, POVAL, etc.
 - **Infrastructure & Social Solutions:** Cement, special cement additives, calcium carbide, calcium cyanamide, ALCEN, etc.
 - **Electronics & Innovative Products:** Monosilane gas
 - **Life Innovation Products:** Macromolecular sodium hyaluronate
 - **Others:** Eel farms

Address 2209, Oaza Omi, Itoigawa, Niigata
Telephone: +81-25-562-6105

Employees 825 (as of March 31, 2017)

Message from the General Manager

The Omi Plant supplies materials for various products that support the development of society. Our production activities utilize a variety of raw materials, ranging from limestone produced at local limestone mines to waste from neighboring communities.

In the course of these activities, we place a particular priority on the careful handling of hazardous substances and the prevention of their release into the environment. We believe that such practices are key to continuing production in the regional communities surrounding us.

In addition to maintaining harmonious coexistence with local communities, we will work to maintain an acute awareness of what must be preserved and what must be changed as we strive to fulfill the evolving needs of society. In these ways, we will secure the future development of plant operations.



Hideki Hirano
Managing Executive Officer, General
Manager of Omi Plant

CSR Policies | General Manager's Policies

1 Basic policy

- Each worker acts upon the Denka Principles.
- We strive to create an ideal plant capable of sustainable operations and, to this end, we optimize our actions based on projections spanning far into the future.
- We place the utmost priority on the safety of people and implement a multi-faceted initiative to realize this priority in all aspects of our operations.

2 Safety and Environment

- With a sense of unity binding managers and frontline operators together, each individual does their utmost to fulfill their role.
- To create a lively and vibrant workplace, everyone works together to facilitate communication.
- We nurture an environment-conscious mindset, ensure regulatory compliance and push forward with our environmental plans.

3 Monozukuri (Manufacturing)

- We will strive to develop our products into specialty products and, to this end, utilize inputs from in-house and external human resources.
- Based on a belief that the quality of products depends on the status of our facilities, we will keep our focus on our ideals with regard to facilities and thereby ensure proper facility management.
- We will strive to enhance cost effectiveness, product quality and market competitiveness via process improvement and robust operational management.

Fiscal 2016 Achievements under the CSR Policies

Safety



Comprehensive Emergency Drills

We carry out comprehensive emergency drills on our premises in tandem with the Itoigawa City Fire Department and other local fire brigades.

Communication



Itoigawa Omanta Festival

A number of plant staff participate in this annual summer festival held in the local community.



Plant Tours

Every year, we accept a number of plant tours, inviting representatives from relevant corporations based in Itoigawa City, local organizations and elementary, junior high and high school students to take a close look at our operations.

The Environment



Beach Cleanup Campaign

Every year, we engage in beach cleanup campaigns on the Omi coast.



The second Denka Big Swan Football Festival

In collaboration with Itoigawa City and other relevant organizations, we held a football event at the DENKA BIG SWAN STADIUM to which we invited approximately 800 children and their parents from local and surrounding communities, providing them with an opportunity to interact each other and with professional athletes through games.



Experimental Science Classes

We host chemistry classes for children at *Geomaru & Nuna to Omoshiro Science*, an annual science event sponsored by Itoigawa City.

Future Initiatives

At the Omi Plant, we endeavor to achieve zero accidents and disasters. To this end, we strive to ensure that every plant staff member maintains an acute awareness of occupational safety and hygiene as a matter of utmost priority.

Moreover, we will proactively engage in environmental, community and social contribution activities, thereby helping realize the sound development of society along with the development of the plant itself.

Omuta Plant



Overview

- Operations** Established in 1916, the Omuta Plant is Denka's oldest plant and the first to manufacture carbide and calcium cyanamide. Since that time, as an inorganic chemical product manufacturing base boasting proprietary electric furnace, high-temperature control and nitride technologies, the Omuta Plant has introduced a number of unique products. Currently, we are strengthening our operations related to fine ceramics and electronic materials in order to contribute to the development of the electronics, automotive and numerous other industries.
- Products**
- **Infrastructure & Social Solutions:** Calcium carbide, calcium cyanamide, fire resistant materials for steel making, alumina cement and special cement additives
 - **Elastomers & Performance Plastics:** Acetylene black
 - **Electronics & Innovative Products:** Fused silica filler, spherical alumina, silicon nitride, boron nitride, ceramic electronic circuit substrates, thermally conductive sheets, ceramic composite and LED phosphors
- Address** 1, Shinkai-Machi, Omuta, Fukuoka
Telephone: +81-944-52-1055
- Employees** 591 (as of March 31, 2017)

Message from the General Manager

What sets the Omuta Plant apart is its expertise in producing inorganic materials, such as calcium carbide and calcium cyanamide—two key products Denka has been manufacturing since its founding—as well as electronic materials, a class of products that requires the ability to adapt to a rapidly changing market environment.

We are acutely aware of the value of the legacy passed down by our predecessors in the form of outstanding technological capabilities and unwavering commitment to precise manufacturing. While we honor these traditions, we are also actively incorporating new methodologies. In the course of doing so, we are striving to create a safe, secure and lively workplace environment that allows staff to work with confidence. Furthermore, we are promoting an environment-friendly operational approach to ensure that our plant coexists in harmony with neighboring communities. In addition to developing and delivering unique products, we will sincerely take on every challenge that we meet in the course of these pursuits.



Kazuo Takahashi
Executive Officer,
General Manager of Omuta Plant

CSR Policies | General Manager's Policies

1 We will decisively take on operational process reforms with the aim of renewing the Omuta Plant

- (i) Striving to create an ideal plant capable of sustainable operations and, to this end, optimizing our actions based on projections spanning far into the future
- (ii) Realizing greater organizational strength through collaborative action backed by a sense of unity among all workers, including those from subcontractors, by cultivating a sense of ownership in each worker along with an awareness of overall plant operations
- (iii) Placing the utmost priority on the safety of people and implementing a multi-faceted initiative to realize this priority in all aspects of our operations
- (iv) Pushing forward with production and operational process reforms to strengthen our product competitiveness and on-site capabilities

2 We will promote R&D in tandem with customers by clarifying development timelines

- (i) Increasing contact points with markets to analyze what customers need and when they need it
- (ii) Pursuing novel technological development themes and effective IP strategies in order to deliver inspiring and innovative solutions

3 We will strive to create a vibrant workplace with a strong safety-oriented culture while giving due consideration to the environment

- (i) Managers are responsible for implementing the first three of the following policies and frontline operators the remainder.
 - Make sure that activities of workplace under his/her supervision are compliant with legal regulations and in-house rules
 - Execute facility and equipment inspections, provide sufficient employee education and prepare operational procedure documents without any shortfalls
 - Reach out to operators on-site and communicate with them to assess and improve their handling of issues

- Practice the "pointing and calling" technique immediately prior to commencing an operation
- Maintain a strong determination to comply with rules
- Protect colleagues and yourself from danger through the practice of "Sorting," "Setting-in-Order" and "Shining"

- (ii) Everyone endeavors to facilitate communication to create a lively and vibrant workplace environment
 - Engage in the exchange of courtesies with loud voices so that others can recognize you; bring your insights into discussions proactively
 - Listen closely to and try to understand others' opinions
- (iii) Nurturing an environment-conscious mindset to ensure legal compliance and promote the Sixth Medium-Term Environmental Plan

4 We will pursue the specialization of our products while enhancing our technological strengths and on-site capabilities through various reforms

- (i) Stepping up facility management given the fact that plant conditions directly affect output
- (ii) Achieving lower production costs and higher quality through process improvement and more stringent operational management, thereby enhancing our competitiveness
- (iii) Building a new quality management system based on IATF*16949

* An automotive quality management system standard compiled by the International Automotive Task Force

5 We will create a company deserving of society's trust and employees' pride while contributing to the creation of a better society

- (i) Society's trust is earned only through the actions of individuals
- (ii) Therefore, everyone at the plant is encouraged to continuously develop his/her competencies while maintaining legal compliance and engaging in sincere dealings

Fiscal 2016 Achievements under the CSR Policies

Communication



Chemistry Classes for Children

We held special one-day chemistry classes aimed at providing fun learning experiences for students and their parents at local community facilities and elementary schools.



Omuta Umakamon Festival (Omuta City's centennial celebration)

We participated in the festival as a local business boasting a century-long history of operations, introducing our products and serving attendees kabayaki of aquaculture eel produced in Omi.



Plant Tours

We invited junior high, high school and university students as well as representatives from Japan Agricultural Cooperatives to help them better understand our operations (on a total of 10 occasions).



Volunteer Cleanup Activities

In collaboration with people from neighborhood, we undertook cleanup activities covering areas around the plant (June: 253 participants; October: 201 participants).



Internships

We invited students from various high schools, vocational high schools and universities within and outside the prefecture to participate in a workplace experience program at the plant (a total of nine students).



Volunteer Activities to Help Restore Areas Hit by the Kumamoto Earthquake

Immediately after the earthquake struck, employees began participating in support activities aimed at distributing aid in the form of supplies, removing debris and operating soup kitchens in Kumamoto City and Mashiki Cho. We also made donations to Kumamoto Prefecture. (Volunteer tours were held on 38 occasions, with a total of 257 employees taking part in these activities.)

Future Initiatives

In 2016, the Omuta Plant celebrated the centennial of its establishment. With the aim of creating a plant capable of thriving well into the next 100 years, we will continuously invest in efforts aimed at preserving the environment and ensuring safe operations. At the same time, we will proactively engage in volunteer cleanup activities in tandem with people from neighborhood while hosting such events as chemistry classes for children. We will thus create a company loved by our surrounding communities.

Chiba Plant



Overview

Operations The Chiba Plant serves as a core production base bolstering Denka's petrochemical operations. Begun as a styrene monomer facility, the plant is now in charge of producing polystyrene, ABS resins, CLEAREN styrene-butadiene block copolymer, transparent plastics and other styrene-based materials as well as EVA emulsions and acrylic rubber. The plant also manufactures acetylene black and such plastic processed products as biaxially oriented polystyrene sheet (BOPS), vinyl chloride tapes and housing and environmental materials.

Products

- **Elastomers & Performance Plastics:** Ultra-pure acetylene black, styrene monomer, polystyrene,* ABS resin, transparent polymers, heat-resistant polymers, CLEAREN styrene-butadiene block copolymer, EVA emulsions and Denka ER (*Product of affiliate TOYO STYRENE Co., Ltd.)

- **Life Science & Environment Products:** Food packaging, housing and environmental materials and vinyl chloride tapes

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 Telephone: +81-436-26-3200
 Bibai Subplant: 1-1, Higashi-Gojo-kita 10-chome, Bibai, Hokkaido
 Telephone: +81-126-62-1444

Employees 481 (as of March 31, 2017)

Message from the General Manager

The Chiba Plant is striving to live up to the trust and expectations of the communities surrounding it. We focus on pursuing harmonious coexistence and mutual development with local society, to this end stepping up initiatives to facilitate communication, foster mutual understanding and nurture friendships with our fellow community members.

In addition, we believe that ensuring safe operations must take priority over any other corporate activity. Guided by this belief, we are engaged in unique safety assurance activities, such as those aimed at creating a safety-oriented corporate culture and mitigating the intrinsic dangers of operational processes.

Rallying our overall strengths, we are striving to create a lively workplace in which everyone proactively exchanges courtesies, wishing one another a safe day.



Hideki Watanabe
 Executive Officer, General Manager
 of Chiba Plant

CSR Policies | General Manager's Policies

- We place the utmost priority on safety.
- We create high-value-added products with superior functions, thereby pushing forward with business structure reforms.
- We tirelessly scrutinize every cost element.
- We work to realize a vibrant plant based on mutual trust and cooperation between colleagues.
- We nurture human resources who will, in turn, lead the future operations of the Chiba Plant.

Fiscal 2016 Achievements under the CSR Policies

Safety



Three Times
Comprehensive Emergency Drills

We performed emergency drills in the plant's premises on three occasions during the fiscal year in tandem with the local municipal fire department as well as a joint fire brigade put together by companies based in the same industrial complex. These practical drills helped us ensure readiness to swiftly and appropriately respond in the event of a natural disaster or other emergency.

Communication



October
Engaging in Volunteer Support Activities for the CHIBA AQUALINE MARATHON 2016

A number of Chiba plant employees, including young people and women, volunteered to help organize the CHIBA AQUALINE MARATHON 2016, a major local sporting event that attracted approximately 16,000 runners. Wearing a blue cap with the Denka logo, these volunteers smilingly served marathon participants and extended a spirit of hospitality.



August
A Plant Tour as Part of a Career Guidance Program Undertaken by Prefectural High Schools

Officials from Ichihara City's Department of Economy and local high school teachers who offer students career guidance participated in a tour of the Chiba Plant. Organized under a partnership involving a number of corporations based in the Chiba coastal area and staff at prefectural high schools in Ichihara City, this event helped these parties better understand issues high school graduates often face as they seek employment and what must be done to help young people join the workforce successfully.

Future Initiatives

In line with The Denka Value, our corporate philosophy, the Chiba Plant will strive to remain a manufacturing base that deserves the trust of local communities. To this end, we pursue stable plant operations by placing the utmost priority on safety. At the same time, we will proactively engage in initiatives to secure legal compliance, ensure occupational safety and health, promote human resource development, preserve the environment and contribute to communities surrounding us.

We will rally our overall strengths to create a plant worthy of trust of all of its stakeholders, with a lively and vibrant working environment that allows staff to lead fulfilling working lives free of accidents and disasters.

The Environment



Introducing Cutting-Edge Process Technologies to Save Energy

The Chiba Plant's mainstay styrene monomer manufacturing line is a major consumer of energy all by itself. We have upgraded the line via the introduction of cutting-edge process technologies, which, in turn, has helped us reduce annual energy consumption (equivalent to approximately 8,000 kl of crude oil) and enhanced our ability to maintain safe and stable production. This upgrade also helped decrease annual CO₂ emissions from the facility by approximately 17,000 t-CO₂.



May to September
Partnering with Ichihara City to Promote a Green Curtain Initiative

Currently, Ichihara City is promoting a "Green Curtain Initiative" at more than 100 facilities, including public facilities, childcare centers and elementary and junior high schools. In support of this initiative, the Chiba Plant donated 300 bitter melon seedlings and 200kg of Denka Azumin fertilizer, for which it received a letter of thanks from city officials.



upon request
Programs for High School Interns and Plant Tours

We accepted 12 interns from three high schools based in Chiba Prefecture while holding plant tours that invited approximately 110 students from three high schools to take a close look at our operations. These initiatives were aimed at helping young people understand what it is like to be a professional and establish their vision for occupational life.

Shibukawa Plant



Overview

Operations In 1951, the Shibukawa Plant was established as a production base for vinyl chloride polymers. In 1976, the plant began manufacturing HARDLOC structural adhesive. In 1984, the plant started expanding its business domain, making a full-scale entry into the electronic materials business. Currently, the Shibukawa Plant specializes in electronics-related products, encompassing electronic circuit substrates, thermally conductive materials, emitters, structural adhesives, temporary fixing adhesives and semiconductor processing-related products, helping drive Denka's growth strategies as a key organic electronic materials production base.

Products ● **Electronics & Innovative Products:** HITTPATE high thermal conductivity aluminum substrates, THERMALLY CONDUCTIVE SPACER, TFE and LaB6 CATHODE electron and ion emitters, ELEGRIP dicing tape and back grinding tape, HARDLOC structural adhesive, HARDLOC OP/UV light curing adhesive

Address 1135, Nakamura, Shibukawa, Gunma
Telephone: +81-279-25-2109

Employees 479 (as of March 31, 2017)

Message from the General Manager

The Shibukawa Plant aims to fulfill Denka Mission through manufacturing operations and its products and, to this end, maintains strong focus on realizing safety and security for all employees, enhancing customer satisfaction, minimizing environmental burdens and contributing to local society.

Also, we seek to achieve sustainable growth by supplying products that support EVs as well as automotive electronics and lightweight automotive components, industry demand for which is growing, along with materials for mobile electronic devices, whose manufacturers are under constant pressure to further advance the technology.

Simultaneously, as part of key initiatives to maintain relationships of trust with local communities and society as a whole, we will engage in dialogue and interaction with community members as well as volunteer activities in tandem with businesses operating in neighborhood.



Yoshimi Ishizuka
General Manager of
Shibukawa Plant

CSR Policies | General Manager's Policies

- We promote occupational safety and health, environmental conservation and quality assurance initiatives while creating a workplace in which all employees can work with confidence.
- We pursue manufacturing operations aimed at securing corporate growth, thereby fulfilling Denka Mission, a core component of The Denka Value, our corporate philosophy.
- We push forward with thoroughgoing efforts to enhance productivity and reduce cost to lay foundation for our future growth path.
- We create the most optimal production system encompassing domestic and overseas production bases to secure competitiveness while swiftly commercializing newly developed products and seeds of new businesses.

Fiscal 2016 Achievements under the CSR Policies

The Environment



Cleaning of the Nakamura Water Channel

We engaged in volunteer activities to clean up water channels around the plant, contributing to the beatification of areas surround it.



Plant Tours

We hosted plant tours for students from local high schools and nursing schools as well as members of neighboring community associations, with the aim of enhancing their understanding of our operations.



Volunteer Activities

With management and the labor union acting in collaboration, a number of employees volunteered to organize the annual Maebashi & Shibukawa City Marathon, the largest prefectural event of its kind, thereby contributing to local communities.

Communication



Chemistry Classes for Children

During the spring vacation season, we hosted plant tours and experimental science classes for local elementary school students. These classes involved creating personalized PET bottles and assessing acidity or alkalinity of specimens by using red cabbage as an indicator. Such activities help alert children to the possibility of chemistry in the everyday world around them.



Blood Donation

We supported blood donation campaigns on two occasions in spring and autumn in 2016. A number of our employees generously took part in the campaigns, and we received a letter of gratitude from Japanese Red Cross Society.



Softball Game Jointly Hosted by Management and Labor Union

We host annual softball games in May in an effort to promote health awareness and facilitate interaction between management and the labor union as well as employees' families.

Future Initiatives

- **Occupational safety and health and facility security**
In line with a policy of placing the utmost priority on safety, we will implement countermeasures against possible danger for every operation while creating a lively and vibrant workplace.
- **RC activities**
We will push forward with initiatives to save energy, reduce industrial waste and develop infrastructure supporting our production activities. We will also strive to reduce environmental burdens while preventing environmental accidents. Moreover, we will proactively engage in social contribution activities and take part in local events.
- **Quality Assurance**
We will develop our quality management system with an eye to acquiring IATF 16949* certification. Simultaneously, we will continue to endeavor to improve product quality and maintain legal compliance, thereby creating a plant that harmoniously coexists with communities and deserves their trust.
* A recently established international quality management standard for the automotive industry



Overview

Operations Our product lineup is the fruit of cutting-edge technologies in ejection molding, adhesion coating and film production. We are Denka's prime production unit for plastic products. We manufacture a variety of offerings, such as TOYOKALON synthetic fiber for wigs and hairpieces now popular around the world, packaging tapes that boast unique functions, including hand-cuttable tapes, and Calalyan Y polyethylene film featuring excellent transverse direction (TD) mono-axial cut properties.

Products ● **Life Science & Environment Products:** Synthetic fibers for wigs, packaging materials and functional films

Address 13-1, Dai 2-chome, Kamakura, Kanagawa
Telephone: +81-467-45-1110

Employees 183 (as of March 31, 2017)

Message from the General Manager

We at the Ofuna Plant engage in manufacturing activities rooted in Kamakura City, which boasts an outstanding cultural, historical and environmental legacy. Accordingly, we have made harmonious coexistence with the abundant nature of the surrounding area and thereby contributing to better living conditions and a sustainable society our primary environmental policy.

Guided by this policy, we are striving to reduce waste and conserve energy while endeavoring to decrease environmental burdens attributable to our operations. To support these initiatives, we employ an environmental management system designed to help us achieve continuous improvement.

Moreover, we are ceaselessly striving to mitigate operational risks through hazard prediction activities and risk assessments in addition to ensuring strict compliance with occupational safety and health regulations and the prevention of occupational accidents and diseases. Promoting a practice of exchanging courtesies and wishing one another a safe day, we are creating an environment in which everyone can work with confidence.



Mikio Shimizu
General Manager of Ofuna Plant

CSR Policies | General Manager's Policies

Under the slogan "Be sincere and bold in taking on every challenge coming our way," we have identified the following policies as basics for our plant operations.

1 Occupational Safety and Health Policy

· We consider occupational safety and health of paramount importance to our production activities.

2 Environmental Policy

· We maintain production activities that harmoniously coexist with the environment, thereby contributing to the realization of a sustainable society and the enrichment of local communities in which people can enjoy better living conditions and the abundant blessings of nature well into the future.

3 Quality Policy

· We will supply safe and high-quality products in a timely manner, thereby enhancing customer satisfaction.

Fiscal 2016 Achievements under the CSR Policies

Safety



Comprehensive Emergency Drills

In tandem with Kamakura City's Fire Department, all plant staff participated in annual fire drills aimed at ensuring their responsiveness to emergencies.

The Environment



Cleanup Activities in Surrounding Areas

We engaged in cleanup activities in areas surrounding the plant, thereby contributing to the beatification of neighboring communities.

Communication



A Summer Festival

We made the square in front of the plant's main gate available for the annual Fujimicho Town Association summer festival. Some stands were set up by employees, giving us the opportunity to deepen interaction with people from neighboring areas.



Kamakura Manufacturers' Exhibition

We participated in Kamakura Manufacturers' Exhibition, an event held under the auspices of the local Chamber of Commerce and Industry that aimed to introduce technologies and products of corporations based in local communities. At the event, we displayed TOYOKALON and packaging tapes.



Plant Tours for Students from Ofuna Elementary School

We have welcomed visits by local third graders as part of their social studies program. In addition to carrying out an experiment aimed at testing the tensile strength of a fiber we produce for wigs, children tried wigs on, getting quite excited as their peers cheered their brand new hair styles. We were pleased that the event proved to be so much fun.



A Plant Tour for Students from Kamakura Jogakuin Junior High School

Seventh graders from a local junior high school visited the plant, taking an enthusiastic look at how fast industrial robots can work as they rolled tapes around pipes and piled up shipping boxes.

Future Initiatives

- We will push forward with hazard prediction activities which, in turn, will help us better promote risk assessment. In these ways, we will ceaselessly strive to mitigate operational risk.
- We will endeavor to secure conformity with the 2015 edition of ISO 9001 and ISO 14001, thereby enhancing the effectiveness and efficiency of our management systems.
- We will continuously step up our safety, environmental and quality assurance initiatives and, to this end, proactively engage in the exchange of courtesies wishing one another a safe day while promoting the 3S worksite activities.
- We will remain active in social contributions to become a business base that deserves the trust of local communities.

Isesaki Plant



Overview

- Operations** This plant manufactures sheets and films from polystyrene, vinyl chloride and other raw materials. We supply food and electronic packaging materials that meet stringent requirements for performance and quality management, and are endeavoring to bolster our processing technologies while developing value-added offerings.
- Products**
 - **Electronics & Innovative Products:** Carrier tapes, trays and cover tapes for semiconductor and electronic component transportation
 - **Life Science & Environment Products:** Food packaging sheets, stretch films and solar cell module back sheet materials
- Address** Isesaki Plant: 245, Nishigawara, Naganuma-cho, Isesaki, Gunma
Telephone: +81-270-32-1251
Isesaki Plant (Ota): 3015, Serada-cho, Ota, Gunma
Telephone: +81-276-52-4111
- Employees** 252 (as of March 31, 2017)

Message from the General Manager

The Isesaki Plant's facilities operate in two locations, Isesaki City and Ota City, in Gunma Prefecture. Both locations boast a rich natural environment. The plant's primary products are resin sheets and films used for packaging materials for foodstuffs and electronic components. Well aware of the fact that our manufacturing is energy intensive and emits industrial waste and effluent, we are committed to constantly improving our initiatives to control our environmental footprint.

We are also determined to fulfill the Denka Mission, "Taking on the challenge of expanding the possibilities of chemistry to create new value and contribute to sound social development." Accordingly, we will pursue the manufacture of high-quality polymer processing products and the development of other specialty products for the next generation while acting upon the Denka Principles, which place the utmost priority on safety. Furthermore, we will strive to remain a plant deserving of the trust of local society and capable of achieving mutual development with neighboring communities, thereby fulfilling our social responsibilities.



Koichi Taguchi
Executive Officer, General Manager
of Isesaki Plant

CSR Policies | General Manager's Policies

Let's create a new Isesaki Plant where every worker finds his/her job rewarding

1 Occupational Safety and Health

- Place the utmost priority on safety, implement measures to mitigate the intrinsic dangers of operational processes and enhance our hazard prediction capabilities, thereby achieving zero accidents and disasters.
- Facilitate worksite communication and create a vibrant workplace in which everyone finds his/her job rewarding.

2 Quality

- Promote QC circle initiatives to enhance our on-site capabilities, with the aim of achieving the highest possible product quality.

3 The Environment

- Push forward with resource- and energy-saving initiatives while reducing waste
- Develop new products that are environmentally friendly

4 The Promotion of Denka100 and Enhancement of Operational Processes

- Achieve targets set out for the Denka100 management plan's final fiscal year
- Commercialize products for the next generation
- Review all operations, enhance their efficiency and strike a work-life balance

Fiscal 2016 Achievements under the CSR Policies

Safety



Comprehensive Emergency Drills

We carried out an annual plant-wide fire drill to enhance our responsiveness to disasters and other emergencies.



Calling Workers' Attention to Safety

We conducted initiatives to promote the exchange of courtesies in the morning. With management and the labor union acting in collaboration, these initiatives were undertaken at the beginning and end of year as well as during the designated safety week. By doing so, we facilitated communication among employees and raised their safety awareness.

The Environment



Cleanup Activities at an Adjoining Park

We engaged in cleanup activities in a park within the industrial complex that is home to the Isesaki Plant. Also, employees of the Ota facility collected garbage in streets around its premises.

Communication



Participating in the "Made in Isesaki" Exhibition

We supported Isesaki City's initiatives to enhance the recognition of the region's handicrafts and industrial products by, for example, participating in manufacturer exhibitions.



QC Circle Gunma Section General Conference

Our plant staff's active involvement in QC circle activities led to the receipt of an Excellent Award at the Fiscal 2016 QC Circle Gunma Section General Conference.



Joint Recreational Events Hosted by Management and the Labor Union

Management and the labor union—which have long maintained a favorable and sound relationship—jointly host a variety of events at the plant with the aim of nurturing a sense of unity among employees.

Future Initiatives

- We will maintain our utmost priority on safety and promote initiatives to assure workers' safety while reducing their burdens via such means as automation.
- We will strive to enhance the level of quality assurance to meet ever diversifying customer requests.
- We will create an inclusive workplace based on sound labor-management relations.
- We will endeavor to remain a business base deserving of communities' trust by engaging in social contribution activities.

Denka Innovation Center



Overview

Operations The Denka Innovation Center began operating at its current site in 1962 after the Company relocated its Meguro Research Center, which was established in 1916, from Meguro-ku, Tokyo, renaming it the Central Research Institute. The facility laid the foundations for Denka's business expansion by developing numerous core technologies and new products in broad areas ranging from inorganic, organic and polymer chemistry to resin processing and biotechnologies. Renewed in 2014 as the Denka Innovation Center, the facility is moving forward as the Company's core R&D facility and will focus its resources on pursuing medium- to long-term R&D themes aimed at enhancing its core technologies and creating next-generation products and technologies.

Address 5-1, Asahi-cho 3-chome, Machida, Tokyo
Telephone: +81-42-721-3611

Employees 181 (as of March 31, 2017)

Message from the General Manager

With the renewal of the Denka Innovation Center main building in 2014, we became an even stronger R&D base capable of driving open innovation for the entire Group. Committed to creating new value, the center's Advanced Technologies Research Institute, the Life Innovation Research Institute and the Infrastructure & Solutions Development Research Institute are engaged in research into the three growth fields of "healthcare," "the environment and energy" and "infrastructure."

Moreover, the center serves as a venue for collaboration with customers, partner companies and external research institutions. In addition to welcoming a number of visitors and helping them better understand Denka products and technologies, we pursue co-creation with customers aimed at delivering innovative solutions. Furthermore, we participate in the annual Summer Holiday Chemical Experiment Show for Children to help young people—the leaders of tomorrow—experience the excitement of chemistry. We also host a plant tour for local elementary school students as part of CSR initiatives.

Going forward, we will strive to support the realization of a company that both contributes to society and achieves sustainable growth and, to this end, will draw on the Group's strengths to realize epoch-making innovation and create new value.



Norihiro Shimizu

Director, Managing Executive Officer,
Chief R&D Officer, Innovation Center
New Business
Planning&Development Dept.,
Research&Development Promoting
Dept. and Intellectual Property Dept.

CSR Policies | General Manager's Policies

Facilitate a corporate culture that emphasizes compliance with social ethics with an eye to ensuring sustainable corporate activities

- Firmly control environmental burdens attributable to our facilities and continuously endeavor to reduce such burdens
- Abide by the tightened regulations on chemical substances while enhancing R&D efficiency via SQC initiatives

Fiscal 2016 Achievements under the CSR Policies

Safety



Comprehensive Emergency Drill

We held a comprehensive emergency drill in tandem with a municipal fire department. In this drill, employees practiced using fire extinguishers in situations requiring immediate response; providing first aid to the injured; swiftly evacuating from dangerous sites; and establishing communications in a scenario where the personnel usually charged with presiding over emergency response are not readily available. We also confirmed procedures to prevent environmental disasters attributable to the leakage of hazardous chemical substances.

Communication



Summer Holiday Chemical Experiment Show for Children

We took part in the Summer Holiday Chemical Experiment Show for Children, sponsored by the "Dream Chemistry 21" committee, for the fifth consecutive year. This was an opportunity for the children who will lead the next generation as well as their parents to experience the excitement and wonder of chemistry while learning about how the chemical industry has contributed to the development of society.



Facility Tours for Elementary School Students

We welcomed third graders from a neighboring elementary school as part of their social studies program involving visits to local businesses. We introduced overview of our operations while providing them with hands-on experience programs, including on the use of an electron microscope and experiments dissolving things using hyaluronic acid. Our employees engaged in lively interaction with students.

Future Initiatives

We will promote R&D aimed at realizing innovation, taking on the challenge of creating next-generation businesses. To this end, we will facilitate coordination between Denka Group members and combinations of the Group's wide-ranging technologies. We will also work together with partner companies and external research institutions to pursue R&D activities at an ever faster pace, thereby creating new value and contributing to social development.

The Environment



Cleanup Activities

In tandem with residents from neighborhood, we engage in monthly cleanup activities in areas around the Innovation Center's premises, working hand in hand with them to preserve the environment and contribute to society as a whole.



Experimental Chemistry Class

We hosted experimental chemistry classes for local children and their families. In addition to introducing the unique characteristics of gel, a substance that is familiar to children, the experiments included creating personalized key holders. We also helped them understand environmental and social contribution initiatives undertaken by the chemical industry.



Innovation FESTA

The annual "Innovation FESTA" was held in August, with a total of 180 people, including employees' families, attending the event. During this round, we also welcomed town association representatives. Attendees were given the opportunity to take a close look at our workplace and the event has succeeded in facilitating interaction between those who playing games and enjoying other fun activities together.

Denka Singapore Merbau Plant



Overview

Operations Now operated by Denka Singapore Pte. Ltd. (DSPL), the Merbau Plant, where we manufacture DENKA BLACK, was Denka's first production facility in Singapore. We established this plant in 1980 to participate in the Singapore Petrochemicals Complex project on Jurong Island. We began operating our "50% press" facility in 1984, augmenting the lines in 1997. We set up a granulation facility in 2002.

Address Office: 4 Shenton Way #29-02 SGX Centre 2, Singapore 068807
Telephone: +65-6225-6120
Plant: 300 Ayer Merbau Road, Singapore 628282
Telephone: +65-6867-8496

Personnel 50 (as of March 31, 2017) (Including 33 DSPL employees and 17 from subcontractors)

Message from the General Manager

On June 30, 2017, the Merbau Plant marked its second consecutive year of zero accidents. Looking ahead, we are committed to staying vigilant to maintain our zero accident and disaster-free status. To that end, we will push forward with safety activities aimed at ensuring all plant workers are able to avoid hazards while fostering a sense of mutual support.



Yuji Koga
General Manager of Merbau Plant

CSR Policies

- Aim for a sustained zero-accident record
- Undertake safety activities to ensure that all plant workers are able to avoid hazards while fostering a sense of mutual support
- Promote beautification initiatives (step up 5S activities and apply coatings where needed)

Fiscal 2016 Achievements under the CSR Policies

Safety



Joint Emergency Drills with PCS



Safety Patrol Carried Out by Managers



Managers Provide Safety Lessons

1. Decrease the number of accidents in which a worker is caught or pinned down by machinery to zero
 2. Conduct joint emergency drills with PCS* (four occasions per year)
 3. Implement more robust safety and security educational programs, while the general manager makes rounds of the entire work to call attention to safety before and during operations
- * Petrochemical Corporation of Singapore

Future Initiatives

We have conducted interviews with our employees and our subcontractors to determine which facilities and operations may expose them to the danger of being caught or pinned down by machinery. Taking input from all interviewees into account, we will undertake facility improvements while reviewing operational practices. Moreover, to ensure an even safer and cleaner plant, we will promote the beautification of our worksite by applying coatings and stepping up 5S activities.

Denka Singapore Seraya Plant



Overview

Operations The Seraya Plant commenced operations to produce general-purpose polystyrene in 1998. In 2006, the plant expanded its facilities for manufacturing TX Polymer (methyl methacrylate styrene (MS)) and CLEAREN (styrene-butadiene block copolymer (SBC)). In April 2012, the plant launched a facility to produce DENKA IP (imidized polymers). Today, the combined annual production capacity of the four facilities is 325,000 metric tons. Also housing the Technical Service Center on its premises, the Seraya Plant is a key production base spearheading the Denka Group's styrene-based resin business.

Address Office: 4 Shenton Way #29-02 SGX Centre 2, Singapore 068807
Telephone: +65-6225-6120
Plant: 40 Seraya Avenue, Singapore 627873
Telephone: +65-6867-6089

Personnel 75 (as of March 31, 2017)

Message from the General Manager

In its efforts to contribute to society through production activities, Denka creates products of value by consuming limited natural resources and energy. We recognize that giving due consideration to the impact of such activities on the environment and communities surrounding us, as well as the well-being of our employees, is essential. Denka Singapore is therefore determined to focus on maintaining harmonious coexistence with the environment, society and people in the course of its production activities.



Michio Kawamura
General Manager of Seraya Plant

CSR Policies

- Aim to become a production facility that has minimal impact on the environment while putting the utmost priority on safety
- Aim to be regarded an excellent service provider with all plant staff involved in social contribution activities
- Promote workforce diversity that better reflects Singapore's multi-ethnic, multi-religious society

Fiscal 2016 Achievements under the CSR Policies

Safety



Workshop on MHI Regulatory Compliance



We invited an external consultant to give lectures at a workshop on compliance with Singapore's upcoming Major Hazard Installations (MHI) regulations, which mandate that businesses implement more robust countermeasures against disasters attributable to certain hazardous substances.

Future Initiatives

- We will promote operational process reforms through the incorporation of the IoT technologies while striving to reduce environmental burdens. Moreover, we will help plant workers strike an optimal work-life balance.

Denka Advantech Tuas Plant



Overview

Operation The Tuas Plant commenced operations in 1991 in Singapore to produce fused silica filler, a material mainly used as an encapsulant for semiconductor packaging. Currently, the Tuas Plant's focus is on spherical fused silica filler to accommodate advances in semiconductor packaging as well as the trend toward more environment-friendly products. Stepping up its quality management and production structures, the plant serves mainly Chinese and Southeast Asian markets and works in cooperation with the Omuta Plant.

Address Office: 4 Shenton Way #29-02 SGX Centre 2, Singapore 068807
Telephone: +65-6321-9530
Plant: 11A Tuas Avenue 20, Singapore 638823
Telephone: +65-6861-0004

Employees 68 (as of March 31, 2017)

Message from the General Manager

Last year, the Tuas Plant celebrated the 25th anniversary of its founding as a fused silica filler production facility. Amid the severe market environment for semiconductors, we are striving to maintain stable operations, improve our production technologies and enhance product quality, with the aim of achieving sustainable growth. We have positioned securing facility security and occupational safety as basic to operations. Accordingly, we are engaged in ongoing safety assurance activities aimed at creating a workplace environment in which every employee can work in confidence.



Keishi Iizuka
General Manager of Tuas Plant

CSR Policies

- Ensure plant security and employee safety
- Promote energy and resource saving to reduce environmental burdens
- Improve customer satisfaction by controlling risks pertaining to product quality
- Develop a supply system that meets market demand and technological trends
- Reduce costs by improving production processes and technologies

Fiscal 2016 Achievements under the CSR Policies

Safety



Annual Safety Review Meeting



Emergency Response Drills

In addition to workplace patrols, emergency response drills and other regular safety activities, since 2015 we have been periodically providing mandatory safety training to raise employee awareness, with safety specialists serving as lecturers.

The Environment

- Energy conservation activities (improving productivity to reduce energy and gas consumption intensity while promoting a switchover to energy-saving lighting)
- The recycling of polyethylene covers, flexible containers and metal materials
- Water-saving activities (the introduction of a tap water management system)

Future Initiatives

- In order to maintain zero disasters, helping each worker enhance their safety-related skills is essential. Accordingly, the Tuas Plant will promote safety activities that encourage every worker to draw on their insights and creativity.
- We will also scrutinize every cost element while striving to distinguish ourselves from competitors in terms of product quality. In these ways, we will secure a more robust business profit.



Tuas Plant staff

Denka Advantech South Plant



Overview

Operation The South Plant initiated operations in June 2013 to manufacture TOYOKALON synthetic fiber for wigs and hairpieces. Introduced in 1952, TOYOKALON is the world's first PVC fiber produced on an industrial scale and is shipped mainly to the U.S. and African hairpiece fiber markets, the latter of which is expected to grow considerably. In tandem with the Ofuna Plant, the South Plant will bolster the Group's supply structure as the second flagship TOYOKALON production site, helping accommodate burgeoning demand.

Address Office: 4 Shenton Way #29-02 SGX Centre 2 Singapore 068807
Telephone: +65-6224-1305
Plant: 6 Tuas South Drive, Singapore 637046
Telephone: +65-6412-9200

Employees 41 (as of March 31, 2017)

Message from the General Manager

Four years have passed since we initiated operations in June 2013 to deliver fiber for hairpieces to the African market. In addition to ongoing safety activities that have been implemented since the production kickoff, during fiscal 2016 we have striven to enhance production efficiency to reduce costs while undertaking a variety of other initiatives. For fiscal 2017, we are striving to secure a more robust safety assurance structure, even higher product quality and operational productivity as well as greater cost efficiency, while continuing to place the utmost priority on safety in all our activities.



Yoshiyuki Yoshino
General Manager of South Plant

CSR Policies

- Maintain zero-accident record and step up safety activities
- Promote resource recycling and energy saving to reduce environmental burdens
- Reinforce production structure to enhance product quality and cost efficiency
- Enhance in-house and external communications

Fiscal 2016 Achievements under the CSR Policies

Safety



Safety Assurance Activities

- We implemented monthly safety patrols centered on confirming the observance of 5Ss while holding safety countermeasure meetings.
- We conducted evacuation and fire drills.

Future Initiatives

- We will continue to focus on such basic activities as safety assurance and environmental conservation, thereby maintaining our zero-accident and disaster-free status.
- In consideration of our multi-ethnic workforce, efforts are now under way to enhance the makeup and content of operational manuals and various indicators, with the aim of creating easier-to-understand operator education programs. Looking ahead, we will step up these initiatives to help every employee enhance their safety- and manufacturing-related technological skills.

Communication

Initiatives to Facilitate Communication

We hosted various in-house meetings and dinner events as well as exchange gatherings to which guests from outside the company were invited.

Strengthening of Our Production Structure

We endeavored to secure even higher quality via the enhancement of process inspections, the review of operational procedures and the implementation of operator training programs, including those provided by third-party institutions, while enhancing productivity by improving the yield ratio.



Tuas South Plant staff

Denka Advanced Materials Vietnam



Overview

- Operations** Denka Advanced Materials Vietnam was established as a production and sales base to serve the burgeoning Asian and Middle Eastern markets, supplying VINI-TAPE for use in binding wire harnesses installed in automobiles as well as Denka Thermo Film for use as an embossed carrier tape for electronic and semiconductor components. Leveraging our advantages in terms of logistics and production costs, we will strive to deliver products with greater competitiveness.
- Address** Plot D-5, Thang IP II, Lieu Xa Commune, Yen My District, Hung Yen Province, Vietnam
Tel.84-221-3974-805 Fax.84-221-3974-806
- Employees** 89 (as of March 31, 2017)

Message from the General Director

Denka Advanced Materials Vietnam manufactures and markets VINI-TAPE and cover tapes. Immediately after its inauguration in December 2013, Denka Advanced Materials Vietnam began simultaneously pursuing the construction of production facilities and the development of an organizational structure. As a result, we are a new company that has just commenced full-scale production. Supporting economic development in the region in which we are located, we have been creating employment opportunities and locally procuring raw materials. Going forward, we will endeavor to further increase production volume, thereby contributing more to regional economies. At the same time, we will engage in ongoing social contribution initiatives, such as making donations to schools located in neighboring villages.



Yoshio Sasaki
General Director

CSR Policies

I have been communicating my conviction that "employees are a corporation's most valuable treasures" to all of my staff. Accordingly, not only do we strive to maintain safe operations, we are focusing on enhancing employee safety training, improving our worksite environment and creating a vibrant corporate culture in which everyone is free to express their opinions and is allowed to pursue their potential. As for manufacturing, we have an ISO-conformant management system in place to help us constantly improve quality and reduce environmental burdens. Moreover, we will pursue ongoing social contribution activities to create a company appreciated by the residents of surrounding communities.

Fiscal 2016 Achievements under the CSR Policies

Safety



Safety Education and First Aid Training

We have striven to create a safe and comfortable workplace.

Communication



A Company Trip Staying Overnight on a Beach

We are fostering a sense of unity among employees through various recreational activities.



"Family Day"

We invite employees' families to join us for our "Family Day" event, with the aim of fostering our relationships of trust with them.

Participation in a Marathon Relay Race, Soccer Competition and Summer Festival

These recreation activities have helped employees develop a sense of unity.



Community Contributions

As a member of an industrial complex, we have contributed to neighboring villages by, for example, donating PCs.

Future Initiatives

In fiscal 2017, we will celebrate the third anniversary of our founding. We are committed to engaging in ongoing CSR activities based on the policies described here. Reflecting the strong influence of Confucianism on Vietnamese society, people cherish family relationships. With this in mind, we will particularly focus on enhancing our relationships of trust with employees and their families by, for example, holding such events as "Family Day," which provides a good opportunity to help attendees understand our operations.



Staff at Denka Advanced Materials Vietnam

Denka Infrastructure Malaysia



Overview

- Operations** Established in 2002, Denka Infrastructure Malaysia became part of the Denka Group in 2015. Our main business is specialty construction chemicals. It is our mission and vision to become the world leader in the construction chemicals market.
- Address** No 18, Jalan Utas 15/7, Seksyen 15, Shah Alam, 47650, Selangor MALAYSIA
Telephone: +603-5510-8810 Fax: +603-5510-0708
- Employees** 105 (as of April 30, 2017) (Including two Japanese nationals)

Message from Managing Director

Denka Infrastructure Malaysia has been part of the Denka Group since June 2015 and it is our policy to provide healthy and safe working conditions and to continuously use safe operating practices that comply with National and International Regulations and relevant Standards and Guidelines.

We continuously improve our Safety, Health and Environment Manual as well as provide supplementary awareness training to ensure our workplace is safe for both the staff and the environment.



Paul Low
Managing Director

CSR Policies

- Provide for safe practices in operation and provide a safe working environment
- Establish safeguards against all identified risks
- Continuously improve the safety management skills of personnel, ensuring emergency preparedness covering health and safety and environmental protection
- Strive for the unity of all employees

Fiscal 2016 Achievements under the CSR Policies

Safety



Safety Assurance Activities

We provide periodic safety training for employees and subcontractors to raise their awareness of accident prevention. The goal of training is to avoid potential occupational accidents involving workplace injuries, especially during forklift operations, manufacturing processes and chemical handling.

The Environment



Environmental Activities

With the aim of acquiring the ISO 14001 certification, we are reviewing the documents and operational procedures necessary to develop an environmental management system while continuously endeavoring to improve our waste management methodologies.

Future Initiatives

Reflecting the multi-ethnic population of Malaysia, our workforce includes people with a variety of ethnic backgrounds. As we consider unity among employees a matter of importance, we encourage them to participate in events sponsored by in-house sports clubs. Moreover, in 2016 we organized an orienteering tour at a botanical garden under the title "DISB Team Building Event." Going forward, we will strive to foster ties between employees by holding various types of events.



Staff at Denka Infrastructure Malaysia

Denka Advanced Materials (Suzhou)



Overview

- Operations** Established in January 2006 as the Group's first production and sales subsidiary in China, the company engages in the manufacture of whole sheet used to produce carrier tapes and other electronic packaging materials in addition to the slitting of these materials and the supply of food packaging sheets.
- Products** Electronic packaging sheets and films and food packaging sheets
- Address** Unit 9B, No. 333 Xingpu Road, Suzhou Industrial Park, Suzhou, Jiangsu, China 215126
Telephone: +86-512-6287-1088
- Employees** 76 (as of March 31, 2017) (Including three Japanese nationals)

Message from the General Manager

As we did in fiscal 2016, we will strive to abide by our "general manager's policy," namely: "Act according to rules, ethics and your moral compass, strive to understand and respect one another, continuously work to better yourself." In addition to engaging in safety assurance activities, every employee will endeavor to achieve higher quality and greater competitiveness as part of their unflagging efforts to enhance customer satisfaction.



Tatsuya Koyama
General Manager

CSR Policies

- Achieve zero-accident and disaster status through ongoing safety activities
- Ensure legal compliance while promoting environmental conservation initiatives
- Enhance training; continue to upgrade workplaces

Fiscal 2016 Achievements under the CSR Policies

Safety



Initiatives to Maintain Zero-Accident and Disaster Status

On September 9, 2016, we achieved 1,000 days of zero-accident and disaster status. All-out efforts are now under way to prolong this record to 2,000 days.

Communication



Barbeque Events

We held barbeque events while organizing a company trip.

Future Initiatives

- All employees continue to work as one to create a company with safe, clean and rewarding workplace.
- We will remain apprised of needs and expectation of various stakeholders and proactively accommodate their requests.
- We will maintain the status of zero accidents and disasters by helping employees enhance their capabilities to identify potential danger and communicate it to others.

Denka Chemicals Development Suzhou



Overview

- Operations** To ensure prompt response to Chinese consumers' requests for analysis, performance evaluation and product improvements, Denka Chemicals Development Suzhou was established in December 2010, and kicked off operations in August 2011. Currently, the company conducts R&D pertaining to synthetic rubbers, HARDLOC and special cement additives. Since fiscal 2013, it has also been conducting research on functional food packaging sheets and TEMPLOC temporary adhesive.
- Address** Unit 1D, No. 333 Xingpu Road, Suzhou Industrial Park, Suzhou, Jiangsu, China 215126
Telephone: +86-512-6280-6808
- Employees** 19 (as of March 31, 2017)

Message from the General Manager

Based in China, Denka Chemicals Development Suzhou is fully leveraging its geographic advantage to develop new products tailored to meet local market needs and provide customers with needed technical support while actively engaging in technological interaction with universities and other research institutions. In the course of these activities, we endeavor to embody Denka's corporate slogan, "Possibility of Chemistry," thereby creating new value. Moreover, as we recognize the realization of a workplace that places the utmost priority on safety as basic to our research activities, we continually strive to maintain our zero-accident and disaster status.



Kazuhiro Oshima
General Manager

CSR Policies

- Maintain zero-accident and disaster status
- Maintain compliance with China's Production Safety Standards and other laws and regulations
- Develop human resources and help researchers enhance their skills and raise their safety awareness
- Execute operational process reforms and develop an inclusive working environment for researchers

Fiscal 2016 Achievements under the CSR Policies

Safety



Registered as Compliant with China's Production Safety Standards

We were registered as compliant with China's Production Safety Standards (small business category) in August 2016 thanks to employees' assiduous efforts to prepare forms and documents necessary for registration procedures.

Communication



Company Trips Involving Employees' Families



We organized two company trips in 2016. In June, employees accompanied by family members visited a zoo in Anji County, Zhejiang Province, to see pandas. In October, we organized an annual trip to Yangcheng Lake to taste Chinese mitten crabs.

Future Initiatives

In the course of working to maximize the strength of Denka's core technologies, we will tackle unconventional R&D themes while flexibly collaborating with organizations across the board, including other Group business bases in China. In these ways, we will decisively take on challenges of creating new businesses in such growth fields as healthcare, the environment and energy, and infrastructure.

Denka Inorganic Materials (Tianjin)



Overview

Operations In September 2013, Denka Inorganic Materials (Tianjin) was established as the Group's first special cement additive production base in China in light of growing demand for infrastructure development and repair in the Chinese market. In collaboration with Denka Infrastructure Technologies Shanghai Co., Ltd., the regional headquarters for our special cement additive business in China, and the R&D base Denka Chemicals Development Suzhou, we are striving to create a production structure capable of swiftly and accurately meeting market needs with solutions based on locally available materials and construction methods.

Address No. 3 Saicda Mechanical Park, Xiqing Economic Development Area, Tianjin, China 300385
Telephone: +86-22-8792-0488

Employees 9 (as of March 31, 2017)

Message from the General Manager

In addition to creating a workplace that places the utmost priority on safety, we will give due consideration to the environment. To remain a trustworthy manufacturer, we will always undertake our corporate activities with sincerity and integrity.



Yutaka Shirayama
General Manager

CSR Policies

Having positioned the maintenance of safe operations as basic to our corporate activities, we will promote the beautification of our worksite while improving our working environment, with the aim of creating an employee-friendly corporation.

Fiscal 2016 Achievements under the CSR Policies

Safety



Safety Assurance Activities

As part of fire drills, we conducted training sessions on the handling of fire extinguishers.

The Environment



Environmental and Occupational Safety Activities

Before work begins, all plant employees attend a morning meeting and recite safety slogans.

Future Initiatives

- We will maintain compliance with China's laws and regulations on manufacturing safety.
- We will optimize our production systems to improve facility utilization while maintaining disaster-free status.

Denka Electronics Materials Dalian



Overview

Operations Denka Electronics Materials Dalian initiated its manufacturing operations in 2015 to produce ALSINK, a highly functional thermal conductive substrate that plays a key role in enhancing the reliability of power modules installed in high-speed rolling stock and other vehicles. Demand for high-speed rolling stock is expected to grow in markets around the world on the back of growing calls for safer and more environment-friendly modes of transportation. To better accommodate such demand, we will strive to develop a supply structure capable of delivering a steady stream of high-quality products.

Address No. 41-10 Wanda Road Dalian Economic & Technological Development Zone, Dalian, Liaoning Province, China 116600
Telephone: +86-411-6263-4377

Employees 28 (as of March 31, 2017)

Message from the General Manager

In September 2014, Denka Electronics Materials Dalian was established in Dalian, China, to serve as a producer of ALSINK, a thermal conductive substrate used in power modules installed in such vehicles as railcars. Although we are a new company that has been operating only three years, we will strive to create a safe and comfortable workplace, with all employees working as one.



Makoto Fukuda
General Manager

CSR Policies

- Create a safe and comfortable workplace that reflects our policy of placing the utmost priority on safety
- Promote environmental conservation in compliance with relevant laws and regulations
- Nurture human resources through the provision of sufficient education and training

Fiscal 2016 Achievements under the CSR Policies

Safety



Evacuation and Fire Drill

We recite three safety principles at each morning meeting and participate in physical exercises. Moreover, managers carry out safety patrols. The company also conducts risk assessments and provides training for employees to ensure that a safety-oriented culture is embedded in our workplace.



Reciting Three Safety Principles

We apply a "bottom up approach," drawing on employee suggestions to improve our workplace environment and hazard prediction systems. To encourage participation, employees who submit suggestions are commended at general meetings.

Communication

We host such social events as New Year's celebrations and cherry-blossom viewing parties with the aim of creating a workplace in which all workers feel free to share their opinions.

Future Initiatives

We are a new company, with younger employees in their late 20s making up majority of our personnel. We are endeavoring to make sure that Denka's corporate culture takes root in Dalian, China. To this end, we are systematically implementing employee education and training while motivating our Chinese staff to freely devise better ways of working. By doing so, we will create a safe workplace in which everyone finds their job rewarding.

Denka Performance Elastomer



Overview

Operations Having taken over operations related to chloroprene rubber (Neoprene™) from DuPont in November 2015, Denka Performance Elastomer was established as a joint venture owned by Denka and MITSUI & CO., LTD. Bringing together the strengths of Neoprene™, long a top-selling product, and proprietary Denka technology, Denka Performance Elastomer will supply superior-quality products to customers around the world, especially those in the Americas.

Address 560 Highway 44, LaPlace, LA 70068, USA
Tel. +1-985-233-7600
Fax. +1-985-359-4781

Employees 239 (as of March 31, 2017)

Message from the Vice President

Two years have passed since our establishment. With approximately 230 American staff, we are determined to strengthen and expand the Denka Group's chloroprene rubber business. To boost sales of Neoprene™, we are working to enhance our technological capabilities and cost competitiveness. Moreover, we are committed to actively engaging in community-rooted activities, with the aim of contributing to the development of local society.



Masanobu Kosaka
Vice President Technology

CSR Policies

- Place the utmost priority on workplace safety and hygiene, facility security and disaster prevention; maintain legal compliance, thereby fulfilling our corporate social responsibilities
- Continuously endeavor to create a lively and vibrant workplace
- Contribute to the development of local society with the aim of becoming a company capable of winning the deep trust of fellow community members

Fiscal 2016 Achievements under the CSR Policies

The Environment



Collecting Waste from Nearby Households

As we did in last year, we took part in an annual joint initiative in which local businesses collect hazardous waste from neighboring households in April.

Communication



Andouille Festival

We act as a co-sponsor of Andouille Festival, an annual traditional local festival held in St. John Parish in every October.



Periodic Meetings Inviting Local Residents

Every month, we invite administrative officials and local residents to hear a report on the status of plant operations and exchange opinions with us.

Future Initiatives

We will establish a more robust foundation for the Denka Group's chloroprene rubber business in the United States. To this end, we formulated "DPE's Own Way" to promote our corporate principle of pursuing corporate activities that harness the strength of the chloroprene business acquired from DuPont and our own sustainable growth strategies. We will also endeavor to earn the deeper trust of employees as well as those in the surrounding communities. Accordingly, we will strive to facilitate our neighbors' understanding of our operations. In these ways, we will fulfill our corporate social responsibilities.

Icon Genetics



Overview

Operations Icon Genetics is an R&D company specializing in vaccines and diagnostic reagents and has a unique proprietary technology for efficiently manufacturing proteins using the tobacco plant (*Nicotiana tabacum*). Icon operates a Good Manufacturing Practice (GMP) conformant facility and is capable of producing vaccines for clinical trials and prototypes of genetically modified proteins for use in reagents. Over the years, its R&D efforts have yielded an array of product candidates in the fields of vaccines and diagnostic reagents.

Address Weinbergweg 22, D-06120, Halle (Salle), Germany
Tel.+49-345-5559889-664 or 885

Employees 22 (as of March 31, 2017) (Including three Japanese directors and two Japanese researchers)

Message from the CEO

Icon has the magnICON® technological platform, which uses the tobacco plant and is capable of efficiently producing genetically modified proteins for medical applications in a shorter than usual period of time. Having become a part of the Denka Group two years ago, we are currently striving to better utilize this technology to develop new vaccines and diagnostic reagents, with the aim of contributing to people's well-being in various ways.



Kazuyuki Hiruta
CEO

CSR Policies

We maintain compliance with legal requirements for biotechnology companies while continuously improving our workplace environment. As a member of local community, we also strive to become the vanguard of a sustainable business model that creates value that can be shared with society.

Fiscal 2016 Achievements under the CSR Policies

Safety



Safety Assurance Activities (Education and Legal Compliance)

We implemented periodic employee education in order to maintain compliance with Germany's biosafety laws as well as facility-related safety regulations. Also, as required by German and international regulations, we upgraded our GMP-related standard operational procedures as well as our quality assurance systems in step with the sophistication of R&D methodologies we employ.

The Environment

We maintain stringent compliance with domestic rules with regard to the disposal of chemicals and potentially hazardous waste. Although the local municipal authority periodically monitors the company's compliance status, Icon has never been cited for non-conformance nor the subject of administrative instructions.

Communication



Interacting with Local Communities

We participated in a local educational program for students who are interested in biotechnologies, thereby introducing our technologies to young people considering future careers in this industry.

Future Initiatives

- As a bio-oriented R&D company, we will maintain strict compliance with biosafety laws and regulations.
- Focusing on new vaccines for norovirus, we will push forward with product development to deliver solutions capable of contributing to people's well-being in various ways.
- To earn the deeper trust of our stakeholders, we will strive to become a company that creates value that can be shared with local society.

Denka Polymer



Overview

- Operations** Established in 1966, Denka Polymer Co., Ltd. manufactures an array of lightweight plastic food containers. Drawing on the Denka Group's comprehensive strengths, Denka Polymer is striving to maximize the performance of its multilayered and composite sheets while enhancing their wrapping functions, design and coloring to improve product value and open up a range of possibilities for packaging materials.
- Products** OPS products, prepared food trays, food containers, PSP food trays, SOFLIGHT products, agricultural packs and stretch films for food packaging
- Address** Head Office: 5-25, Kiba 1-chome, Koto-ku, Tokyo
Telephone: +81-3-5632-9530
Plants: Three in Chiba Prefecture (Sakura, Goi, Katori)
- Employees** 494 (as of March 31, 2017)

Message from the President

Denka Polymer has maintained strong focus on ensuring the safety of all of its products and thus consumers' trust in them. We have also relentlessly striven to enhance containers' usability, their capability to preserve the taste of whatever is placed in them and their functionality as tableware that makes meals more enjoyable. In 2016, we developed Mighty Guard, a new material boasting superior marketability. Looking ahead, we will continue to endeavor to create new value.



Tsuyoshi Sakamoto
President

CSR Policies

Because we make products that people use every day, our corporate policy is focused on safety and trust. We are also committed to maintaining legal compliance, developing human resources, promoting safety assurance activities and engaging with local communities.

Fiscal 2016 Achievements under the CSR Policies

Communication



Participating in FABEX to Exhibit New Proposals

Having participated in The World Food And Beverage Great Expo (FABEX), we exhibited the new version of U Guard with superior oil resistance and Mighty Guard. Due to their outstanding durability—they do not crack no matter the food content and are highly resistant to holes caused by overheating—these products garnered favorable reviews from attendees for its safety.



Participating in Sakura Monozukuri Festa as Part of Community Engagement Efforts

We participated in a local industrial exhibition hosted by Sakura City, which is home to our production headquarters and plant, to introduce our products and corporate activities to attendees.

Future Initiatives

With all employees fully understanding its corporate objectives, reasons for existence and value systems, Denka Polymer will undertake a variety of initiatives aimed at fulfilling its important missions, such as protecting the environment, ensuring worksite and traffic safety and putting in place fire and disaster prevention measures. We will also implement health checkups and mental healthcare initiatives. In these ways, we will ensure stable operations.

Denka Seiken



Overview

- Operations** Denka Seiken Co., Ltd. supplies vaccines and diagnostic reagents to fulfill its mission of protecting people's lives and well-being. Since its founding, Denka Seiken has ceaselessly striven to eliminate infectious and lifestyle-related diseases with the keyword "prevention."
- Products** Influenza vaccines, bacteriological diagnostic reagents, virological diagnostic reagents, clinical chemistry diagnostic reagents, immunological diagnostic reagents and point of care testing (POCT) products
- Address** Head Office: Nihonbashi Mitsui Tower, 1-1, Nihonbashi-Muromachi 2-chome, Chuo-ku, Tokyo
Telephone: +81-3-6214-3231
Plants: Niigata Plant, Kagamida Plant (Gosen, Niigata)
- Employees** 705 (as of March 31, 2017)

Message from the President

Since its founding, Denka Seiken has been taking on the challenge of eradicating infectious diseases. Under the keyword "prevention," we have positioned protecting the dignity of human life and promoting people's health as our foremost mission. To that end, we are engaged in the manufacture of various vaccines while developing and producing a range of diagnostic reagents. Always conscious of our responsibilities as a pharmaceutical maker, we aim to better contribute to society and, to this end, tackle the latest technological challenges to deliver unique and high-quality products capable of satisfying the evolving needs of customers around the world.



Mitsukuni Ayabe
President

CSR Policies

As befits an enterprise inspired by the value of life, Denka Seiken's mission is to protect people's health and thus earn the trust of society. In line with this, we are committed to ensuring product safety and delivering offerings with superior user convenience. We also proactively implement CSR activities, including those aimed at ensuring occupational safety and hygiene, preserving the environment, engaging with communities and promoting people's health.

Fiscal 2016 Achievements under the CSR Policies

Safety



Fire Drills

To create a safer and comfortable workplace, we are engaged in occupational safety and health initiatives. We also conduct periodic fire drills to ensure that our response to emergencies is swift and appropriate.

Communication



Cleanup Activities in Communities

We carefully monitor factors attributable to our operations that may affect the environment of communities surrounding us, such as odor and noise. At the same time, we proactively participate in local community cleanup activities, maintaining active communication with people from neighboring areas to win their trust.

Future Initiatives

As a healthcare company, we will proactively support sporting and other community events. As part of this initiative, we entered sponsorship contracts with two members of the NIIGATA Albirex BB Rabbits, a top-tier professional team in the Women's Japan Basketball League. We will step up interaction with fellow community members by supporting annual games in which the BB Rabbits play in Gosen City and by serving as a main sponsor for the Gosen Koyo Marathon and the firework event GOSEN HYANDE HANABI.



A commemorative photo taken with members of the NIIGATA Albirex BB Rabbits



Overview

- Operations** In 1963, CRK was established through a joint investment by Denka and local interests based in Takasaki City, with the aim of developing, manufacturing and marketing chloroprene rubber-based compounds and their molded products. Building on its accumulated expertise and experience, CRK has expanded its scope of operations to encompass such products as water-stop and fire-resistant materials for construction and civil engineering use. Today, CRK manufactures and sells a range of natural and synthetic rubber compounds and their processing products.
- Products** Rubber compounds, industrial rubber products, fire-resistant thermal expansion rubber products, butyl adhesive tape and hydrophilic expansible water-stop rubber tape
- Address** 306, Koyagi-machi, Takasaki, Gunma
Telephone: +81-27-362-7510
- Employees** 62 (as of March 31, 2017)

Message from the President

The 2016 Paris Agreement concluded that human civilization may no longer be in a position to reverse the impact of GHG emissions by the late 21st century. In the face of this astonishing projection, we are determined to step up the marketing of our heat-resistant thermal expansive rubber products, which help mitigate fire damage. That's one way how we can contribute to society. Moreover, in our new product development, we will strive to find technological solutions that will reduce the emission of CO₂ by production processes to zero.



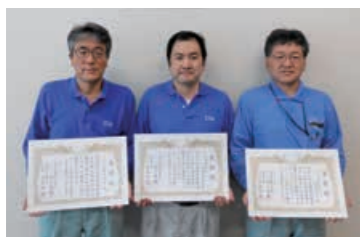
Hideaki Nagasaka
President

CSR Policies

Placing the utmost priority on safety, we will focus on ensuring facility security while giving due consideration to environmental concerns. Furthermore, we will maintain a stable output stream while carefully controlling and enhancing quality. We will also strive to realize a mutually beneficial coexistence with customers as well as local communities, with all departments working together as one to achieve this goal.

Fiscal 2016 Achievements under the CSR Policies

Safety



CRK Is Commended for Its Careful Handling of Hazardous Substances

On May 19, 2017, CRK was chosen to receive an Excellent Business Site Prize under a commendation program sponsored by the Hazardous Materials Safety Techniques Association. Two of its employees also won Excellent Operator Prizes bestowed by the association. In addition, from April 2017 onward we have doubled incentives for those who make proposals with regard to hazard prediction, with the aim of encouraging employees to actively engage in this initiative.

Future Initiatives

- **Safety Assurance:** We will ensure compliance with the revised legal regulations on pressing machines in collaboration with other business bases while considering measures to mitigate the intrinsic dangers of operational processes.
- **Quality Assurance:** Since April 2017, efforts have been under way to renew our ISO9001 certification to ensure conformity with the 2015 edition of said standard, and plans call for the renewal examination to take place in spring 2018.
- **Environmental conservation:** We will ensure clear separation between industrial waste and business-related regular waste while improving the recycling ratio and emissions intensity.



Overview

- Operations** Founded in 1949, Hinode Kagaku Kogyo became the first in Japan to commercially develop a phosphate fertilizer, initiating the manufacture of this product in 1950 under the brand name YORIN. Since then, Hinode Kagaku has remained Japan's leading fertilizer producer and has striven to enhance quality and create new products while cultivating potential demand. In these ways, Hinode Kagaku helps to develop fertile soil, thereby contributing to greater crop yields
- Products** YORIN and BM YORIN (fused magnesium phosphate), TORETARO (fused silicate phosphate fertilizer), mixed fertilizer and chemical fertilizer
- Address** 660, Aza Kuratani, Maizuru, Kyoto
Telephone: +81-773-75-5760
- Employees** 39 (as of March 31, 2017)

Message from the President

In fiscal 2017, Hinode Kagaku Kogyo will mark the 68th anniversary of its founding as Japan's first commercial phosphate fertilizer producer. Now popular in Japan, our phosphate fertilizer is the only product of this kind certified as conforming with national standards for fertilizers used for organic plant production, and it enjoys a solid reputation for safety and environment friendliness. As we aim to contribute to Japan's agricultural sector, we will strive to develop new products and enhance our technological capabilities while passing down our techniques to next generation.



Hisao Akimoto
President

CSR Policies

- Basic Policy:** Contribute to society through fertilizer production while facilitating employees' self-fulfillment
- Environmental Policy:** Promote environmental management activities in line with KES* Step 2 to ensure our harmonious coexistence with the earth's environment
- Safety Policy:** Every employee thinks and takes action to secure their own and colleagues' safety
- Quality Policy:** Strengthen process control while pursuing higher one-pass yields

Fiscal 2016 Achievements under the CSR Policies

Safety



Occupational Safety and Health Education

As part of our risk mitigation initiative, we hold daily meetings to promote KY (hazard prediction) activities before work begins. In addition, we are engaged in an ongoing project aimed at addressing onsite issues involving frontline operators. The operators are encouraged to suggest improvements, and the benefits of the project become more significant each year.

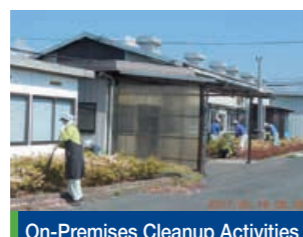
Future Initiatives

- We will maintain favorable partnerships, constructive collaborations and active communication with all of our stakeholders.
- We will strive to further enhance our technological capabilities while ensuring safe and stable production. By doing so, we will maintain robust plant operations well into the future.

Environment



Switchover to LEDs



On-Premises Cleanup Activities

As we did in fiscal 2015, we promoted the switchover of lighting to LEDs, with the aim of improving our operational environment and saving energy. In addition, weeding, a monthly practice we have long engaged in around our premises, was formally incorporated into occupational safety and health plans. In this way, we promote the beautification of our premises.

Communication



Barbeque Events

To facilitate interaction with neighboring communities, we entered a bowling tournament held by companies based in the same industrial complex and engaged in a joint softball game with Denka's Shibukawa Plant. Moreover, our in-house recreation activities included barbeques, golf competitions and summer festivals aimed at deepening ties between employees.

The Environment



Cleanup Activities in Communities

We are currently making technological improvements related to wastewater and exhaust gas based on the KES* Step 2 environmental management system. In step with these initiatives, the stability of peripheral process has improved gradually. In addition, we renewed the regenerative chambers of our 50 year-old open hearth furnace, thereby improving the energy efficiency of the facility thanks to synergies attributable to enhanced combustion management. We also engage in ongoing cleanup activities in neighboring areas.

* Abbreviation for Kyoto Environmental Management System Standard. Formulated by an NPO based in Kyoto, KES Step 2 is designed for relatively large SMEs, and comprises management items that are virtually identical with ISO14001.

Denka Azumin



Overview

Operations Originally, Denka Azumin was the Hanamaki Plant of Japan Metals & Chemicals Co., Ltd. Established in 1962, the plant initiated the production and marketing of AZUMIN in the following year. In 2003, AZUMIN operations were transferred to Denka and the plant was reorganized into Denka Azumin Co., Ltd., making a new start as a manufacturer of humic acid fertilizer and other related products. Remaining a pioneering company in the field of humic acid fertilizer, Denka Azumin is striving to contribute to agricultural production.

Products AZUMIN (magnesium humate fertilizer)
Address 118, 5 Chiwari, Nimaibashi, Hanamaki, Iwate
 Telephone: +81-198-26-2131
Employees 24 (as of March 31, 2017)

Message from the President

We have manufactured AZUMIN for more than a half century, helping to improve farm soils throughout Japan. We handle large amounts of hazardous substances, including nitric acid and heavy oil. Accordingly, we consider our daily KYT (hazard prediction training) activities key to ensuring safe production. In fiscal 2017, we began producing liquid fertilizers as well as chemical fertilizers based on ash from the combustion of chicken droppings. The production of these items involves the use of new equipment and raw materials. With this in mind, we will step our efforts to raise employees' safety awareness and maintain our zero accident and disaster status.



Mamoru Nakamura
President

CSR Policies

- Maintain a zero-accident record (current target: achieving 1,000 days of zero-accident operations)
- Pursue environmental conservation and management activities
- Build relationships of trust with local communities

Fiscal 2016 Achievements under the CSR Policies

Safety



Fire Drills

We conducted a fire drill in order to practice the handling of portable water pumps, including water discharge, as well as the use of fire extinguishers, with the aim of securing our ability to mitigate damage attributable to fire.



Risk Assessment Activities

In fiscal 2016, we launched the overarching risk assessment framework after holding relevant lectures, implementing on-site training and preparing assessment benchmarking forms. Under this framework, we conducted assessments of and made improvements to a total of 36 operations, that included both those selected by the company and those operators raised concerns about.

Communication



A Plant Tour for Local Antipollution Council Representatives

We received a visit by local antipollution council representatives who, in turn, engaged in Q&A sessions centered on our environmental countermeasures and took a close look at our facilities. While we were commended by these visitors for our operational approach, which gives due consideration to the environment of surrounding communities, we were asked to also keep strong focus on maintaining safe operations.

Future Initiatives

- Despite our efforts aimed at achieving zero-accident status for 1,000 consecutive days, we experienced one incident on September 6, 2016. Although the incident did not require absence from work, our unblemished record was curtailed at 427 days. Having implemented measures to prevent recurrences, we are striving toward the new target of achieving 1,000 consecutive days of zero accidents.
- As of March 31, 2017, all our senior contract operators had retired from the workforce. Because of this, the proportion of less-experienced operators grew at both Denka Azumin and its subcontractors. As we consider raising young employees' safety awareness and instilling proper actions essential to the creation of a good company, we will continue to focus on implementing robust employee training.

Environmental Performance

Omi Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	0.98	0.99	0.97	—	—
	Compared with FY2015	—	—	(1.00)	1.01	1.01
CO ₂ emissions (from energy sources)	10,000t	84	85	78	79	82
PRTR substance emissions	t	14	14	14	21	11
NOx emissions	t	3,394	3,209	3,280	3,311	3,150
SOx emissions	t	61	45	42	53	47
Soot and dust emissions	t	67	65	81	55	74
Water used	1,000m ³	63,084	62,925	58,915	55,427	55,427
COD (BOD) discharges	t	850	743	561	344	520
Waste generated	t	101,260	93,768	94,004	88,034	94,460
Final waste disposal	t	69	60	50	44	40

Medium-Term Environmental Plan targets

Omuta Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	1.06	0.99	0.97	—	—
	Compared with FY2015	—	—	(1.00)	0.99	1.00
CO ₂ emissions (from energy sources)	10,000t	13	16	14	14	14
PRTR substance emissions*	t	7	9	8	8	8
NOx emissions	t	788	786	603	703	767
SOx emissions	t	1	1	1	1	1
Soot and dust emissions	t	5	6	5	4	5
Water used	1,000m ³	1,190	1,205	1,177	1,180	1,180
COD (BOD) discharges	t	1	2	1	2	3
Waste generated	t	8,680	12,903	13,470	9,875	8,459
Final waste disposal	t	72	25	17	10	17

Note: Figures include environmental performance data from Kyusyu Plastic Industry Co., Ltd. Medium-Term Environmental Plan targets

Chiba Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	0.96	0.91	0.85	—	—
	Compared with FY2015	—	—	(1.00)	0.94	0.86
CO ₂ emissions (from energy sources)	10,000t	33	27	25	22	25
PRTR substance emissions	t	66	51	49	50	48
NOx emissions	t	263	245	252	160	144
SOx emissions	t	20	16	8	7	7
Soot and dust emissions	t	1	1	1	1	1
Water used	1,000m ³	3,970	3,457	3,908	3,448	4,080
COD (BOD) discharges	t	10	12	13	8	12
Waste generated	t	12,856	11,719	11,960	10,258	10,325
Final waste disposal	t	52	55	71	62	56

Medium-Term Environmental Plan targets

Shibukawa Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	1.11	1.12	1.14	—	—
	Compared with FY2015	—	—	(1.00)	0.81	0.76
CO ₂ emissions (from energy sources)	10,000t	0.7	0.8	0.9	0.9	1.0
PRTR substance emissions	t	3	4	4	4	6
NOx emissions	t	11	11	13	16	12
SOx emissions	t	2	3	4	5	5
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	2,399	2,294	2,089	2,328	2,300
COD (BOD) discharges	t	4	3	3	3	3
Waste generated	t	382	384	442	591	645
Final waste disposal	t	1	2	1	1	2

Medium-Term Environmental Plan targets

Environmental Performance

Ofuna Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	1.05	0.96	0.90	—	—
	Compared with FY2015	—	—	(1.00)	1.05	0.95
CO ₂ emissions (from energy sources)	10,000t	0.7	0.8	0.8	0.7	0.9
PRTR substance emissions	t	1	1	1	1	1
NOx emissions	t	2	1	2	2	1
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	46	42	59	33	33
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	167	137	147	384	145
Final waste disposal	t	16	14	14	2	8

Medium-Term Environmental Plan targets

Isesaki Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	Compared with FY2012	1.12	1.09	1.04	—	—
	Compared with FY2015	—	—	(1.00)	0.91	1.04
CO ₂ emissions (from energy sources)	10,000t	1.7	2.2	2.0	2.0	2.6
PRTR substance emissions	t	0	0	0	0	0
NOx emissions	t	0	0	0	0	0
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	427	433	390	354	445
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	145	171	155	402	163
Final waste disposal	t	0	0	0	0	0

Medium-Term Environmental Plan targets

Denka Innovation Center

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	0.1	0.1	0.2	0.2	0.2
PRTR substance emissions	—	0	0	0	0	0
NOx emissions	t	0	0	0	0	0
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	8	7	6	6	7
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	101	118	108	105	115
Final waste disposal	t	0	0	0	0	0

Medium-Term Environmental Plan targets

Denka Singapore Pte. Ltd. Merbau Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	0.4	0.5	0.4	0.4	0.4
PRTR substance emissions	—	—	—	—	—	—
NOx emissions	t	0.5	0.5	0.5	0.5	0.5
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	58	46	47	58	50
COD (BOD) discharges	t	0.1	0.1	0.1	0.1	0.1
Waste generated	t	336	315	361	286	350
Final waste disposal	t	0	0	0	0	0

Denka Singapore Pte. Ltd. Seraya Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	3.0	4.6	4.6	4.4	3.6
PRTR substance emissions	—	—	—	—	—	—
NOx emissions	t	4.6	4.6	4.9	4.6	5.0
SOx emissions	t	0.9	0.9	0.9	0.9	0.9
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	138	174	217	197	220
COD (BOD) discharges	t	3.2	3.5	3.7	2.9	3.5
Waste generated	t	1,773	1,445	1,588	1,613	1,700
Final waste disposal	t	6	13	12	30	30

Denka Advantech Pte. Ltd. Tuas Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	2.5	1.9	1.7	1.8	2.1
PRTR substance emissions	—	—	—	—	—	—
NOx emissions	t	501	590	530	581	665
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	97	83	73	80	90
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	381	306	199	190	213
Final waste disposal	t	381	306	199	163	200

Denka Advantech Pte. Ltd. South Plant

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	0.2	0.4	0.4	0.4	0.3
PRTR substance emissions	—	—	—	—	—	—
NOx emissions	t	0.6	1.4	1.5	1.4	1.2
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0.1	0.1	0.1	0.1
Water used	1,000m ³	5	10	18	14	12
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	140	288	276	337	286
Final waste disposal	t	11	21	19	31	27

Denka Advanced Materials (Suzhou) Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	—	—	—	—	—	—
CO ₂ emissions (from energy sources)	10,000t	0.05	0.08	0.10	0.09	0.09
PRTR substance emissions	—	—	—	—	—	—
NOx emissions	t	0	0	0	0	0
SOx emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	1.8	1.8	2.0	1.7	1.6
COD (BOD) discharges	t	0	0	0.5	0.1	0.1
Waste generated	t	0	0.2	0.2	0.2	0.8
Final waste disposal	t	0	0	0	0	0.1

Environmental Performance

Denka Chemicals Development Suzhou Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	0.02	0.01	0.02	0.03	0.03
PRTR substance emissions	--	--	--	--	--	--
NO _x emissions	t	0	0	0	0	0
SO _x emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	0.9	0.4	0.5	1.0	1.0
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	20	23	12	17	16
Final waste disposal	t	0.03	0	0	0	0.00

Denka Inorganic Materials (Tianjin) Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	--	0.01	0.01	0.01	0.02
PRTR substance emissions	--	--	--	--	--	--
NO _x emissions	t	--	0.1	0	0.1	0
SO _x emissions	t	--	0	0	0	0
Soot and dust emissions	t	--	0	0	0	0.1
Water used	1,000m ³	--	0.4	0.7	0.6	0.6
COD (BOD) discharges	t	--	0	0	0	0
Waste generated	t	--	8	42	13	39
Final waste disposal	t	--	8	42	13	39

Denka Electronics Materials Dalian Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	--	--	0.04	0.05	0.05
PRTR substance emissions	--	--	--	--	--	--
NO _x emissions	t	--	--	0	0	0
SO _x emissions	t	--	--	0	0	0
Soot and dust emissions	t	--	--	0	0	0
Water used	1,000m ³	--	--	0.1	0.3	0.3
COD (BOD) discharges	t	--	--	0	0	0
Waste generated	t	--	--	0.8	3.3	4
Final waste disposal	t	--	--	0.04	0.10	18

Denka Polymer Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	1.2	1.2	1.1	1.0	1.1
PRTR substance emissions	--	0	0	0	0	0
NO _x emissions	t	0	0	0	0	0
SO _x emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	10	30	28	29	29
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	113	146	139	121	115
Final waste disposal	t	0	0	0	0	0

Denka Seiken Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	1.5	1.6	1.7	1.8	1.8
PRTR substance emissions	--	0	0	0	0	0
NO _x emissions	t	3	4	4	5	5
SO _x emissions	t	3	2	1	1	1
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	440	702	269	287	287
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	275	935	967	943	943
Final waste disposal	t	42	48	70	67	67

CRK Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	0.1	0.1	0.1	0.1	0.1
PRTR substance emissions	--	0	0	0	0	0
NO _x emissions	t	0	0	0	0	0
SO _x emissions	t	0	0	0	0	0
Soot and dust emissions	t	0	0	0	0	0
Water used	1,000m ³	75	74	74	73	73
COD (BOD) discharges	t	0	0	0	0	0
Waste generated	t	84	80	60	61	61
Final waste disposal	t	37	30	19	19	19

Hinode Kagaku Kogyo Kaisha Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	2.4	2.2	2.0	2.0	1.8
PRTR substance emissions	--	5	4	3	4	3
NO _x emissions	t	190	208	141	142	135
SO _x emissions	t	118	101	74	72	70
Soot and dust emissions	t	10	7	6	12	6
Water used	1,000m ³	1,878	1,333	1,330	1,335	1,327
COD (BOD) discharges	t	2	2	3	2	2
Waste generated	t	244	54	38	37	37
Final waste disposal	t	184	4	3	3	3

Denka Azumin Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	0.5	0.6	0.5	0.5	0.6
PRTR substance emissions	--	0	0	0	0	0
NO _x emissions	t	29	26	21	21	22
SO _x emissions	t	2	1	1	1	1
Soot and dust emissions	t	5	4	3	3	3
Water used	1,000m ³	596	603	602	601	601
COD (BOD) discharges	t	4	2	2	2	2
Waste generated	t	52	49	54	49	49
Final waste disposal	t	0.3	0.3	0.3	0.3	0.3

Environmental Performance

Denka Advanced Materials Vietnam Co., Ltd.

Item	Unit	Fiscal 2013	Fiscal 2014	Fiscal 2015	Fiscal 2016	Fiscal 2017 target
Energy consumption intensity	--	--	--	--	--	--
CO ₂ emissions (from energy sources)	10,000t	--	--	0.11	0.19	0.25
PRTR substance emissions	--	--	--	--	--	--
NO _x emissions	t	--	--	0	0	0
SO _x emissions	t	--	--	0	0	0
Soot and dust emissions	t	--	--	0	0	0
Water used	1,000m ³	--	--	11	15	27
COD (BOD) discharges	t	--	--	0	0	0
Waste generated	t	--	--	110	110	275
Final waste disposal	t	--	--	13	76	40