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This report can also be viewed on the Company website. <http://www.kantodenka.co.jp>



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Published: December 2014



Environmental and Social Report 2014



Management Principles

Through the quest for constant corporate growth and acquisition of optimum profits, Kanto Denka is working with all its shareholders, users and employees to create a successful company and prosperous society. To achieve this end, we are endeavoring to ensure that our unique technologies and superior services meet the requirements of our users and build a trusted company based on the principles of sincerity, creativity, prompt response and harmony with nature.

Fundamental Principles and Basic Policies on the Environment and Safety Issues

Fundamental Principles

The conservation of the global environment is one of humankind's common responsibilities. In all our operational activities, based on the principle of self-responsibility, we pay due consideration to environmental conservation and safety issues, from the development, manufacture, distribution, and use of our products, to how they are disposed of.

Basic Policies

- 1 Carry out comprehensive environmental and safety management in such areas as environmental protection, operational safety and disaster prevention, occupational health and safety, chemical product safety, distributional safety, and risk-free international trade.
- 2 Ensure the safety of employees and areas in the vicinity of company facilities by working to achieve no accidents and no operation incidents.
- 3 Work to save energy and resources and reduce the amount of industrial waste generated as a result of operations.
- 4 Ensure the development and introduction of products and manufacturing processes that take environmental and safety issues into account.
- 5 Strictly comply with laws, regulations and agreements related to the environment and safety, as well as establish and meet our own stricter voluntary standards in these areas.
- 6 Promote distributional safety and risk-free transactions with customers.
- 7 Carry out environmental and safety audits.
- 8 Collect information on the environment and safety related to products, and thoroughly disseminate the information to employees and customers.
- 9 Ensure the protection of the environment and safety in overseas operations, technology transfers and the international trade of chemical products.
- 10 Promote risk-awareness to society as a whole, such as local communities, investors and related organizations through the widespread dissemination of our environmental and safety activities, as well as the results of those activities, in environmental reports and other materials.

Message from the Editorial Department

Last year, two fire accidents occurred at our company, making it the fourth consecutive year in which we experience disasters. I would like to express our deepest regret for the damage caused by these accidents and once again apologize to local residents and members of related organizations. Each accident was caused by insufficient application of the rules for reporting, contacting, and consultation, as well as by deficient technology transfer and risk extraction. We recognize that these issues are rooted in lack of education and poor procedure and technology manuals. Therefore, in order to prevent the recurrence of such accidents, we are engaged in thorough revision of education and manuals as our priority task. Furthermore, in recent years we have witnessed the occurrence of numerous disasters caused by localized torrential rains, and experts point to global warming as one of the causes. Our company manufactures a spectrum of special material gases for the electronics industry, and some of them have high global warming potential (GWP). We will focus our efforts on activities to prevent, to the best of our abilities, the release of such substances into the atmosphere. Our company strives to ensure stable operations based on the principles of safety and environmental protection. We would like to ask for your continued guidance and cooperation in the future.

Corporate Profile

Company Name : Kanto Denka Kogyo Co., Ltd
Established : September 22, 1938
Head Office : Waterras Annex, 2-105,
Kanda-Awajicho, Chiyoda-ku,
Tokyo 101-0063, Japan
TEL : 81-3-3257-0371
President : Shiro Yamashita
Capital : ¥2.877 billion
Employees : 564 (as of March 31, 2014)
Sales : ¥30.521 billion

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This report mainly contains environmental and social activities during FY2013 (April 1, 2013 to March 31, 2014).

ISO 9001

A majority of the products are ISO certified.
Shibukawa Plant JQA-1009 (certified in October 1995)
Mizushima Plant JQA-2254 (certified in March 1998)

ISO 14001

Shibukawa Plant JQA-EM0438 (certified in May 1999)
Mizushima Plant JQA-EM0437 (certified in May 1999)

OHSAS 18001

Shibukawa Plant JQA-OH0087 (certified in July 2005)
Mizushima Plant JQA-OH0190 (certified in May 2011)
(OSHMS between 2007 and 2011)

Taking Advantage of Our Accumulated Original Technologies, We will Aim to Become an Even Stronger “Innovative, Development-driven Company”

Over the years, we have accumulated various fluorination and chlorination technologies with outstanding electrolytic techniques at their core, miniaturization technologies developed through ferrochemical operations, as well as absolutely original and unrivaled synthesis technologies that form the foundation of our research and development. Development of new products is one of the tasks of utmost priority outlined in the Mid-Term Management Plan of our company. Against this backdrop, we have positioned “development of unique products that aim to conquer niche markets” taking advantage of the technologies outlined above as an important theme of our operations. We proactively advance research and development of new products capable of social contribution in the fields of electronic materials and life science, particularly with focus on medical drugs and agricultural chemicals. Based on our miniaturization technologies, we are also actively involved in development of applications for various inorganic nanoparticles through manufacturing of prototypes.

We will further strengthen efforts to ensure safe and stable operations as the foundation of our corporate activities. Kanto Denka has returned to its roots and is now engaged in efforts to clarify internal company issues with the cooperation of external experts and launch fresh initiatives for improvement. Based on these fundamental efforts, we will work to transform the awareness and behavior of each and every one of our employees through thorough provision of safety education. Specifically, we will implement company-wide full-fledged efforts to secure the transfer of technological capacities and workplace skills, which tend to weaken with the change of generations. We are committed to transferring, in a steady and reliable manner, the most valuable assets of our company—high technological capacities and traditions of safe operation—to the next generation.

As for reducing the environmental footprint of our activities, we will pursue further effects by utilizing environmental management systems and realizing efficient productivity, advance conservation of energy and resources, and achieve the goal of zero emissions. Through this wide range of efforts, we shall work to further reinforce the corporate culture reflective of Kanto Denka based on the pillars of outstanding technological capacities and safe practices. I sincerely ask for your ongoing support and assistance as we go forward.

October 2014



President of Kanto Denka Kogyo Co., Ltd.

Shiro Yamashita

Kanto Denka Launches New Initiatives to Secure Transfer of Technological Capacities and Workplace Skills for the Future

In order to advance technological innovation and ensure thorough implementation of safe operations, we have launched initiatives for sharing and transferring, across generations and internal structures, the technological capacities and workplace skills developed by our experienced employees. Kanto Denka President Shiro Yamashita, Shibukawa Plant Head Manager Katsuhiko Saito, and Mizushima Plant Head Manager Akiho Kawata explain the ideas behind these new initiatives that look ahead into the future.



See the next page for details.

Creation of structures centered on people that can steadily realize the basic principles

Yamashita: Kanto Denka is engaged in various initiatives to secure the thorough implementation of safe and stable operations. I believe that our basic principles in this respect are to ensure that all employees recognize the weight of our social responsibility, carry strong safety awareness, and execute decisions in a steady and reliable manner.

Kawata: Indeed. I believe that the key to safe and stable operations is the ability to apply the basic principles in practice, for instance through strict compliance with rules and manuals, correct understanding of the Industrial Safety and Health Act, consistent "know-why" education and implementation of OJT, patrolling supervisors, etc.

Saito: We should also emphasize the human-centered nature of such structures. The question is whether each and every one of our operators and supervisors understands well the safety initiatives and is able to apply them. Fostering of human resources able to correctly apply such initiatives is of critical importance, and we must evaluate whether all conditions and requirements are essentially beneficial to people.

Yamashita: That is precisely why at Kanto Denka we work to create operational manuals based on the actual working environment, and use "know-why" materials that explain the manuals in order to make sure that employees understand them well and improve their safety awareness.



President of Kanto Denka Kogyo Co., Ltd.
Shiro Yamashita

Saito: We have organized the basic principles of safe and stable operations in an easy-to-understand format, and repeatedly instruct our employees on operational procedures so that they can learn to apply them as a routine part of daily work. This, however, cannot be achieved overnight. We intend to provide down-to-earth and thorough education in a continuous manner.

Kawata: There is no magic bullet for safety. It is essential to implement down-to-earth continuous efforts on a daily basis. Safety awareness erodes easily, so it is necessary to come up with ways to ensure the continuation of safety-related activities and prevent their transformation into meaningless mundane practices.

Yamashita: Through these activities, we have come to see the issues that must be solved. One is the issue of the generational change. As initiative is passing from one generation to the next, occasionally we come across problems with the transfer of technology, or lack of communication due to insufficient application of the rules for reporting, contacting, and consultation. We are engaged in efforts to deal with these issues.

Transfer of technological capacities and workplace skills from veterans to the young generation

Saito: Since the withdrawal of the baby-boom generation from the workforce, there has been a steady stream of workplace veterans reaching retirement age. Cultivating their followers is a huge issue. The term "workplace skills" does not refer simply to knowledge and qualifications. It is a comprehensive experience-based competence that consists of an ability to act and take decisions, as well as a capacity to manage and coordinate. That is why, we must relentlessly engage in down-to-earth, thorough, and repetitive education from the perspective of the workplace needs. We are implementing focused efforts to create an environment conducive to education of young people at each workplace mainly by experienced veteran employees, but to succeed in these efforts it is essential to return to the basic principles of thorough application of the rules for reporting, contacting, and consultation, and communication.

Kawata: The impact of the decline in the number of veteran employees is quite strong. In order to deal with this issue, at the Mizushima Plant we conduct planned and continuous technological education and "know-why" education activities by veteran and mid-career employees active at the workplace at the beginning and end of their shifts. These activities are producing definite effects. Last year, we experienced several troubles with the launch of operations after periodic repair, but this year operations were restarted without any problems. Going forward, we intend to continue effective education activities.

Yamashita: From this year we launched an initiative under which experienced technicians utilize the intervals between management operations to teach the basics of manufacturing processes to young



Shibukawa Plant Head Manager
Katsuhiro Saito

employees and leave a record of their efforts. This initiative is already producing results. Also, we invite expert coaches on labor safety to provide consultation, and introduce external inspection and guidance based on legal grounds. We expect positive effects from these efforts.

Saito: Shibukawa Plant also provides cooperation to the company-wide efforts in this field. For instance, in order to eliminate unsafe situations, the Environment & Safety Department has organized teams that implement inspection tours of workplaces in addition to the traditional patrols. Also, we have reinforced the level of guidance by the Disaster Prevention Committee that exercises control over dangerous operations such as operations that involve use of fire inside the plant. A special team of the Technology Department at the company Head Office provides cooperation and examines the effect and status of progress of our measures to deal with various safety-related issues. Furthermore, we have introduced external consultants who evaluate safety and sanitation, security and disaster prevention compliance, validity of legal interpretation, etc. In other areas, we have introduced non-utility power generation facilities to ensure the continuous operation of environmental safety equipment in the event of prolonged electric power failure, and make arrangements to avoid causing inconvenience to the local community.

Commitment to maintaining strong ties with the local community

Yamashita: Safe and stable operations are an issue that affects not only our company, but a condition



Mizushima Plant Head Manager
Akiho Kawata

required by the local community and society at large. The members of the local community expect from us not simply to engage in safe and stable operations and protect the local environment, but also to grow together with the local community and become a company that contributes to the development of a prosperous society. It is our mission to respond to these expectations.

Saito: In order to address the questions and concerns of the local community, we routinely hold plant tours for residents of areas near our plants, as well as local community roundtable meetings at which to get the firsthand views of the local community. Also, through public meetings with administration officials and exchange events with various organizations, we respond to the opinions and demands of the public and strive to strengthen communication.

Kawata: The Mizushima Plant is located near a residential area, so we work hard to expand communication with the local community and establish good relations with them. It is essential to contribute to the local community through safe and stable operations, and to realize a mutually harmonious and beneficial relationship with its members. We shall continue our efforts to deepen mutual understanding through proactive participation in local events in addition to the initiatives we outlined above.

Yamashita: I see that both plants proactively participate in exchange events with the local community, and work to improve communication with local residents. Personally, I have few opportunities to meet with members of the local community, but I regularly visit both plants and engage in dialogue with employees at the workplace.

Saito: Building mechanisms with focus on the human element is indeed the fundamental principle of our company. We advance forward through teaching each other, arguing at times, achieving mutual understanding, and cooperating. Naturally, we are faced with a generational gap and changing times, but the efforts we implement will help us not only advance as a company but also gain the trust of the local community.

Kawata: We can take on the challenge to implement various initiatives in a family-like corporate climate. I believe this is what makes Kanto Denka such an appealing company.

Yamashita: I think that our straightforward and persistent approach to all issues is what defines our corporate DNA. I would like to convey to the next generation that engaging in down-to-earth continuous efforts on a daily basis is the key to achieving steady results both in initiatives for safe and stable operations and in communication with members of the local community.

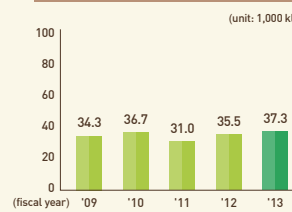
Site Reports

Shibukawa Plant

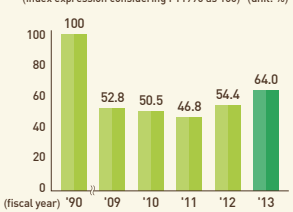
1497 Shibukawa,
Shibukawa City, Gunma

- Plant area: approximately 138,000 square meters
- Number of employees: 252 (as of March 31, 2014)
- Products: [Ferrochemicals] carriers, magnetite [Fluorochemicals] sulfur hexafluoride, carbon tetrafluoride, tungsten hexafluoride, nitrogen trifluoride, hexafluoroethane, trifluoromethane, others

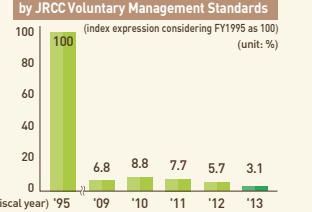
Trends in Energy Consumption in Crude Oil Equivalent



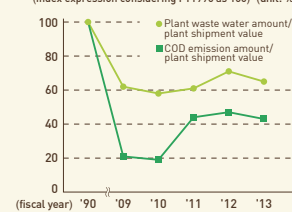
Trends in CO2 Emissions



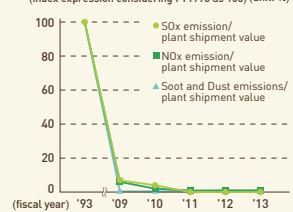
Trends in Emission Amounts of Substances Specified by JRCC Voluntary Management Standards



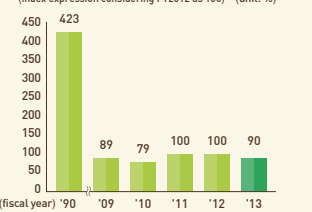
Trends in Plant Waste Water and COD



Trends in SOx, NOx, Soot and Dust Emission Levels



Trends in Industrial Waste Amount Levels

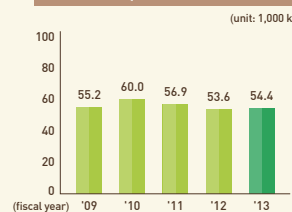


Mizushima Plant

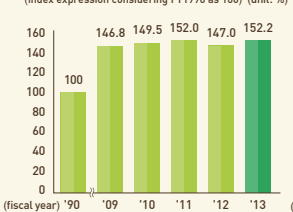
4-4-8, Matsue,
Kurashiki City, Okayama

- Plant area: approximately 185,000 square meters
- Number of employees: 161 (as of March 31, 2014)
- Products: [Fundamental chemicals] caustic soda, sodium hypochlorite, hydrochloric acid, trichloroethylene, vinylidene chloride and perchloroethylene; [Fluorochemicals] lithium hexafluorophosphate, silicon tetrafluoride, chlorine trifluoride, and organic fluorine compounds

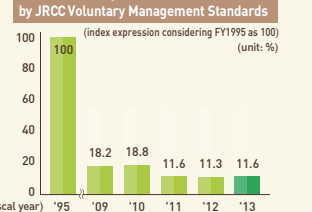
Trends in Energy Consumption in Crude Oil Equivalent



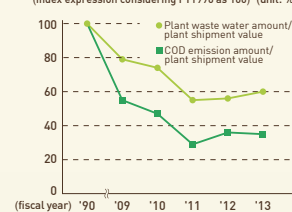
Trends in CO2 Emissions



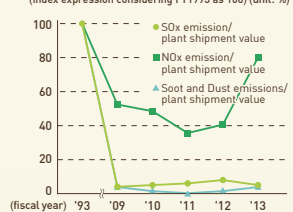
Trends in Emission Amounts of Substances Specified by JRCC Voluntary Management Standards



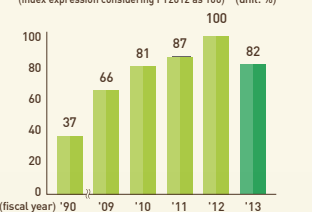
Trends in Plant Waste Water and COD



Trends in SOx, NOx, Soot and Dust Emission Levels



Trends in Industrial Waste Amount Levels



Kanto Denka and Fluorine

Half a Century-Long Advancement in the Field of Fluorine Chemistry. Our Original Technologies Find Application in Everyday Life and in Advanced Science.

Fluorine is utilized in a broad range of fields: from daily commodities to cutting-edge science. Kanto Denka is the first company in Japan that succeeded in industrialization of hydrofluoric acid electrolysis. Today, we possess the world's top-class capacities for manufacturing of fluorine gas. Our company creates a diverse lineup of fluorochemicals and also works to develop various new products.

History of Fluorine Chemistry Development at Kanto Denka

(The year in the name of the product indicates the production starting year.)

1964	1970	1971	1979	1981	1983	1984	1986	1987	1989	1995	1997	2005	2010
Launch of full-fledged research in fluorine chemistry	First successful industrialization of hydrofluoric acid electrolysis in Japan	Sulfur hexafluoride	Iodine pentafluoride	Carbon tetrafluoride	Trifluoromethane	Octafluoropropane	Tungsten hexafluoride	Nitrogen trifluoride	Silicon tetrafluoride Hexafluoroethane	ISO9002 for fluorochemical products at the Shibukawa Plant	Chlorine trifluoride Lithium hexafluorophosphate	Hexafluoro-1,3-butadiene	Monofluoromethane Carbonyl sulfide

In 1964, when Japan was still in the early years of fluorine utilization, Kanto Denka believed in the potential of fluorine and launched full-fledged research.

Industrialization of Hydrofluoric Acid Electrolysis Born after 6 Years of Challenge

In order to realize in practice the first in Japan hydrofluoric acid electrolysis for industrial purposes using a large-scale electrolysis vessel, the person in charge of research back then went to study in the US. After a series of failed experiments and 6 years of hard work, in 1970 Kanto Denka finally achieved the first domestic industrialization of fluorine. To this day, this core technology supports the development of the fluorochemical business of Kanto Denka.



Members of the original fluorine project development team

You can't see fluorine, but it is used for various purposes.



Fusso-kun

Sulfur Hexafluoride (SF₆) Supports Urban Electric Power

Sulfur hexafluoride (SF₆) is utilized as insulation material in transformers. Its application enables high-voltage electrical power transmission and helps make installations more compact. Thus it facilitates installing of high-capacity transformers in urban areas where land prices are high. SF₆ is supporting Japanese electrical power supply from behind the scenes.



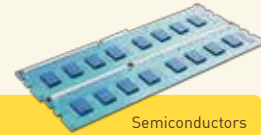
High-grade sulfur hexafluoride production installation



High-capacity transformers



Fluorine: Indispensable for Ultra-fine Processing of Semiconductors



Semiconductors

Semiconductors have a wide range of applications: from mobile phones, through computers, to vehicles. Fluorine-containing specialty gases are indispensable for the manufacturing of semiconductors. For instance, carbon tetrafluoride (CF₄) and other fluorine containing specialty gases used as etching agents enable fine and highly-precise processing that greatly exceeds the precision achieved through chemical solutions.

Development of Original Initiatives to Tackle Environmental Issues

Kanto Denka has installed combustion facilities at its plants. They are used to decompose and process greenhouse gas emissions. The collected calcium fluoride is reused as a raw material for cement and subgrades.



Combustion facilities

What is fluorine?

The major precursor of fluorochemicals is hydrogen fluoride (HF). This chemical compound is obtained when fluorite (the mineral form of calcium fluoride) reacts with sulfuric acid. Fluorine has some unique properties, which cannot be found in other elements, and substances that contain fluorine display the following functionalities: (1) strong resistance to high temperatures, chemicals and ultraviolet rays, (2) low levels of friction coefficient, surface tension and viscosity, (3) high electric non-conductance, and (4) low dielectric constant and index of refraction.

*Hydrogen fluoride (HF) is an inorganic chemical compound composed of hydrogen and fluorine. The solution of HF in water is called hydrofluoric acid.

Application of fluorine

[Semiconductors and telecommunications] Semiconductor lithography, semiconductor etching, cleaning materials, optical fibers

[Traffic and transportation] Vehicle engines, automotive air conditioners, gasoline tanks, airplanes

[Daily life] Liquid crystal display devices, wire coating materials, touch panels, air conditioners, paints, non-adhesive treatment

[Environment and energy] Fuel cells, photovoltaic cells, secondary batteries, electric power substations, water treatment membranes, ion exchange membranes, filters

[Pharmaceuticals] Medicines, agricultural chemicals



Fluorite

Since the fast-growth period for semiconductor demand in the mid-1990s, Kanto Denka has offered a spectrum of fluorine-containing specialty gases for semiconductor manufacturing.

Application of Fluorine for Better Performance of Liquid Crystals

Fluorine is indispensable for liquid crystal displays used in TV, computers, and mobile phones. Organic fluorine compounds used in materials for liquid crystals boost image quality and durability and help reduce power consumption. Various fluorine-containing specialty gases are used in etching and cleaning in the process of manufacturing liquid crystal panels.



Mobile Phones and Computers Driven by Fluorine

We are witnessing an ongoing improvement in the capacities of lithium ion secondary batteries as power source for mobile phones and computers. In 1997, Kanto Denka launched production of lithium hexafluorophosphate (LiPF₆), which is used as an electrolyte material for such batteries. In response to the growing demand, we are working to expand and improve the supply system and despite our late start in this field, we already hold the third largest share on the global market.



Lithium ion secondary battery for mobile phones

LiPF₆ container

So fluorine is indispensable for future technologies, such as fuel cells and photovoltaic cells!



Supply of Environment-Friendly Fluorine-Containing Gases

Kanto Denka is engaged in efforts to develop and manufacture gases that contribute to measures to cope with global warming. For instance, we have succeeded in commercialization of monofluoromethane (CH₃F), a compound with a low global warming potential, and are currently working to launch mass production.



Challenges for the Future

Kanto Denka is engaged in development of products with high added value for the future generations. Such products will tackle global warming or will be used in photovoltaic cells. We are also implementing focused efforts in the field of organic fluorine compounds that hold great potential for application in medical drugs and agricultural chemicals.



RC Promotion Organization

Kanto Denka has a system for promoting responsible care (RC) and compliance. To ensure that each organization functions to their fullest potential, we have concentrated our efforts into the evaluation and improvement of the organizations.



Efforts Geared toward CSR

Kanto Denka believes that we, as a good corporate citizen, have a mission to society to contribute to making peoples' lives safer and more enriching. In order to achieve this goal, we strive to give priority to compliance and risk management in our business practices. Simultaneously, we endeavor to build a corporate culture for making a contribution to communities in which our facilities are located and for putting into practice initiatives for protecting the environment.

Organization



Audit Structure

Self-auditing

Each facility works to achieve continuous improvements in RC activities through the evaluation of our RC measures by linking them to the ISO14001 and OHSAS18001 systems. The results of these self-audits are reflected in the next RC objectives and plans report.

Auditing of Each Facility

The Environmental and Safety Protection Committee, the Quality Management Committee and Logistics Safety Committee once a year, respectively, conduct auditing of goals, plans, implementation systems, and performance evaluation of self-audits in all facilities.



Overall Auditing

Overall auditing involves deliberation and evaluation by the RC Promotion Council of results of auditing carried out by the Environmental and Safety Protection Committee, Quality Control Committee, and Logistics Safety Committee. The results of evaluation of overall auditing are then reflected in management policies, objectives, and the implementation plans for the following fiscal year.

Internal Notification System (Hot line)

In order to respond promptly to breaches of compliance or to prevent them from happening, directors/employees of Kanto Denka are required to swiftly report information on breaches of compliance to the General Manager of the Personnel and General Affairs Dept., the Auditor, or to lawyers outside the company. In addition, the rules stipulate that the person making the notification must not be treated disadvantageously.

Protection of Personal Information

We have formulated and publicized a basic policy regarding the protection of personal information, and are clarifying the rules regarding the storage and disposal of personal information. We have set forth various stipulations, including those for ensuring confidentiality of personal information for persons leaving the company.

Performance and Targets in RC Activities



In FY2013, the 9th Three-Year Plan was launched.

This plan delineates various growth strategies, and at the same time, it also identifies the reduction of environmental impact and safe operation as important pillars. Kanto Denka positions the achievement of the RC Action Targets as one of the immediate priorities.

FY2013 Performance in RC Activities

1	Saving Resources	1% Reduction	Target Reduce the quantity of principal raw materials against plant production volume to a level lower than the FY2012 results.
2	Saving Energy	3% Increase	Target Reduce energy consumption (crude oil equivalent) per unit of production volume by 3% of FY2012 levels.
3	Reduction of Greenhouse Gases Emissions	12% Reduction	Target Reduce CO ₂ equivalent greenhouse gases emissions by 25% of FY1990 levels.
4	Reduction of Environmental Pollutants	12% Increase	Target Reduction of the emission intensity of chemicals specified as PRTR by JCIA to a level lower than the FY2012 results.
5	Reduction of Industrial Waste	16% Reduction	Target Reduce landfill industrial emissions outside our plant to a level lower than the FY2012 results (2,500 tons) by raising the recycling ratio.
6	No Accidents and No Injuries	2 Accidents at Company Facilities	Target ● Workplace Injuries: Zero (zero workplace injuries among the employees and contractors) ● Accidents at Company Facilities: Zero

FY2014 RC Action Target (second year objective of the 9th Three-Year Plan)

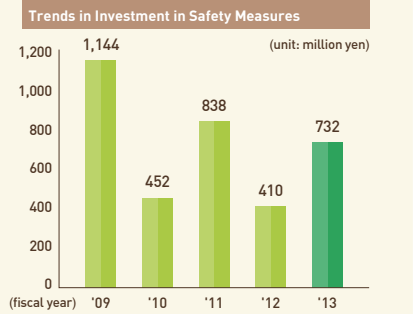
1	Saving Resources	Less than FY2012 actual levels	Target Reduce the quantity of principal raw materials against plant production volume to a level lower than the FY2012 results.
2	Saving Energy	3% Reduction	Target Reduce energy consumption (crude oil equivalent) per unit of production volume by 3% of FY2012 levels.
3	Reduction of Greenhouse Gases Emissions	25% Reduction	Target Reduce CO ₂ equivalent greenhouse gases emissions by 25% of FY1990 levels.
4	Reduction of Environmental Pollutants	Less than FY2012 actual levels	Target Reduction of the emission intensity of chemicals specified as PRTR by JCIA to a level lower than the FY2012 results.
5	Reduction of Industrial Waste	Less than FY2012 actual levels	Target Reduce landfill industrial emissions outside our plant to a level lower than the FY2012 results (2,500 tons) by raising the recycling ratio.
6	No Accidents and No Injuries	0 Incidents	Target ● Workplace Injuries: Zero (zero workplace injuries among employees and contractors) ● Accidents at Company Facilities: Zero



Investment for the Achievement of RC Action Targets

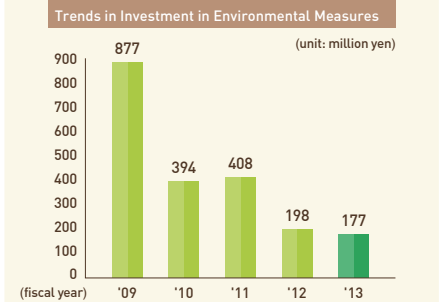
Investment in Safety Measures

We have made efforts to improve our work environments and increase safety awareness by making investments with a focus on safety measures, which are essential for sustaining our safe operations, including the improvement of manufacturing facilities, strengthening of education and training within the Company, and participation in external workshops.



Investment in Environmental Measures

In FY2013, we made environment investments for items such as reducing greenhouse gases, promoting resource-saving and energy conservation, reducing the emissions of environmental pollutants, and reducing industrial waste.



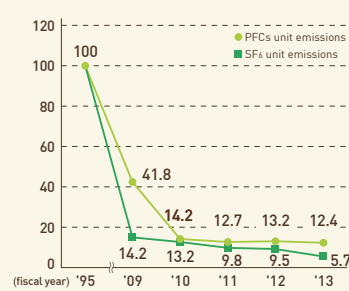
Trends in Reduction of PFCs Emissions

Target

Progress of the JCIA's Voluntary Action Plan. 50% reduction in PFCs unit emission and 75% reduction in SF₆ unit emissions of 1995 levels during the Kyoto Protocol's first commitment period (2008-2012), and maintain this level.

Kanto Denka manufactures PFCs and SF₆ gases that are indispensable in the electronic devices industry. As these gases have a high global warming effect, Kanto Denka, as part of JCIA's Voluntary Action Plan, has undertaken efforts to reduce PFCs unit emissions by 50% and SF₆ unit emissions by 75%, compared to 1995 levels by 2010. Through these efforts, we achieved the reduction objectives in FY2009, and since then, have been working to further reduce all greenhouse gases emissions based on our own 9th RC action plan. In FY2013, we achieved the reduction of PFCs and SF₆ by 6% and 40%, respectively, by implementing a fine improvement in the manufacturing process.

Trends in Reduction of PFCs and SF₆ Emissions (index expression considering FY1995 as 100) (unit: %)



*Greenhouse Gases

Greenhouse gases are identified as substances that cause global warming, including carbon dioxide, dinitrogen monoxide, methane and hydrofluorocarbons (HFCs), as well as perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆), both of which are handled by Kanto Denka.

*PFCs

PFCs are compounds consisting of fluorine and carbon. Kanto Denka produces tetrafluoromethane (CF₄), hexafluoroethane (C₂F₆), octafluoropropane (C₃F₈), and octafluorocyclobutane (C₄F₈).



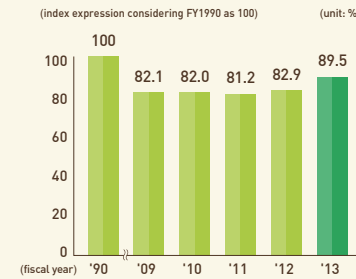
Reduction of Carbon Dioxide Emissions

Target

Kyoto Protocol target for Japan by FY2010 is 6% below the FY1990 levels

The Kyoto Protocol required Japan to reduce its emissions of carbon dioxide by 6% (compared to FY1990 baseline year levels) by the end of FY2010. We were able to achieve this target by an early date. In FY2013, while emissions increased due to the increase in overall production volume, we achieved a 10% cut in emissions compared to the baseline year levels.

Trends in CO₂ Emissions (index expression considering FY1990 as 100) (unit: %)



Coexistence with the Global Environment

Kanto Denka aims to realize energy conservation and zero emissions by the environment management of the production process and introducing environmental technologies

with Environment

realize energy conservation advancing the utilization of system as well as reviewing and introducing and equipment.

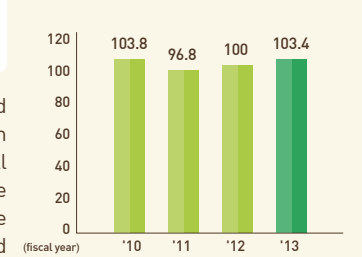
Reduction of Energy Consumption

RC action target

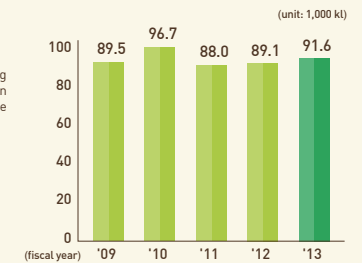
Reduce energy consumption (crude oil equivalent) per unit of production volume by 3% of FY2012 levels.

In FY2013, despite maintaining energy use at a level of around 90,000 Kℓ in crude oil equivalent, specific energy consumption increased to 103.4 considering FY2012 as 100 due to an overall increase in production, which involves a process with large specific energy consumption. Moving forward, we will continue to strive to continuously improve production efficiency and contain energy use, as well as promote the reduction of specific energy consumption.

Trends in Specific Energy Consumption (index expression considering FY2012 as 100) (unit: %)

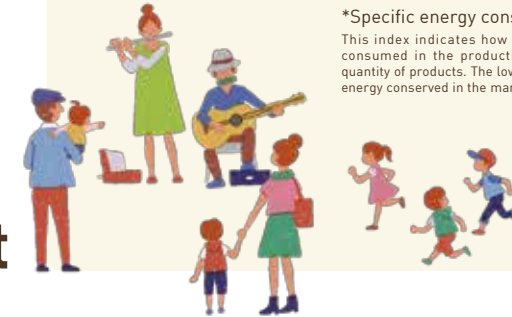


Trends in Energy Consumption in Crude Oil Equivalent (unit: 1,000 kl)



*Specific energy consumption

This index indicates how much energy is being consumed in the production of a certain given quantity of products. The lower the figure, the more energy conserved in the manufacturing process.



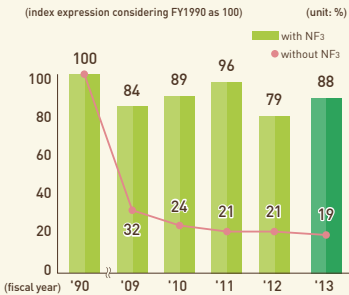
Reduction of Greenhouse Gases Emissions

RC action target

Reduce CO₂ equivalent greenhouse gases emissions by 25% of FY1990 levels

From an early stage, Kanto Denka has included in its reduction targets nitrogen trifluoride (NF₃), which will newly become subject to reductions. This represents our commitment to reduce our greenhouse gases emissions even further. In FY2014, we are currently implementing equipment measures to promote significant reductions of NF₃ emissions.

Trends in Greenhouse Gases Emissions (index expression considering FY1990 as 100) (unit: %)



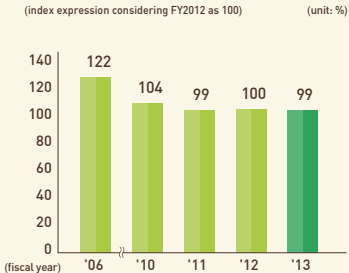
Saving Resources

RC action target

Reduce the quantity of principal raw materials against plant production volume to a level lower than the FY2012 results.

As aggregating data on saving resources is significantly affected by the soaring unit cost of raw materials, Kanto Denka is switching over to a calculation method (*) that can accurately display results without being affected by unspecified elements. By enhancing the yield of our products, in FY2013 we tried to achieve a 1% improvement compared to FY2012 levels.

Trends in Raw Material Consumption (index expression considering FY2012 as 100) (unit: %)



(*)Calculation is based on "Base Unit = Quantity of Raw Materials Consumed (t) / Production Volume (t)"

Target for Reduction of Substances Specified by Management Standards

Target

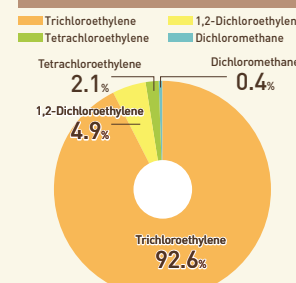
Manufacturing facilities' reduction of emission amounts of substances specified by JRCC Voluntary Management Standards

Kanto Denka currently manufactures four of 12 substances specified by the Japan Responsible Care Committee (JRCC) for priority reduction in atmospheric emissions. We manufacture the four substances of trichloroethylene (TCE), tetrachloroethylene (PCE), 1,2-dichloroethane (EDC), and dichloromethane.

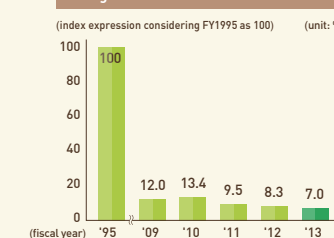


Emission Amounts of JRCC Voluntary

Breakdown of Substances Emitted in FY2013



Trends in Emission Amounts of Substances Specified by JRCC Voluntary Management Standards (index expression considering FY1995 as 100) (unit: %)



Reduction of the emissions of environmental pollutants

RC action target

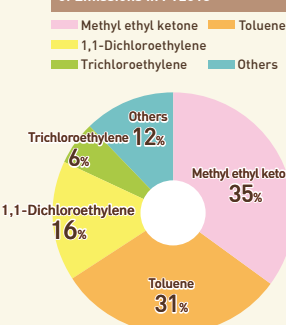
Reduction of the emission intensity of chemicals specified as PRTR by JCIA to a level lower than the FY2012 results.

Kanto Denka handles 18 substances (including those less than 1 ton) that are specified as PRTR by law, but we manage substances in accordance with the larger range of substances specified by JCIA. In FY2013 we handled 251,000 tons of the 30 substances specified as PRTR by JCIA. The emissions amount was 26.0 tons, and the emissions unit was 0.104kg for every 1 ton handled.

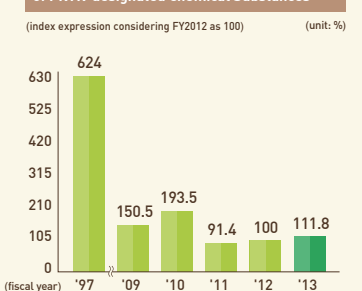
*PRTR

The PRTR (Pollutant Release & Transfer Register) is a reporting and management system to help identify the quantity of chemical substances released into the environment, including the atmosphere, water sources, and the soil, and the quantity processed as waste materials. In Japan, the PRTR Law came into force in March 2001. The release and transfer quantities reported by companies are made public by the relevant authorities annually.

Breakdown of the 26.0 tons of Emissions in FY2013



Trends in Emission Amounts of PRTR-designated Chemical Substances (index expression considering FY2012 as 100) (unit: %)



Reduction of Plant Waste Water and COD

Target

Reduction of the amount of plant waste water and COD emissions

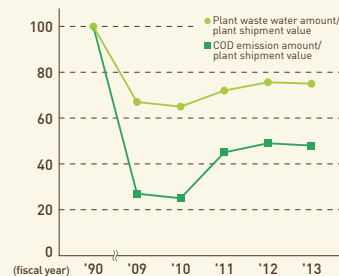
Kanto Denka has been working to reduce plant waste water and COD emissions, including recovering pollutant substances from our manufacturing facilities. In FY2013, there was a slight improvement in comparison with the previous year.

*COD (Chemical Oxygen Demand)
One indicator of pollution in water is the amount of oxygen necessary to decompose pollutants and other substances in water. The lower this figure is, the cleaner the water.



Discharged water (cleaned at the plant)

Trends in Plant Waste Water and COD
(index expression considering FY1990 as 100) (unit: %)



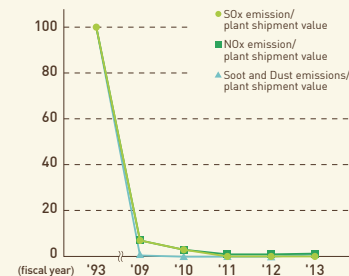
Reduction of SOx, NOx, and Soot and Dust Emissions

Target

Reduction of emissions in accordance with voluntary management standards

We are working to reduce the emissions of atmospheric pollutants, namely, SOx (sulfur oxides), NOx (nitrogen oxides), and Soot and Dust by stably operating emissions equipment. In recent years, we have maintained low levels of emissions for all of these substances.

Trends in SOx, NOx, Soot and Dust Emission Levels
(index expression considering FY1993 as 100) (unit: %)



Working towards Safety

Reviewed the methods for safety audit, promoted the search of problems in each office, and formulated improvement measures. The entire organization of Kanto Denka and all of its employees have started to make new efforts to realize the objective of "No Accidents and No Injuries."



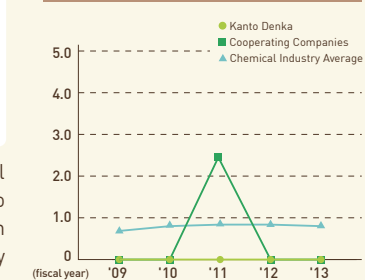
No Accidents and No Injuries

RC action target

Zero cases of industrial accidents, accidents at company facilities, or leaks of hazardous substances during transportation from Kanto Denka facilities to customers

With the objective of achieving "No accidents and No Injuries," all employees at Kanto Denka and cooperating companies are working to "create a culture of safety" and to "create a workplace where people can work actively and in good health." However, one fire accident at a facility in 2012 and two in 2013 occurred. While there was no human suffering and damage to the surroundings of the facility, these incidents caused a great deal of inconvenience and worry to related parties, as well as to local residents. We would like to apologize once again for what happened. Kanto Denka is working to ensure that such accidents will never occur again by reinforcing the safety management of our facilities and improving the handling of chemicals, as well as by implementing the enhancement of safety education and redevelopment of procedure documents with an aim to increase our employees' risk awareness.

Frequency Rate of Lost Work-time Accidents



The safety first tower

* Frequency Rate

The frequency rate of lost work-time accidents is an index showing the number of deaths/injuries per one million hours worked. It is based on a by-industry nationwide study, carried out by the Ministry of Health, Labor and Welfare, and adjusted for company size and number of hours worked.

Trend in the number of facility accidents

Fiscal year	'09	'10	'11	'12	'13
Number of accidents	0	0	1	1	2



A scene in which younger employees are receiving guidance from former employees.

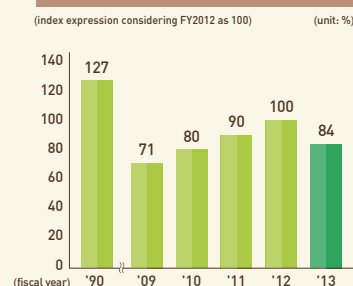
Reduction of Industrial Waste

RC action target

Reduce landfill industrial emissions outside our plant to a level lower than the FY2012 results by raising the recycling ratio.

Kanto Denka has been making proactive efforts to reduce the generation of waste products by controlling and reducing the volume of waste products while promoting recycling. While industrial waste has been temporarily increasing due to the launch of new facilities, we also contributed to the reduction of waste in FY2013 by improving the raw materials consumption.

Trends in Industrial Waste Amount Levels
(index expression considering FY2012 as 100) (unit: %)



The Amount of Emissions of Greenhouse Gases: Report based on the Law Concerning the Promotion of the Measures to Cope with Global Warming

Kanto Denka reports data in accordance with the Mandatory Greenhouse Gas Accounting and Reporting System based on Japan's Law Concerning the Promotion of Measures to Cope with Global Warming. The volume of CO₂ equivalent emissions in FY2013 amounted to 0.355 million tons. In March 2009, Kanto Denka installed a combustion facility in order to suppress the emissions of the substances, which have a high global warming potential. The facility has continued to operate steadily ever since, and has had an even greater effect than anticipated.

	Figures for 2009 (official)	Figures for 2010 (official)	Figures for 2011 (official)	Figures for 2012 (reported)	Figures for 2013 (reported)
Originating from energy	21.2	21.3	21.6	21.5	23.2
Emissions of PFCs, etc.	33.3	17.8	14.5	15.1	11.7
Originating from distribution fuel	0.6	0.6	0.6	0.5	0.6
Total	55.1	39.7	36.7	37.1	35.5

Unit: 10,000 tons of CO₂



Building the foundation towards safe and stable operations

All the employees have a strong risk awareness and regularly practice the new safety measures within their work.

In 2013, Kanto Denka conducted a periodic safety audit emphasizing the understanding of actual situations in each office and made an effort to clarify the problems hidden in the workplace, with the help of an external consultant. As a result, problems such as "a decline in the risk prediction ability due to a decrease in the number of experienced employees," "insufficient consideration to safety due to insufficient communication," and "insufficient risk assessment when operating and changing equipment" have been revealed. In response to these results, we have determined four priority issues - "enhancement of technical tradition," "enforcement of human resources development," "thorough sharing and transmission of information" and "thorough implementation of risk assessments" - and are working on the following improvement plans.

- Shifting of the educational focus from "one to many" to "one to one."
 - Standardizing and enhancing the contents of procedure manuals and know-how documents (Based on the knowledge and experiences of veteran employees, enhance the contents that need to be handed down to younger employees).
 - Clarifying the response procedures in the case where non-regular work and unpredictable events have occurred.
 - Creating a mechanism to re-ensure the practice of "report, contact and consultation," which meets the environment of a workplace involving shift work.
 - Re-clarifying potential risks based on the accidents and troubles which have occurred in the past.
 - Implementing a timely revision schedule to surely reflect modified contents into the procedure.
 - Implementing legal and safety education utilizing consultants and external organizations.
- And other plans.

Kanto Denka will make efforts to realize the objective of "No Accident and No Injuries" by increasing safety awareness of the employees and ensuring the safety of operations through these new initiatives.



A scene in which a consultant is providing guidance.

Kanto Denka will put efforts into its existing safety measures, whilst working on its new initiatives towards safe and stable operations.



Safety Activities at our Plants

Implementation of safety education

In order to reduce potential risk factors underlying occupational injuries on a regular basis, we are aiming for more effective safety measures through provisions such as safety education during the morning meeting tailored to specific types of work. We are also improving work processes at each site as necessary in order to ensure that the safety measures are enforced.

Implementation of KYT (Kiken Yochi Training: Danger Prognosis Training)

In order to make clear what dangers the work entails, we gather near accident cases into a database and make use of it for KYT. Furthermore, once a month at each workplace, a meeting is held to discuss solutions based on these near-accident cases, and solutions for minimizing the risk factors are implemented continuously.

Safety Measures for Mechanical Equipment

In addition to risk assessments of newly-built or added machinery, we conduct safety inspections based on test operation plans and periodic inspections in compliance with regulations. We also create and routinely review operating manuals, and thereby, promote safety measures for mechanical equipment.

Implementing Disaster Prevention Drills

At the Shibukawa and Mizushima plants, in preparation for accidents and industrial accidents, plant disaster self-prevention teams, workplace disaster self-prevention teams, fire-fighting squads, and ambulance teams are brought together to form Kanto Denka's disaster self-prevention group. Disaster prevention drills and joint training exercises with public fire departments are carried out on a regular basis. In addition, at each plant we carry out monthly and departmental disaster prevention drills, and also emergency contact drills for our night duty staff.

Safety Measures for Chemical Substances

As a company that handles large amounts of chemical substances, Kanto Denka pays utmost consideration to their safe management. Our chemical substances are managed in line with the Guidelines on Management of Chemical Substances incorporated in the PRTR Law, the Industrial Safety and Health Law, and the Poisonous and Deleterious Substance Control Law, and are verified by third parties such as ISO 14001 and OHSAS18001. With respect to poisonous and deleterious substances which require careful handling, we are strengthening their safety management by ensuring segregation management and implementing procedural manuals.

Warning Labels Based on PL (Product Liability)

All of our products are affixed with PL labels listing handling precautions. The Quality Control Committee carries out company-wide audits, including checks of the Shibukawa and Mizushima Plants and their research laboratories, to ensure that product safety measures based on the Product Liability Law are being followed. Their findings are then reported to the RC Promotion Council.

* The PL (Product Liability) Law

The PL (Product Liability) Law is a law stating that if the consumer can prove defects in a product, the manufacturer's responsibility will be questioned regardless of whether the fault lies with the manufacturer or not, and was entered into force in 1994. As a result of this law, companies are required to pursue even stricter safety standards.

Logistics Safety

Kanto Denka is working to reduce potential risk factors in distribution through such measures as preventing deformation and damage of containers, securing the environment and safety of filling stations and distribution centers, and implementing a user facility improvement program. As part of these efforts, our Logistics Safety Committee is conducting safety auditing for each office and transporter.

Ensuring Safety in Emergencies

In order to ensure safety in the event of an accident, it is a requirement for all transportation companies to have the Yellow Card and SDS (Safety Data Sheet) documents at all times during transportation. The documents contain emergency contact numbers and details of emergency steps to be taken during emergencies.

User Facility Improvement Program

Since 1996, Kanto Denka has been implementing ongoing activities to improve customers' facilities. If a driver finds environmental or safety anomalies at a customer site, Kanto Denka investigates it based on the transporter's report. At a later date, we make a recommendation for improvement and recommend that the customer take the appropriate steps. As a result, 119 out of 121 improvement requests made in the past have been taken and implemented.



Safety education carried out before the start of operations



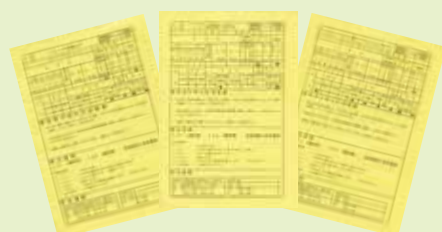
Joint training exercise with the public fire department



PL labels
These labels give product safety information



Special gas transport vehicles make delivering products safer



The Yellow Card is an emergency contact card printed on yellow paper, which details the steps that a driver or assistant must take in the event of a traffic accident involving chemical substance or high-pressure gas, as well as the measures the fire department, police, and other emergency services should take.

Interaction with the Local Community



Kanto Denka provides opportunities to interact with people in the local community and strives for mutual understanding through interactions between people.

RC Briefing Sessions

We introduce the initiatives of responsible care activities, which are a core responsibility of companies that produce and handle chemical substances.

Local Community Roundtable Meetings

We hold roundtable meetings with our plants neighbors a multiple times a year. We listen to the views of the local community and address their questions or concerns.

Plant Tours

Plant tours are offered as needed to people from a variety of different age groups. Discussions are held on operational safety and environmental activities.

Display at the Shibukawa Industrial Technology Promotion Exhibit

Each year Kanto Denka hosts a display at an exhibit organized by Shibukawa City. The latest results of our R&D activities and production activities are introduced.

Blood Donation Activities

Many employees take part in Kanto Denka's blood drives held twice a year at both the Shibukawa and Mizushima Plants.



Greenery Activities

Kanto Denka promotes greenery at its plants and offices to conserve the environment and create comfortable workplaces. Innovative efforts are employed to motivate employee participation, e.g., setting up commemorative monuments and naming greenery areas after each department and division.

Clean-up Activities

In addition to weeding and garbage pick-up near its plants, Kanto Denka participates in city- and district-led clean-up events as well as clean-up activities conducted by neighboring communities.

NPO Shibukawa Regional Monozukuri Council

Shibukawa Regional Monozukuri Council contributes to the beautification of the local community through the planting of flowers along the center divider of local national roads and green areas. Employees of the Shibukawa Plant participate in this activity. The planting of flowers near the roads has led to a significant reduction in the amount of garbage disposed by passing vehicles (people). The bonds of friendship with the local people have also deepened through this activity.



Aiming to Create Dynamic Workplaces

Creating Pleasant Working Environment

A hotline for consultation regarding sexual harassment, power harassment, and mental healthcare with an involvement of professionals is available for our employees. In addition, internal rules have been established in order for the employees to have a living plan with peace of mind including childbirth, nursing care, and re-employment.

"Ryoyu-Kai" Activities

Ryoyu-Kai provides networking opportunities for employees outside of the workplace. Through various club and other activities, employees meet and interact with peers they do not normally interact with.

K-SF³ Activities

As a business improvement activity, we operate our unique K-SF³ (Kantodenka Step Forward Cube) system. "Cube" indicates our initiatives from the viewpoint of productivity (product quality), safety and the environment, and in 2013 we received approximately 400 proposals from individuals and different offices. Every year, excellent activities are honored on our founding anniversary.



Holding a variety of workshops and seminars

In order for each employee to engage in their work with confidence, we are striving to provide education regarding necessary knowledge and measures by holding various workshops and seminars such as a "Heatstroke measures seminar," an "AED workshop" and a "Traffic lecture."



AED Workshop

Offering a Wide Range of Employee Training Programs

Kanto Denka offers new employee, 6-month, and 3rd-year training sessions, as well as rank-based training sessions. We also have elective correspondence courses to support the independent studies of employees. We also conduct mental health and sexual harassment training programs.



Traffic Lecture