Basic Policy

Mitsubishi Chemical carries out Responsible Care (RC) activities,[1] which are voluntary activities in the chemical industry for ensuring environmental conservation, health and safety. In line with the Mitsubishi Chemical Holdings Group Charter of Corporate Behavior and with the aim of realizing KAITEKI, we implement RC activities based on the five pillars of process safety and disaster prevention, occupational safety and health, environmental conservation, chemical and product safety, and logistics safety.

1 Responsible care activities: Voluntary activities undertaken by companies that handle chemical substances to protect the environment, health and safety across all related processes, from the development of such substances to their manufacturing, distribution, use, final consumption and disposal. These activities also encompass the publishing of the results of such efforts and dialogue and communication with society.

Implementation Framework

Mitsubishi Chemical (MCC) has designated departments responsible for promoting each of the five pillars of its Responsible Care (RC) activities. These departments work together to carry out RC activities. The designated departments draft annual RC action plans that are then deliberated by the Environmental and Safety Promotion Committee, comprising the director in charge of RC, representatives of the business domains and plant general managers, before being discussed by the Executive Management Committee and then going to the President for final approval. The director quickly informs employees of the approved plans and orders the creation of action plans for plants and business domains based on said plans. The departments responsible for implementing RC activities monitor the action plans of the plants and business domains and their implementation status and provide support and instruction aimed at improvement, thereby helping to improve the RC activities of the MCC Group as a whole.

RC activity pillar	Implementation division
Process safety and disaster prevention	Environment & Safety Division
Occupational safety and health	
Environmental conservation	
Chemical and product safety	Product Stewardship & Quality Assurance Division
Logistics safety	Purchasing & Logistics Division

Environment and Safety

Basic Policy

Mitsubishi Chemical (MCC) has established the Environment and Safety Principles as well as Policies Related to Environment and Safety, and it implements activities related to process safety and disaster prevention, occupational safety and health, and environmental conservation.

Environment and Safety Principles

1. Safety lies at the foundation of the company's very existence, and ensuring safety is the company's social responsibility.
2. The company has an obligation to conserve and improve the environment and become an entity that is friendly to both people and the planet.

Policies Related to Environment and Safety

1. We will comply with social rules and standards, including corporate ethics in addition to applicable laws.
2. We will pursue zero accidents and zero occupational injuries.
3. We will reduce our environmental impact to prevent global warming and protect the natural environment.
4. We will educate our employees about the environment and safety so that they can act with awareness of their own responsibilities.
5. We will communicate closely with society to enhance understanding and trust.
6. We will continue making improvements by utilizing the latest technologies and available internal and external information.

MCC has established the MCC Group Basic Safety Behaviors, three behaviors for all employees to practice in order to prevent employee behavior-related accidents. We aim to foster an interdependent mindset throughout the organization; to this end, employees not only work to internalize the basic behaviors themselves, but remind one another and raise each other's awareness.

MCC Group Basic Safety Behaviors

1. Hold the handrail on the stairs
2. Do not bring your hand close to a moving object
3. Do not walk around while looking at something in your hands

Based on the above environment and safety principles and policies, every year, MCC creates a Group environment and safety action plan. The plan reflects the results of the previous year's plan and audits and lays out yearly targets, policies and key measures.

The fiscal 2020 plan included the annual targets of zero serious process safety incidents, zero serious occupational accidents, zero environmental incidents and contribution to the global environment. The annual policy under the plan was to precisely understand workplace weaknesses and steadily make improvements. In line with this plan and the status of each workplace, we carried out environment and safety activities.

Audits of Environment and Safety Activities

MCC conducts safety audits and environmental audits covering 15 plants, two R&D centers and 94 domestic and overseas Group company sites.

In fiscal 2020, MCC conducted safety audits of 12 plants and 23 Group company sites as well as environmental audits of six plants, one R&D center and three Group company sites. Through the audits, MCC checked and evaluated the workplaces' PDCA cycles based on audit subjects designated in the fiscal 2020 audit plan and provided guidance related to needed improvements.

MCC checks to confirm that audited plants, R&D centers and Group companies are working to make necessary improvements by, for example, improving their facilities or reviewing their standards in response to guidance provided as a result of such audits.

	FY2020 audits performed	Total issues identified	FY2020 audit plan audit subjects
Safety audits by MCC	• MCC: 12 plants • Group companies: 23 sites	127	• Implementation of action plans • Implementation of measures to prevent occupational accidents, other incidents and their recurrence • Compliance with safety laws
Environmental audits by MCC	• MCC: 6 plants and 1 R&D center • Group companies: 3 sites	25	• Compliance with environmental laws • PDCA cycles for environmental conservation activities

Process Safety and Disaster Prevention, Occupational Safety and Health

Basic Policy

Mitsubishi Chemical (MCC) creates action plans comprising annual targets, annual policies and key measures reflecting the status of activities and results of the previous fiscal year and uses said plans to carry out process safety and disaster prevention and occupational safety and health activities. In fiscal 2020, we implemented activities in line with the annual goals of zero serious process safety incidents and zero serious occupational accidents as well as the annual policy of precisely understanding workplace weaknesses and steadily making improvements.

Preventing Process Safety Incidents and Occupational Accidents, Key Measures

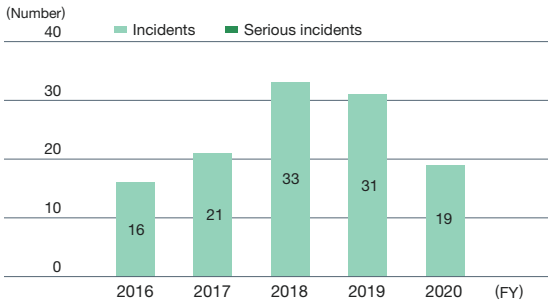
In fiscal 2020, there were 16 incidents, including small fires and leaks of hazardous materials, as well as three chlorofluorocarbon gas leak incidents.

The main causes of the incidents were the corrosion and degradation of facilities and insufficient checking during facility inspections and operations. Behind these factors were management problems, including delays in response to facility aging, insufficient knowledge and insufficient education. However, as process safety incidents have been decreasing, we believe that patrols and other efforts to improve facility management are beginning to produce results.

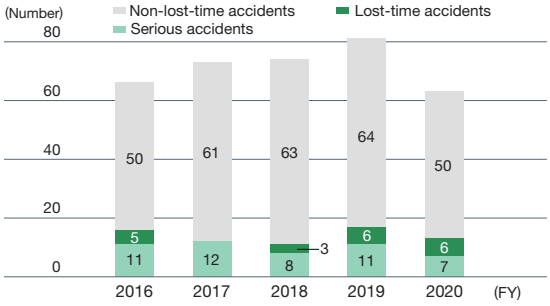
In fiscal 2020, seven serious occupational accidents resulting in four or more days of lost work occurred in Japan. These accidents included such incidents as getting caught or entangled in machinery and contact with high/low temperatures. The main causes of these occupational accidents were lack of competency in basic practices and operations, inadequacies in work procedures and inadequacies in structure design and management. Behind these factors were management problems, including insufficient education and training, insufficient safety activities, and insufficient risk assessment.

Although the total number of lost-time accidents (including those classified as serious) decreased from the previous fiscal year, numerous such accidents still occur, and we will continue striving to reduce the occurrence of occupational accidents.

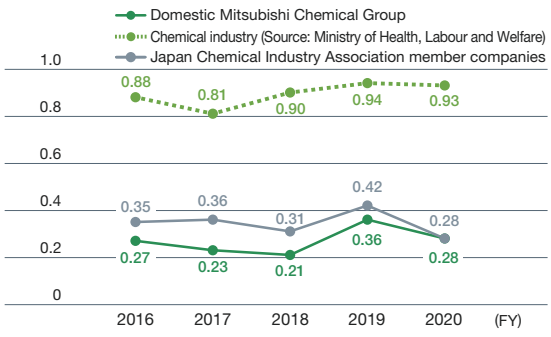
Mitsubishi Chemical Group Process Safety Incidents in Japan



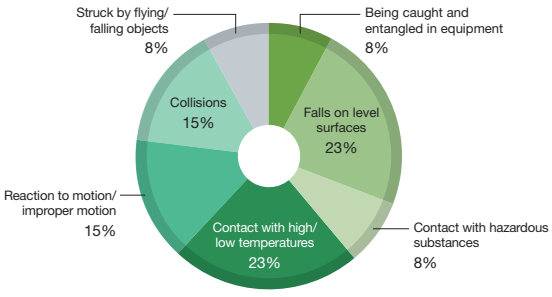
Mitsubishi Chemical Group Occupational Accidents in Japan



Annual Rate of Lost-Time Accidents



Mitsubishi Chemical Group Lost-Time Accidents by Classification (FY2020)



* Data for fiscal 2016 are the totals of the figures for the previous Mitsubishi Chemical, Mitsubishi Plastics and Mitsubishi Rayon and their respective domestic group companies. The same applies hereinafter.

** The figure for chlorofluorocarbon gas leak incidents represents leaks from refrigeration equipment with a capacity of 20 refrigeration tons or greater.

In light of the problems underlying these process safety incidents and occupational accidents, in fiscal 2021, we are implementing the following key measures.

- Thoroughness and Continuation of Safety Activities
  In addition to efforts to thoroughly ensure safe basic practices and operations, we are reviewing and working to ensure adherence to proper procedures and safety equipment use in construction and other operations, steadily implementing change management and risk assessment, thoroughly responding to incidents and occupational accidents, and effectively utilizing information to prevent the recurrence of incidents and occupational accidents as well as the occurrence of similar incidents and accidents.

  To minimize and contain harm in the event of an accident or natural disaster, such as an earthquake, we have in place systems for rapid response within plants and the prevention of negative impacts on the areas around our sites and conduct drills accordingly.

- Thoroughness and Continuation of Facility Management
  To prevent incidents and occupational accidents, we properly inspect facilities for age-related deterioration and repair and replace them as needed while steadily performing regular monitoring to ensure that signs of irregularities in facilities are quickly detected and dealt with appropriately.

- Human Resources Training
  We strive to train people who prioritize safety at all times and who can think for themselves, have good judgment and take action. Furthermore, to enhance risk assessments, we are proactively developing human resources with specialized risk assessment knowledge and skills.

- Enhancing Safety Culture
  We have launched initiatives aimed at realizing organizations in which employees mutually enhance one another's awareness regarding safety, such as the MCC Group Basic Safety Behaviors, in which all employees remind each other to practice safe behaviors. In addition, to comprehensively understand the safety culture and particular characteristics of specific workplaces, we have begun implementing safety culture surveys of all employees at specific workplaces and analyzing the results with the help of third-party experts.

Focus — Promoting the Consistent Practice of the MCC Group Basic Safety Behaviors

MCC is working to raise awareness to ensure that all employees consistently practice the MCC Group Basic Safety Behaviors. To foster knowledge and awareness of the basic safety behaviors, we provided posters to our sites in and outside Japan and distributed tote bags and hand towels printed with illustrations of the basic safety behaviors at domestic sites.

We also held a lecture on preventing falls to deepen employees' understanding of the importance of using handrails, the dangers of walking while distracted and occupational accident prevention. A video of the lecture was used in e-learning, helping to firmly root the basic safety behaviors.

Hand towel and tote bag

MCC Group Basic Safety Behaviors poster

Risk Assessment

MCC implements robust risk assessments of processes, operations and chemicals, striving to prevent process safety incidents and occupational accidents. In these risk assessments, we comprehensively identify, evaluate and work to reduce risks related to process safety, occupational accidents and health. This includes risks not only under steady conditions, but also unsteady conditions, such as when responding to a problem. Furthermore, to effectively reduce risks related to changes, we use mechanisms for identifying all changes and conduct risk assessments under the supervision of expert technicians.

Process Safety and Disaster Prevention, Occupational Safety and Health

Enhancing Self-Directed Process Safety

MCC's Ibaraki, Mie, Okayama and Hiroshima plants are accredited as having high-level process safety under the High Pressure Gas Safety Act. These plants maintain a high level of process safety by creating mechanisms in line with the requirements for accreditation under the High Pressure Gas Safety Act, such as 1. Process safety management and inspection frameworks, 2. Continuous improvement of process safety systems via PDCA cycles, 3. Risk assessments and 4. Education and training.

In addition, we are proactively working to advance smart process safety, aiming to leverage the latest digital transformation (DX) technologies to further enhance process safety management and make more precise judgements based on collected data. By doing so, we seek to address social issues and changes in the environment, including dramatic advances in technology, such as IoT, big data (BD), AI and drones; increasingly serious and frequent disasters; the risk of major earthquakes; the aging of plant facilities; and decreasing numbers of process safety personnel.

Focus — Mie Plant Receives Outstanding Award in the JCIA's RC Awards

MCC's Mie Plant implements joint patrols involving facility management departments and operational management departments to address the desire of employees to learn about specialized maintenance and apply that perspective in patrols. This helps to more quickly detect signs of irregularities. In addition, to share expertise and provide reinforcement for weaknesses caused by differences in levels of experience with specific facilities, we are implementing departmental patrols in which employees make explicit and share their know-how, including key points to inspect during patrols and methods for checking places where changes have occurred. For these activities, the Mie Plant received the Outstanding Award in the Fiscal 2020 Responsible Care (RC) Awards of the Japan Chemical Industry Association (JCIA). This award is bestowed in recognition of process safety management enhancement activities (in the areas of infrastructure development, facility stabilization and human resource development) that serve as a model for other organizations.

Departmental patrol

Outstanding Award from the JCIA

Working Environment Management

Some employees within the MCC Group perform work that requires occupational health considerations, such as the handling of specified chemical substances and organic solvents and operations performed in hot or noisy conditions. To prevent health problems in these employees, the MCC Group manages working environments based on ongoing working environment measurement performed in accordance with relevant laws and guidelines and its own rules. In addition, MCC carries out a range of occupational health measures, such as implementing specialized health checkups, workplace inspections by industrial physicians and initiatives to reduce risks identified by chemical substance risk assessments.

Human Resource Development Initiatives

MCC implements human resource development using educational plans tailored to specific types of work and levels of seniority.

We carry out education and drills for employees who conduct operations at manufacturing sites to ensure that they can correctly carry out basic practices and operations and follow rules about prohibited behaviors. We also use creative techniques to help employees apply the knowledge gained through education at actual work sites. Furthermore, we carry out experiential education using facilities that provide simulated experiences of process safety incidents and occupational accidents to increase employees' sensitivity to danger.

For technical staff, we also provide chemical engineering education and carry out such initiatives as mandatory participation in safety assessments of processes at their respective work sites. Through such efforts, we are developing chemical process safety engineers with specialized knowledge of chemical substances and reactions and risk assessment methods.

Focus — Training Using VR Technology

MCC's manufacturing sites are introducing a training and drill system that utilizes virtual reality (VR). This system allows employees to virtually experience accidents, such as falls and being caught or entangled in equipment, to heighten their sensitivity to danger and help prevent occupational injuries. The system can be used to practice on-site work (such as opening and shutting valves) as well as to drill employees in basic operations, such as the handling of tools and correct work posture and position. We expect it to be very useful for developing plant operators.

MCC's Okayama Plant operates a VR danger simulation training system.

We have been using the VR system since fiscal 2020 to recreate dangerous circumstances and provide simulated experiences that are difficult to achieve using conventional practical safety training equipment.

In fiscal 2021, we plan to add seven new lessons to system, bringing the total to 12. By having employees experience simulations with the system, we are striving to further enhance their sensitivity to danger.

Lesson selection menu


Simulated experience of fall danger


An employee during training

At MCC's Mie Plant, to enhance employee training, we have created and operate a VR training program for implementing an emergency response to a stop the plant's raw material feed. The program uses video from the actual site and helps employees learn how to implement emergency measures, such as opening and closing valves.

Employees who have undergone the training have responded positively, noting that it allows them to train by themselves whenever they have time, clearly indicates which actions are correct and incorrect, making it easier to learn, and allows them to undergo training appropriate to their knowledge level. We thus expect that the system will help save time and accelerate employee training.


VR training using video of the plant

Process Safety and Disaster Prevention, Occupational Safety and Health

Accident and Natural Disaster Response

MCC has in place a range of countermeasures to minimize and contain harm due to accidents and natural disasters. We evaluate potential external effects, including impact on surrounding areas, and establish response procedures to be implemented in the event of a disaster. We also conduct training based on scenarios in which accidents occur simultaneously at multiple facilities or plants due to large-scale natural disasters or other factors. Through such efforts, we maintain an emergency response system.

Earthquake-Resistant High-Pressure Gas Equipment

MCC uses earthquake resistance design standards to evaluate the earthquake resistance of such facilities as spherical storage tanks with welded steel pipe braces and high-pressure gas facilities designated as vital in terms of earthquake-resistant design. Based on such evaluation, MCC draws up plans to improve facilities where necessary and advances earthquake countermeasures in line with said plans.

(1) Spherical storage tanks with welded steel pipe braces
In fiscal 2020, we completed earthquake countermeasures for the nine tanks found to require them.

(2) High-pressure gas facilities designated as vital in terms of earthquake-resistant design
In fiscal 2020, we completed earthquake countermeasures for the 28 facilities found to require them.

Environmental Conservation

Basic Policy and Key Measures

Aiming to contribute to the global environment, Mitsubishi Chemical (MCC) proactively works to reduce its greenhouse gas emissions, conserve resources and energy, prevent contamination of the air, water and soil, limit waste generation, encourage reuse and recycling, engage in activities and develop technologies that help conserve the natural environment, and develop and produce environmentally friendly products. In these ways, MCC strives to reduce its environmental burden at every level of its business activities.

In addition, to ensure legal compliance, we carry out training on environmental laws and regulations, conduct environmental audits and hold twice annual liaison meetings at which MCC Group managers in charge of environmental issues exchange the latest information about legal amendments and other issues.

In fiscal 2020, we set the annual targets of zero environmental incidents and contributing to the global environment and implemented the following key measures.

- Reducing Environmental Risk
  We are implementing legal education and environmental audits to ensure compliance with environmental laws and regulations while systematically reducing environmental risk by implementing risk assessments.
- Reducing Environmental Impact
  We are working to reduce our environmental impact through such means as cutting greenhouse gas emissions, saving resources and energy, and reducing emissions of pollutants.
- Coexisting Harmoniously with Local Communities
  We are letting local communities know about our environmental conservation initiatives and promoting harmonious coexistence through communication.

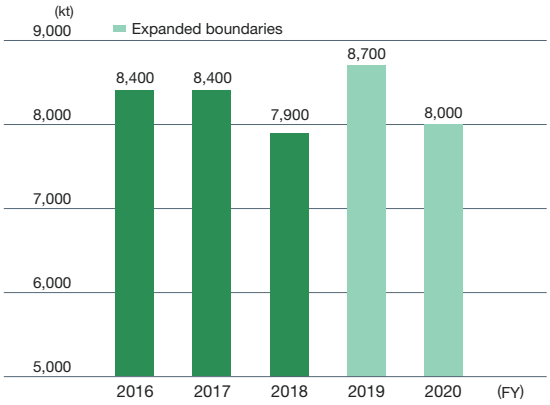
Environmental Conservation

Addressing Climate Change

In line with the target set by Mitsubishi Chemical Holdings (MCHC) of reducing greenhouse gas emissions at least 17% compared with fiscal 2005 levels by fiscal 2015, MCC worked to cut its greenhouse gas emissions and achieved the fiscal 2015 target. We have maintained emissions at this lower level since fiscal 2016.

Going forward, we will advance initiatives to further reduce greenhouse gas emissions in line with the MCC Group medium-term management plan, which includes initiatives aimed at helping achieve the Japanese government's emissions reduction targets for 2030.

Greenhouse Gas Emissions



* Data for fiscal 2016 are the totals of the figures for the previous Mitsubishi Chemical, Mitsubishi Plastics, Mitsubishi Rayon, and their respective domestic group companies.
** GHG emissions have been calculated based on the GHG Protocol.
*** Figures for fiscal 2019 and after have been revised in line with the expansion of the boundaries of MCHC's medium- to long-term basic management strategy, KAITEKI Vision 30.

Focus — Reducing GHG Emissions Using Biomass Fuel at the Hiroshima Plant

The on-site power generation facilities of MCC's Hiroshima Plant use coal-fired boilers to produce and supply electricity and steam. These boilers previously represented approximately 90% of the plant's CO_2 emissions. To reduce this significant environment burden, since 2008, we have been studying the use of fuels that help reduce CO_2 emissions. Through the full-scale use of co-firing with biomass fuel, including wood scraps, in fiscal 2019 we achieved an annual CO_2 reduction effect of 4,700 tons. Going forward, we aim to further increase the co-firing rate and thereby enhance the CO_2 reduction effect.

Balancing CO_2 emission reduction with fuel cost, we will continue to work as one to realize KAITEKI using environmentally friendly technologies.

Biomass boiler at the Hiroshima Plant

Life Cycle Assessment

Life cycle assessment is an approach that enables the quantitative evaluation of the environmental burden generated by a product or service over its entire life cycle (from resource collection through raw material production, product manufacturing, distribution, consumption, disposal and recycling) or at specific stages of said life cycle. The evaluation of the environmental impact of MCC's products and services over their entire life cycles better enables the company to develop environmentally friendly products and services and provide them to society.

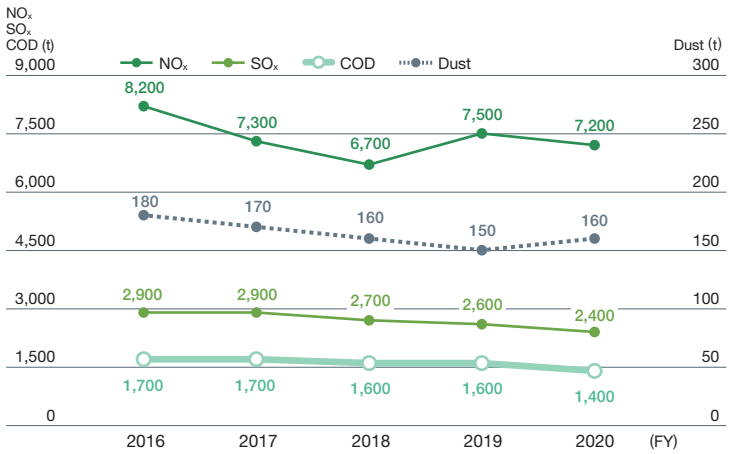
Preventing Air, Water and Soil Pollution

MCC handles a wide range of chemical substances and therefore maintains ongoing measures to reduce emissions of hazardous air pollutants and of pollutants into public bodies of water through such means as installing and improving emission gas and wastewater treatment facilities.

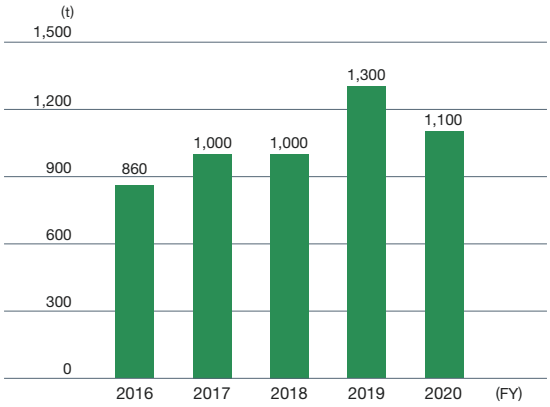
We have been reducing or maintaining at a steady level the environmental burden our businesses place on atmospheric and water quality, as measured by NO_X, SO_X and dust emissions as well as chemical oxygen demand (COD). MCC's emissions of PRTR-regulated substances[1] and VOCs[2] have also been declining.

1 Pollutant Release and Transfer Register (PRTR): A system for filing notifications of the amounts of chemical substances released and transferred. This system enables the identification, aggregation and publishing of data on the types, sources and amounts of hazardous chemical substances that have been released into the environment or transferred outside facilities as waste.
2 Volatile organic compound (VOC): Typical substances include toluene and xylene. These compounds became subject to regulation by the amended Air Pollution Control Act of 2006 as source substances of photochemical oxidants (photochemical smog).

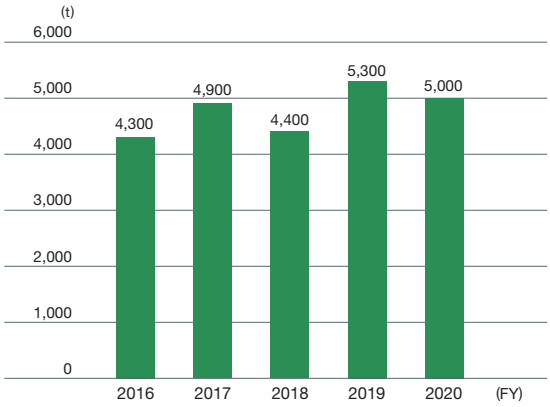
Reducing Our Environmental Burden on the Atmosphere and Public Water Sources



PRTR-Regulated Substance Emissions



VOC Emissions



* Figures for fiscal 2019 and after have been revised in line with the expansion of the boundaries of MCHC's medium- to long-term basic management strategy, KAITEKI Vision 30.

Environmental Conservation

Focus — Environmental Conservation Initiatives at the Shiga Plant

MCC's Shiga Plant uses a great volume of plastic pellets as raw materials. The plant takes steps to prevent these pellets from spilling into public waterways, such as setting up pellet-catching nets in rainwater drainage channels.

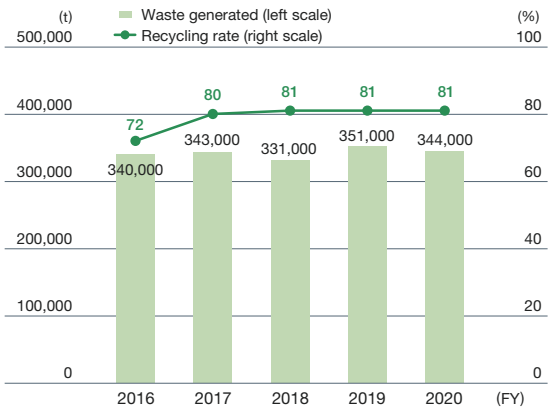
In addition, every year, the Shiga Plant takes part in a day of mass-cleanup activities around Lake Biwa and Lake Yogo coordinated by Nagahama City and a Nagahama beautification group, working to conserve the environment in the local area. We will continue to implement initiatives to protect the environment and the area's natural beauty.

Mass cleanup activities at Lake Biwa and Lake Yogo

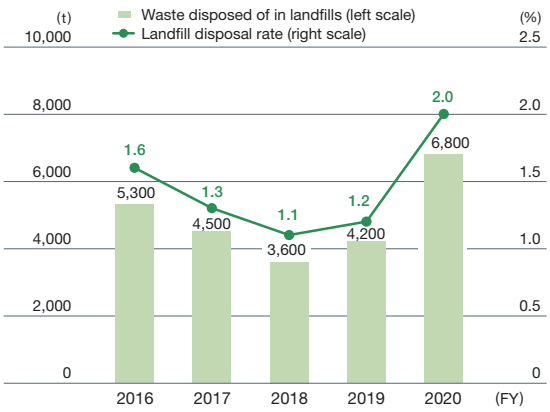
Waste Reduction and Recycling

MCC is advancing 3R activities (reduce, reuse, recycle) in an effort to reduce its waste. The waste recycling rate has been increasing, and the amount of waste disposed of in landfills has been decreasing, but in fiscal 2020, plant demolition generated one-off waste that resulted in an increase in waste disposed of in landfills. Going forward, we will continue working to improve our waste recycling rate by strictly enforcing sorted collection and strengthening coordination with disposal contractors.

Waste Generated and Recycling Rate



Waste Disposed of in Landfills and Landfill Disposal Rate



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Biodiversity Conservation

Based on the Mitsubishi Chemical Holdings Group Biodiversity Preservation Policy, MCC pursues initiatives that contribute to the global environment and thus conserve biodiversity. Through these initiatives, we work to reduce environmental risk and impact and thereby lessen our business activities' impact on biodiversity. In addition, we strive to conserve the natural environment by cleaning up neighboring areas and coastal areas and protecting our plants' green areas.

Environmental Accounting

MCC uses environmental accounting, based on the Ministry of the Environment's guidelines, to better understand the costs and effects of its environmental burden reduction and conservation efforts.

In fiscal 2020, MCC invested ¥2.2 billion in such areas as reinforcing wastewater management and air pollution prevention and incurred ¥35.1 billion in expenses, including those for the operation and maintenance of pollution prevention equipment and proper waste disposal. Meanwhile, such positive factors as revenue from the sale of valuable materials and savings from energy use and lower waste disposal costs totaled ¥1.2 billion.

Investment and Expenses Related to Environmental Conservation and Process Safety

Environmental conservation costs (Millions of yen)

Category		Main initiatives	FY2020	
			Investment	Expenses
Costs within business areas	Pollution prevention costs	Air pollution prevention, dust countermeasure reinforcement, dust collection system replacement, water pollution prevention, activated sludge consolidation, wastewater management reinforcement, response to deterioration of wastewater facilities and pipes, etc.	1,639	15,642
	Global environmental conservation costs	CO_2 emissions reduction, operational improvement, etc.	313	902
	Resource-recycling costs	Industrial waste reduction, proper waste disposal, resource conservation, energy conservation, etc.	241	7,851
Upstream/downstream costs		Waste reclamation, green purchasing, etc.	0	0
Environmental conservation costs in management activities		Operation of units to address environmental conservation, ISO 14001 compliance and renewal, national exams, environmental education, etc.	0	2,123
Environmental conservation costs in R&D activities		R&D for increased productivity	0	7,418
Environmental conservation costs in social contribution activities		Construction and upkeep of factory green spaces	17	489
Costs of dealing with environmental damage		Cleanup of contaminated soil, etc.	2	72
Other environmental conservation-related costs			0	570
		Total	**2,212**	**35,067**

Positive economic effects (Millions of yen)

	FY2020
Income from recycling	698
Energy cost savings	277
Income from resource conservation	193
Total	**1,168**

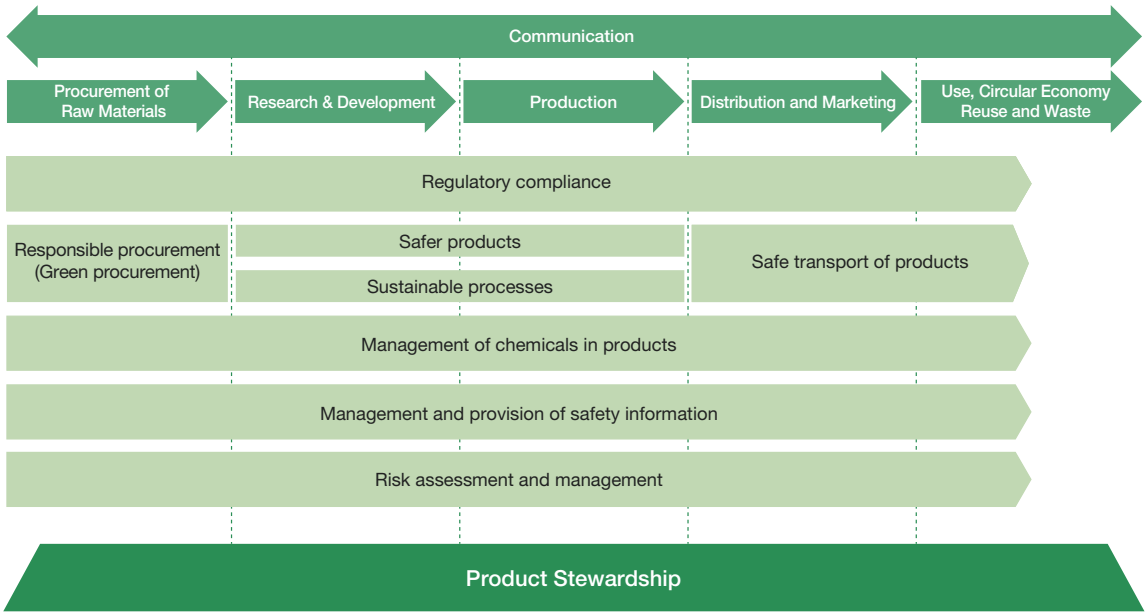
Product Stewardship

Basic Policy

It is the responsibility of Mitsubishi Chemical (MCC) to cooperate with stakeholders to protect the environment and the health and safety of people at every stage of its products' life cycles (encompassing the procurement of raw materials, research & development, production, distribution and marketing, and use, circular economy reuse and waste).

In line with its mission of realizing KAITEKI and as part of its responsible care activities, MCC strives to implement product stewardship initiatives, which are part of the foundation of responsible care, through safety management at every stage of its products' life cycles. In addition, we proactively provide information about product risks to stakeholders and engage in dialogue to ensure proper management. Through such efforts, we work to ensure appropriate end use of our products from the perspectives of quality assurance and security export control.

Mitsubishi Chemical's Product Stewardship Initiatives



- Communication
  Communicate with stakeholders, both internal and external, including customers, regulators and the public, about the safe and secure use and potential hazards of the products we manufacture and any associated risks to ensure that our products are handled appropriately at each stage of their life cycles.

- Procurement of Raw Materials
  Set high expectations for the health, safety, security and environmental performance and social responsibility of suppliers and obtain information related to the safety of procured raw materials from business partners.

- Product Development
  Develop products that have no risk or minimize the risk of adverse health, safety and environmental impacts throughout their entire life cycles and deliver added value, and retain development information for security.

- Production
  Protect the health and safety of our employees and the local community by improving production processes and promoting a corporate culture that places the highest priority on human health and safety, and minimize our environmental footprint by avoiding chemical pollution, reducing energy consumption, supporting recycling and ensuring proper disposal of waste from the products we manufacture, and keep production information for security.

- Distribution and Marketing
  Provide accurate and detailed information related to product safety and handling to business partners involved in the storage, transport, distribution, marketing and use of our products; and implement appropriate responses, including the provision of additional support to improve product handling practices, as needed.

- Use, Circular Economy Reuse and Waste
  Work with our business partners to provide relevant information to ensure safe and secure use and to support the recycling, reuse and proper disposal of our products.

These initiatives are in line with the Strategic Approach to International Chemicals Management (SAICM).[1] Along with process safety and disaster prevention, occupational safety and health, environmental conservation, chemical and product safety, and logistics safety, these initiatives are aimed at realizing KAITEKI through risk-based chemicals management across product life cycles.

1 Strategic Approach to International Chemicals Management (SAICM): A strategic approach to international chemicals management adopted by the International Conference on Chemicals Management (ICCM) and approved by the United Nations Environment Programme (UNEP) in 2006.

Security Export Control

Basic Policy

At present, ongoing efforts are being made via international initiatives, mainly through the United Nations, to reduce the threat of weapons of mass destruction. At the same time, however, tensions between the United States and China and other countries and regions are intensifying in the name of ensuring national economic security, and the international security environment is changing rapidly.

Japan is working toward a rules-based international order and to that end has been leading the formulation and use of multilateral agreements, such as the EU-Japan Economic Partnership Agreement (EU-Japan EPA).

Mitsubishi Chemical (MCC) believes that security-related risk management and the effective use of economic partnership agreements are important to realizing sustainability. To that end, MCC particularly strives to ensure effective security export control based on the appropriate application of not only Japan's Foreign Exchange and Foreign Trade Law, but also export-related U.S. laws and the similar laws of many other countries, in addition to its own Security Export Control Policy.

Policy of Security Export Control for the MCC Group

(1) We do not engage in concerns that threaten the maintenance of international peace and security.
(2) We comply with export control laws applicable to countries and regions where we conduct business.
(3) We appoint a person who is responsible for export control and improve and enrich the export control system.
(4) We comply with U.S. law when trading, including re-exporting, products or technology originating in the United States.

Security Export Control System

MCC has established a tiered export control system based on its Security Export Control Rules. The chief executive of this system is MCC's president. Through this system, we work to prevent legal violations and avoid reputation risk using such means as thorough export screening, notifications about legal changes, raising internal awareness about security export control and internal audits of exporting departments. In 2020, we began to build a network in each region to reinforce the export control functions of our regional headquarters. In addition, we decided to apply this system to effectively utilize existing frameworks in the determination of product origin as required under economic partnership agreements.

Export Control Mechanisms

MCC implements three screening steps: Item classification using the export screening system, customer screening and transaction verification. Recent years have seen numerous restrictions placed on foreign companies, such as sanctions imposed by the United States, and we monitor and appropriately respond to such rules.

We also apply this system to meet the requirements of trading under economic partnership agreements.

Training and Education

MCC provides both regular and as-needed internal education to ensure thorough compliance with laws, regulations and internal rules in the areas of export control and economic partnership agreements. In fiscal 2020, we held 49 explanatory meetings targeting business domains, corporate function domains, plants, our R&D center, and branches. These meetings were held mainly online to prevent the spread of COVID-19. A total of 10,979 employees also took part in security export control training via e-learning. Going forward, we will continue to carry out training and education that covers the basics of legal compliance while finding new ways to increase the effectiveness of our programs, such as by introducing content important to the real-life practice of compliance and new educational tools as needed. In addition, we will gather the necessary information from governments and other actors regarding economic security (a topic of growing importance) and the establishment and amendment of laws in other countries and share it with employees in a timely manner while working to implement appropriate responses in coordination with related departments.

Effects

As a result of such initiatives, in fiscal 2020, MCC recorded no legal or regulatory violations related to security export control and achieved importer-side tariff savings of approximately ¥500 million on direct exports through the use of economic partnership agreements.

Going forward, we will continue to contribute to the realization of KAITEKI through these activities.

Chemicals Management

Management System and Rules

Mitsubishi Chemical (MCC) maintains a system, including internal rules and systematic checks, that ensures the rigorous product stewardship-based management of chemicals in all its business domains.

To effectively utilize the favorable properties of its chemical raw materials, MCC seeks out, aggregates and shares within the company information on all substances related to its products, including that on chemical hazards, applicable domestic and international regulations, and the results of risk assessments. In addition, we have built a support structure to better enable the business domains to implement proper chemicals management.

Because chemical regulations vary by country and region, MCC has appointed persons responsible for overseeing product stewardship at the regional headquarters to reinforce the global management system.

We have laid out the essentials of chemicals management in our Chemicals Management Regulations, Standards for the Safe Management of Chemicals and Standards for Product Safety Management. Furthermore, we have formulated guidelines and manuals that provide concrete methods for working within regulations, authoring and issuing SDSs[1] and implementing voluntary chemicals management. These efforts help ensure proper management.

1 Safety data sheet (SDS): A document for providing information on the properties, hazards and toxicity, safety measures and emergency responses concerning chemical substances when transferring or providing chemicals to other business entities.

Compliance with Chemicals Management Regulations

Japanese Laws and Regulations

MCC complies with wide-ranging laws concerning chemicals, including the Chemical Substances Control Law (CSCL), the Industrial Safety and Health Act's requirements concerning filing new chemical substance notifications, and the Poisonous and Deleterious Substances Control Law's requirements concerning the registration and management of manufacturing, importing and sale businesses as well as record maintenance. To ensure that such compliance is thorough and comprehensive, MCC has established internal rules and guidelines related to compliance with domestic laws and carries out centralized management using a database of notifications filed. In fiscal 2020, we overhauled our guidelines for annual reports on handling amounts and other data required under the CSCL and implemented training for the entire company, including manufacturing and import departments, to promote continued efficient and sure management.

Overseas Laws and Regulations

In the run-up to 2020, the target deadline for achieving the overall goal of the SAICM,[2] countries around the world (including China, South Korea, Taiwan, the United States and Turkey) enacted and amended legal regulations on chemicals. In the European Union, as part of the European Green Deal, the European Commission announced the Chemicals Strategy for Sustainability: towards a toxic-free environment in October 2020, taking a major step forward to promote innovation aimed at the use of safe and sustainable chemical substances. To respond to such changes, we are working with the regional headquarters and overseas Group companies to collect the latest information on legal requirements in each region or location and develop a system to ensure a more accurate response to regulations. In fiscal 2020, we focused efforts on the management of self-registration under EU REACH[3] and UK REACH as well as on commenting on the systems to the regulatory authorities; pre-registration under Turkey's KKDIK (a law similar to REACH); responding to the promulgation of China's amended Measures for the Environmental Management Registration of New Chemical Substances; and responding to Vietnam's chemical inventory supplementation notification system.

2 Strategic Approach to International Chemicals Management (SAICM): A strategic approach to international chemicals management adopted by the International Conference on Chemicals Management (ICCM) and approved by the United Nations Environment Programme (UNEP) in 2006.
3 Registration, Evaluation, Authorization and Restriction of Chemicals (REACH): EU regulations regarding the registration, evaluation, approval and restriction of chemical substances.

Voluntary Chemicals Management Initiatives

Participation in Chemical Industry Activities

MCC takes part in the international activities of the Chemicals Policy & Health Leadership Group of the International Council of Chemical Associations (ICCA) and cooperates in promoting product stewardship in the chemical industry. In recent years, MCC has also actively participated in initiatives to address the global issue of microplastics.

Furthermore, looking toward new developments in chemicals management beyond the 2020 goal of SAICM and building on the SDG[4] vision established by the Japan Chemical Industry Association (JCIA), MCC aims to go beyond solving environmental and social issues as a chemicals manufacturer to contribute to the sustainable development of society and the planet, in line with its vision of realizing KAITEKI.

Mitsubishi Chemical's Voluntary Initiatives

To prevent the theft and/or abuse of chemicals, MCC has established its own list of MCC-specified chemicals, which includes voluntarily designated substances in addition to legally designated or restricted substances. We have established safety management guidelines for managing these substances at plants and laboratories, during logistics operations and during transfer to customers. In this way, we are working to reinforce the management of such substances.

4 Sustainable Development Goals (SDGs): A set of development goals aimed at realizing a sustainable world by 2030 that were adopted at the UN Sustainable Development Summit in September 2015.

Providing Reliable Chemical Substance and Product Information (SDSs, etc.)

MCC has adopted and begun the operation of comprehensive chemicals management systems (for example, SAP-EHS) to support its expert staff in the proper provision of information to customers throughout supply chains in and outside Japan as well as management based on the most up-to-date information related to chemicals management.

The systems comprise databases of the chemical substances and components of products handled by MCC, their hazardous properties, relevant domestic and international laws and regulations, and other information. The systems are capable of performing the GHS[5] classification of chemical substances, determining the applicability of laws and regulations, and producing SDSs and labels in line with the laws and standards of a wide range of countries and regions, including Japan, Europe, the United States, and East Asian and ASEAN countries, for review by expert staff. The system uses highly reliable data that is carefully reviewed by experts at Mitsubishi Chemical Research, an MCC Group company, to generate GHS classifications. Furthermore, we are implementing proactive product management using a function of the system that enables users to search chemical substances and products in the MCC database that may be subject to anticipated legal or regulatory amendments.

5 Globally Harmonized System of Classification and Labelling of Chemicals (GHS): A system for classifying chemicals by the type and degree of their hazardous properties based on globally harmonized rules and communicating this information using labeling and the provision of SDSs.

Chemicals Management

In-House Chemicals Management Training

In addition to basic chemicals management education, MCC hosts the Chemicals Management Seminar ("PS Seminar") on a monthly basis at MCC Group headquarters. This seminar serves to teach Group company employees about increasingly stringent regulations in and outside Japan and how to address them. In fiscal 2020, we held special lectures on the theme of chemicals management, safety and security for management. A total of 1,527 employees participated via an online meeting system.

We conducted e-learning about the Poisonous and Deleterious Substances Control Law to prevent compliance violations due to inadequate understanding of the law, in which a total of 1,435 employees participated.

We also provided education for the entire company, including plants and the R&D center, on the basics of the CSCL and Industrial Safety and Health Act and held liaison meetings on specific topics, such as food packaging material regulations and chemical product regulations in certain countries. Further, we provided basic training on relevant laws on 11 occasions at plants, our R&D center and Group companies, providing detailed, concrete guidance on working within laws.

In-house chemicals management training

Quality Assurance

Basic Policy

The Mitsubishi Chemical (MCC) Group believes that implementing thorough quality control (QC) is important to ensuring product safety and continuously improving quality so that MCC Group customers can use MCC Group products safely and with confidence.

As an integrated chemical company that provides a wide array of products and services to customers in a broad range of industries, it is MCC's duty to prevent quality and product liability issues while working to further increase customer satisfaction by offering safe, reliable products and services. We strive to fulfill this duty in line with the following basic policy.

- In order to realize KAITEKI for customers, we provide products and services that customers can use with confidence.
- We listen carefully to each customer's requests and respond rapidly and sincerely.
- In accordance with the basis of our responsible care activities, we strive to achieve continuous improvement in quality.

Quality Assurance Initiatives

The MCC Group established new rules and policies at the time of the merger that formed the new MCC in April 2017 and has since been working to ensure awareness of the basic policy throughout the company. We are building appropriate quality management systems (based on ISO 9001,[1] GMP,[2] etc.) at our manufacturing sites and working to strengthen our quality assurance framework. Furthermore, we hold regular quality assurance meetings to share and effectively utilize information about quality within the Group as part of continuous efforts to improve quality. At the same time, we are focusing on quality assurance training. In fiscal 2019, we held lectures with outside instructors for executives (a total of 200 participants), working to increase awareness of quality and translate this awareness into practice. In fiscal 2020, to prevent the spread of COVID-19, lectures were conducted online, with a total of 700 participants taking part in a lecture for executives in October and a lecture for managers in November.

1 ISO 9001: An international standard for quality management published by the International Organization for Standardization.
2 Good Manufacturing Practice (GMP): Quality management standards for the production management of pharmaceuticals and related products.

Product Information Disclosure

Around the world, corporations are facing growing demand to exercise the proper management of chemical substances in products throughout entire product life cycles as well as to disclose information on such chemical substances. To accurately respond to these demands, MCC has established management standards for chemical substances in products and continues to contribute to the smooth operation of chemSHERPA[3] through the Joint Article Management Promotion-consortium (JAMP).[4] Furthermore, with regard to conflict minerals,[5] which present possible human rights issues, we have established a policy and strive to meet customer requests.

MCC is working with its business partners and customers to contribute to the creation of a social system capable of managing chemicals throughout the supply chain.

3 chemSHERPA: A new private-public information communication scheme aimed at standardizing communications about the chemicals included in products.
4 JAMP: A cross-industry organization that works to promote the appropriate management, disclosure and communication of information on chemicals contained in "articles" (parts and final products) throughout the supply chain.
5 Conflict minerals: Tantalum (Ta), tin (Sn), gold (Au), tungsten (W), cobalt (Co) extracted in the Democratic Republic of the Congo and neighboring countries that are used to fund armed groups.

Handling Product Complaints

Information about complaints related to products is compiled in a quality complaint database so that it can be effectively utilized. Business domains take the main role in quickly responding to customers as needed, striving to enhance customer satisfaction. Significant complaints are aggregated at the company-wide level and analyzed to prevent recurrences.

Logistics

Basic Policy

Mitsubishi Chemical (MCC) strives to put safety first and promote strict compliance, risk management, respect for human rights and communication with business partners in order to realize KAITEKI. Based on a product stewardship approach, we are promoting KAITEKI logistics to earn the trust of customers and society in logistics operations.

Hazardous Materials Transport Initiatives and System to Prevent External Harm in Case of an Accident

MCC focuses considerable effort on ensuring the safe transport of hazardous materials.

Related MCC departments and logistics subsidiaries regularly hold meetings on responsible care and risk management, maintaining close communication and implementing measures aimed at reducing problems, accidents and occupational injuries.

We work with logistics subsidiaries to ensure that all shipments are accompanied by yellow cards[1] and educate our business partners about the chemical properties of our products and safety. In these ways, we work to enhance understanding of the products being transported and sensitivity to safety.

In addition to initiatives aimed at preventing accidents, we also conduct regular disaster drills with logistics subsidiaries and are taking steps to address the risk of a serious road accident through a contract and drills with the Maritime Disaster Prevention Center. Furthermore, for products that present particularly high risk if stolen or lost, we have established our own management standards that we use in the transportation and storage of such products.

1 Yellow card: A document that contains emergency safety procedures to be taken in the event of a transportation accident and contact information for MCC.

Participation in the Sustainable Logistics Movement

Japan's Ministry of Land, Infrastructure, Transport and Tourism, Ministry of Economy, Trade and Industry and Ministry of Agriculture, Forestry and Fisheries are calling on listed companies and key companies in each prefecture of Japan to participate in the Sustainable Logistics Movement.[2]

As this movement aligns well with MCC's existing KAITEKI logistics initiatives, the company is participating by expanding initiatives aimed at achieving sustainable logistics based on the following eight-point voluntary declaration of conduct.

- We will work with logistics subsidiaries to improve the efficiency and stability of logistics on an ongoing basis and sincerely discuss any suggested improvements or questions from logistics operators.
- We will implement lorry and truck reservation systems to reduce waiting times.
- We will promote the use of palettes to reduce cargo handling that truck drivers perform by hand.
- We will consolidate product storage spread across warehouses near plants to improve shipment collection efficiency.
- We will formulate transport plans in advance to ease shipping rushes around long holiday periods, such as Golden Week and New Year's.
- We will promote modal shifts of long-distance truck transport to railways and ships to improve logistics stability and per-unit energy consumption.
- We will prioritize compliance with relevant laws when selecting and hiring logistics operators.
- We will clearly indicate safe work procedures, take steps to secure safe routes and, as needed, form security transport agreements to prevent occupational injuries and accidents.

2 Sustainable Logistics Movement: An initiative aimed at creating more worker-friendly working conditions in response to the increasingly serious shortage of truck drivers in Japan. Specifically, the movement aims to stably secure the necessary logistics operations for the livelihood of Japan's people and its industrial activity and thereby contribute to stable economic growth by improving trucking productivity and logistics efficiency and creating more worker-friendly working conditions, including those for women and drivers over the age of 60.

Focus

Received Maximum Five-Star Coastal Ship Energy Conservation Rating

MCC Group company Mitsubishi Chemical Logistics Corporation (MCLC) has a long-term charter contract for the vessel *RYOREI MARU No.1*, a carrier for liquefied ammonia, one of MCC's products. The ship's owner EIKO KAIUN CORP., design firm Kegoya Dock Co., Ltd., and user MCLC worked together to develop a unique hull for the ship, which entered service in 2020. As a result of this work, the ship realizes a 34% reduction in fuel consumption when in operation compared with the standard values for vessels of the same type.

In recognition of the improved performance, in March 2021 the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism granted the vessel the maximum five-star ranking under the energy conservation rating system for coastal vessels.

In addition, during the vessel's development, the developers sought to improve the onboard work environment, which has recently come to light as a problem on many coastal chemical carriers. Along with improving the vessel's energy efficiency, the living space was also expanded, creating a more comfortable workplace for the crew.

Company Data (Environment and Safety)

Mitsubishi Chemical Group Companies Promoting Responsible Care Activities

As of March 2021

Carbon Chemicals Business Domain

Japan Polychem

Japan Polypropylene

Japan Polyethylene

Mitsubishi Chemical Indonesia

Carbon Business Domain

Kansai Coke and Chemicals

MMA Business Domain

Mitsubishi Chemical Lucite Group

Huizhou MMA

Thai MMA

Mitsubishi Chemical Polymer Nantong

Suzhou MRC Opto-Device

Diapolyacrylate

Advanced Polymers Business Domain

Mitsubishi Chemical Performance Polymers Europe

Mitsubishi Chemical Performance Polymers Thailand

MCPP India

Mitsubishi Chemical Performance Polymers

MCPP Compounds Indonesia

Mitsubishi Chemical Performance Polymers (China)

Mitsubishi Chemical Performance Polymers (Chengdu)

RHOMBIC

High Performance Chemicals Business Domain

Diachem Resins Indonesia

Toei Kasei

Dianal America

Japan Coating Resin

ARKEMA Yoshitomi

Mitsubishi-Chemical Foods

Information, Electronics and Display Business Domain

MC PET Film Indonesia

Mitsubishi Polyester Film Suzhou

Mitsubishi Chemical Converting Film Wuxi

Mitsubishi Chemical Taiwan

Mitsubishi Chemical Infonics

Cleanpart

Shinryo

Taisei Kayaku

Kansai Kagaku Kogyo

Qualicaps

High Performance Films Business Domain

J-Film

DiaPlus Film

Mitsubishi Polyester Film (U.S.A.)

Mitsubishi Polyester Film (Germany)

Environment and Living Solutions Business Domain

Dalian Rayon Environmental Equipment

Wuxi Rayon Membrane Technology

Mitsubishi Chemical Aqua Solutions

Mitsubishi Chemical Cleansui

Resindion

Mitsubishi Chemical Agri Dream

Astro

DIATEX

Advanced Moldings and Composites Business Domain

Mitsubishi Chemical Advanced Materials

Gemini Composites LLC

Toyama Filter Tow

Tosen

Ryoko Sizing

Mitsubishi Chemical Carbon Fiber and Composites (U.S.A.)

Evanston Carbon Fiber

Challenge

MCC Composite Products

Aldila

Wethje Carbon Composites

Mitsubishi Chemical Infratec

Mitsubishi Chemical Composites America

MCC Advanced Moldings

New Energy Business Domain

MC Ionic Solutions UK

MC Ionic Solutions US

Qingdao Anode Kasei

MU Ionic Solutions

Corporate Domain

Mitsubishi Chemical Logistics

Mitsubishi Chemical Engineering Corporation

Ryoko Tekunika

Hokuryo Mold

Mitsubishi Chemical High-Technica

Company Data (Environment and Safety)

Safety Data

Data for fiscal 2016 are the sums of the figures for the previous Mitsubishi Chemical, Mitsubishi Plastics, Mitsubishi Rayon and their respective domestic group companies before the formation of the current Mitsubishi Chemical.

Mitsubishi Chemical Group Process Safety Incidents in Japan

Classification	FY2016	FY2017	FY2018	FY2019	FY2020
Incidents	16	21	33	31	19
Serious incidents	0	0	0	0	0

Mitsubishi Chemical Group Occupational Accidents in Japan

Classification	FY2016	FY2017	FY2018	FY2019	FY2020
Non-lost-time accidents	50	61	63	64	50
Lost-time accidents	5	0	3	6	6
Serious accidents	11	12	8	11	7

Mitsubishi Chemical Group Lost-Time Accidents by Classification

Classification	FY2016	FY2017	FY2018	FY2019	FY2020	Total
Cuts	6	1				7
Being caught and entangled in equipment	9	14	5	3	1	32
Falls on level surfaces	9	8	1	4	3	25
Contact with hazardous substances	6	2		1	1	10
Contact with high/ low temperatures	2			1	3	6
Reaction to motion/ improper motion			2	3	2	7
Collisions		5			2	7
Falls from high places	4	8	2	1		15
Struck by flying/falling objects	1		1		1	3
Others	2	4		4		10

Environmental Data

Data for fiscal 2016 are the sums of the figures for the previous Mitsubishi Chemical, Mitsubishi Plastics, Mitsubishi Rayon and their respective domestic group companies before the formation of the current Mitsubishi Chemical.

Mitsubishi Chemical Group Emissions of Pollutants into the Atmosphere and Water Systems (t)

Pollutant	FY2016	FY2017	FY2018	FY2019	FY2020
NO_x	8,200	7,300	6,700	7,500	7,200
SO_x	2,900	2,900	2,700	2,600	2,400
Dust	180	170	160	150	160
VOCs[1]	4,300	4,900	4,400	5,300	5,000
BOD	100	250	160	160	230
COD	1,700	1,700	1,600	1,600	1,400
Total phosphorus	60	50	50	50	50
Total nitrogen	5,700	5,800	5,400	5,500	4,700

1 Includes PRTR-regulated substances.

* Figures for fiscal 2019 and after have been revised in line with the expansion of the boundaries of the medium- to long-term basic management strategy of Mitsubishi Chemical Holdings (MCHC), KAITEKI Vision 30.

Mitsubishi Chemical Group Water Intake and Discharge Volumes (km^3)

Type		FY2016	FY2017	FY2018	FY2019	FY2020
Intake	Tap water	31,300	1,400	1,300	1,300	1,600
	Surface water	—	47,800	48,300	52,900	51,600
	Groundwater	23,200	25,500	25,900	26,000	24,300
	Industrial water	97,800	82,900	77,000	75,200	72,500
	Seawater	463,100	461,300	493,500	496,400	475,200
Discharge	Oceans	495,100	488,800	552,000	565,000	543,900
	Streams and wetlands	48,300	52,400	52,000	49,500	47,400
	Sewage	3,600	3,300	3,800	4,000	3,600

* Figures for fiscal 2019 and after have been revised in line with the expansion of the boundaries of MCHC's medium- to long-term basic management strategy, KAITEKI Vision 30.

ISO 14001 Certified Mitsubishi Chemical Manufacturing Sites and R&D Centers

Site/Center	Certification body	Registration date
Ibaraki Plant	JCQA[1]	March 2001
Toyama Plant	LRQA[2]	July 2016
Aichi Plant	LRQA	July 2016
Mie Plant	JCQA	July 1999
Shiga Plant	JQA[3]	December 1999
Okayama Plant	JCQA	March 2000
Hiroshima Plant	LRQA	March 2016
Kagawa Plant	LRQA	December 2000
Fukuoka Plant	JQA	July 2000
Onahama Plant	JCQA	March 2003

Site/Center	Certification body	Registration date
Tsukuba Plant	JCQA	February 2000
Tsurumi Plant	LRQA	October 2016
Hiratsuka Plant	JQA	March 2000
Ogaki Plant	SGS[4]	July 2001
Kumamoto Plant	SGS	July 2001
Osaka R&D Center	JCQA	November 2019

As of March 31, 2021

1 JCQA: Japan Chemical Quality Assurance Ltd.
2 LRQA: Lloyd's Register Quality Assurance Limited
3 JQA: Japan Quality Assurance Organization
4 SGS: SGS Japan Inc.