

Initiatives to Help Achieve the SDGs

SDGs and Realizing KAITEKI

The Sustainable Development Goals (SDGs) are a set of development goals for international society as a whole to pursue from 2016 to 2030 that were adopted as part of a resolution titled "Transforming our world: the 2030 Agenda for Sustainable Development" at the UN Sustainable Development Summit in September 2015. The SDGs comprise 17 goals and 169 targets for realizing a sustainable world. Governments and civil society, as well as the private sector, including corporations, are expected to utilize their resources and coordinate to help achieve the SDGs.

In accordance with its vision of realizing KAITEKI, the sustainable well-being of people, society and our planet Earth, the Mitsubishi Chemical Holdings (MCHC) Group adopted improving sustainability as one of its management axes in 2011. We aim to not only help solve environmental and social issues but contribute to the sustainable development of society and the planet. As such, we believe that many aspects of our vision of realizing KAITEKI parallel the SDGs.

Furthermore, MCHC has laid out how the SDGs relate to its important management issues (materiality) and MOS (Management of Sustainability) Indices—which it uses as key performance indicators to enhance sustainability—and has linked these issues and indices with SDG efforts.

Mitsubishi Chemical's Initiatives

As a member of the MCHC Group, Mitsubishi Chemical (MCC) has made realizing KAITEKI its vision and declared that it will seek to address societal issues by creating new value and providing said value to customers as solutions, thereby sustainably growing in concert with society. As a result, many of our initiatives, including the products and services we provide, contribute to the realization of the SDGs.

The *MCC Sustainability Report 2020* features the following four items, chosen as representative examples of MCC's wide-ranging initiatives that contribute to realizing KAITEKI and the SDGs.

KAITEKI Health and Productivity Management— "Mitsubishi Chemical Has Decided"	8 BECENT WORK AND ECONOMIC GROWTH	SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Personnel System Reforms for a Time of Rapid Change	8 DECENT WORK AND FEORIONIC GROWTH	SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Responding to the COVID-19 Pandemic: Social Contribution through Diverse Products and Technologies	3 GOOD HEALTH AND WELL-BEING	SDG 3: Ensure healthy lives and promote well-being for all at all ages
Building a Circular Economy with the Aim of Sustainable Growth	13 CLIMATE	SDG 13: Take urgent action to combat climate change and its impacts

MCC's Initiatives to Date

In addition to the four initiatives featured in Sustainability Report 2020, our website also features the following three ongoing initiatives.

Plant-Derived, Biodegradable Plastic BioPBS™	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	SDG 12: Ensure sustainable consumption and production patterns
Structural Repair and Strengthening Carbon Fiber Fabric Replark™		SDG 11: Make cities inclusive, safe, resilient and sustainable
Decentralized Water Treatment & Supply System	G CLEAN WATER AND SANITATION	SDG 6: Ensure availability and sustainable

Decentralized Water Treatment & Supply System



management of water and sanitation for all

Initiatives to Help Achieve the SDGs

KAITEKI Health and Productivity Management — "Mitsubishi Chemical Has Decided"



Relevant SDG

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

"Mitsubishi Chemical Has Decided"

Under the banner of KAITEKI Health and Productivity Management, Mitsubishi Chemical (MCC) is focusing on the pillars of health support and workstyle reforms as it strives to create workplaces where diverse human resources can thrive. To this end, we are implementing a wide range of measures, which we have distilled into 30 declarations under the title "Mitsubishi Chemical Has Decided" and published both within the Group and externally. These 30 declarations were formulated to reflect employees' wishes for the kind of company they want MCC to be.

By spreading awareness of "Mitsubishi Chemical Has Decided," we aim to ensure that employees accurately understand and support our various personnel measures. We hope that all employees will work toward the goals of KAITEKI Health and Productivity Management.

Mitsubishi Chemical's Vision for KAITEKI Health and Productivity Management

MCC's approach to personnel measures is based on three steps, summarized as creating a "safe, secure and positive workplace," ensuring that we all "respect and accept each other" and cultivating a "win-win relationship between employees and the company" (see the diagram below). Through these three steps, we will achieve KAITEKI Health and Productivity Management. The 30 "Mitsubishi Chemical Has Decided" declarations spell out measures and targets to achieve this goal.



KAITEKI Health and Productivity Management

The 30 Declarations

The 30 declarations reflect employees' wishes for the kind of company they want MCC to be and cover a variety of personnel-related measures, including eliminating second-hand smoke, improving bathrooms at manufacturing sites, ensuring that 100% of eligible male employees take child care leave or use shortened working hours for child care, and making sure that no employee is forced to retire to provide nursing care for a family member. Notably, the declarations comprise not only existing goals and policies, but articulate future targets for the company to address through systems or other measures going forward. By formulating these as declarations, MCC has made clear its stance and determination as it works to achieve KAITEKI Health and Productivity Management.

Declaration 1	We will promote the KAITEKI Health and Productivity Management.	
Deciaration	For the sake of the maintenance and control of employees' health, we will engage more actively and	
Declaration 2	effectively in the prevention and treatment of diseases, and achieving a balance with work.	
Declaration 3	We will position the organizational management and cultivation of subordinates based on the KAITEKI Health and Productivity Management as priority issues of personnel with titles.	
Declaration 4	We will eliminate harassment at workplaces.	
Declaration 5	We will eliminate workers' accidents.	
Declaration 6	We will fully implement countermeasures against passive smoking at workplaces.	
Declaration 7	Personnel assignments will be reviewed so that employees at the manufacturing sites will also be able to take appropriate holidays and leave.	
Declaration 8	We will improve the toilet environment at the manufacturing sites.	
Declaration 9	Unpaid overtime work is not acceptable.	
Declaration 10	Teleworking will be promoted.	
Declaration 11	"E-mailing on holidays" and "ordering the preparation of documents assuming work on holidays" are prohibited.	
Declaration 12	All employees will take a vacation of three consecutive days.	
Declaration 13	The head of an organization who lets subordinates take sufficient paid holidays will be evaluated and recognized by adding the factor to the evaluation/recognition items.	
Declaration 14	We will actively provide support in cases where an employee wishes to accompany his/her transferred spouse or wishes to return to the parents' home to provide nursing care.	
Declaration 15	We will support employees who are rearing children from a long-term perspective.	
Declaration 16	We will achieve a rate of 100% for male employees taking child care leave or shortened working hours.	
Declaration 17	Shortened working hours can also be applied under other personal circumstances such as taking care of a sick family member.	
Declaration 18	We will eliminate retirement due to providing nursing care for a family member.	
Declaration 19	We will convert our workplace into a space in which diverse human resources can work together actively and with enthusiasm regardless of gender, nationality, disabilities, sexual orientation, gender identity, etc.	
Declaration 20	We will promote employment across the company by expanding the scope of work for people with disabilities and improving the workplace environment.	
Declaration 21	Welcome Talent! In addition to new graduates, we will aggressively conduct mid-career employment.	
Declaration 22	Welcome Back! We welcome people coming back to our company with experience at other companies.	
Declaration 23	We will provide support (training, etc.) for all employees so that each one will be able to work comfort- ably after joining the company.	
Declaration 24	Appointment will be conducted considering duties, experience and contribution rather than age and years of service.	
Declaration 25	The experience of taking child care leave and nursing care leave, etc. is valuable, and thus taking holi- days will not be treated disadvantageously upon appointment, promotion and evaluation of employees.	
Declaration 26	We will ensure that a career design interview is conducted to support each employee's growth.	
Declaration 27	We will ask what the own career and desired job is before appointing and cultivating an employee.	
Declaration 28	We will support employees who have a positive attitude about learning.	
Declaration 29	Train yourselves outside MCC!	
Declaration 30	We will support employees who have a positive attitude about volunteers.	



KAITEKI Health and Productivity Management —"Mitsubishi Chemical Has Decided"

Spreading the Word and Employee Perspectives

We are spreading awareness of "Mitsubishi Chemical Has Decided" within the Group through an internal portal site and a series of six videos. The videos focus on employees, featuring interviews with individuals who are utilizing or implementing systems related to the declarations and measures. These include employees using the remote work system and men who are taking child care leave. By directly offering the perspectives of employees themselves, we hope to foster greater support and understanding.

To communicate externally, MCC President Masayuki Waga and employees discussed related measures and initiatives with an outside expert for an article published on the online news site HuffPost.

Employee Perspectives from the "Mitsubishi Chemical Has Decided" Videos

Declaration 5: We will eliminate workers' accidents.

"After our lunch break, we do KAITEKI exercises to help prevent occupational accidents due to falls. It helps make everyone more health-conscious, and it really seems that the number of accidents has decreased."



Declaration 16: We will achieve a rate of 100% for male employees taking child care leave or shortened working hours.

"I didn't take child care leave when my first child was born, but I did for my second and third. Many people might think that a man taking child care leave is something special, so I think that having an environment where it's completely normal is important."



Declaration 21: Welcome Talent! In addition to new graduates, we will aggressively conduct mid-career employment.

"At my previous job, the division of roles was very sharp, so there was a tendency to stop at the limits of one's own job and go no further. At MCC, even a mid-career hire like me has opportunities to be more proactive and take the lead, which I think I've been able to take advantage of."



Personnel System Reforms for a Time of Rapid Change



Relevant SDG

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Reforms Born from the Urgent Need to Survive

Mitsubishi Chemical initiated new personnel system reforms in spring 2019. These reforms were spurred by the urgent conviction that, given changes in the environment surrounding the company and changes in workers' ways of thinking, both the company and its employees must change in order to survive. We began the project to help contribute to the company's growth by examining such questions as whether current personnel systems support initiatives that promote ambitious efforts and innovation on the part of employees, whether the employment we provide is appealing, and whether the mechanisms and environments we have in place encourage the acceptance of diverse values.

Breaking away from previous systems, we are reexamining our basic goals to consider new systems. We believe that implementing reforms based on the results of these considerations will help us get closer to our ideal for the company.

Personnel System Reforms to Help the Company and Employees Grow Together

The key themes for these reforms are self-directed career development; transparent working conditions and compensation structures; and promoting and supporting workforce diversity.

In terms of self-directed career development, we will provide systems that support employees in developing the careers they themselves want. In addition to increasing the frequency of meetings aimed at expanding support for employee growth, we have introduced one-on-one meetings between employees and their supervisors (begun in July 2020). In addition, we have adopted open recruitment as the main means of employee transfer and set up systems to give consideration to location when transferring employees (begun in October 2020). Through dialogue between employees and their supervisors, we are promoting self-directed career development based on mutual understanding of the kinds of careers that employees want to build and the support they need.

To ensure transparent working conditions and compensation structures, we are establishing salary and bonus systems that reflect employee duties and performance as well as market standards. Furthermore, until now, employees received such benefits as allowances and stipends based on their various individual circumstances. We aim to remove considerations related to specific employee attributes, adopting instead a more uniform approach to employee welfare and benefits (to be implemented in April 2021).

Finally, in promoting and supporting workforce diversity, we will extend the mandatory retirement age to 65 so that employees can work longer despite their age. In coordination with self-directed career development efforts, to enable supervisors to better support the ambitious efforts and growth of their subordinates, we are revising existing frameworks in which supervisors unilaterally issue instructions. Instead, we seek to encourage supervisors to take the time to listen to their employees and promote awareness that each individual has different values and is deserving of mutual respect.



Personnel System Reforms for a Time of Rapid Change

What should be done to realize KAITEKI

The Ideal Image of the Company

- To realize KAITEKI and make the Company grow further by taking up new challenges and demonstrating creativity
- To that end, we want our employees to work in a cheerful and lively way
- We want the Company to become an employer preferred and chosen by diverse talent

Make the Company and employees build relationships in which they both choose and energize each other and develop a corporate culture through which <u>they can grow together</u>





Fostering a Culture That Will Help Realize KAITEKI

We believe that, even in an environment changing as rapidly as the one we find ourselves in today, if each employee takes up new challenges and demonstrates creativity, it will lead to corporate growth. Furthermore, to become a company preferred and chosen by diverse talent, we must ensure that the Company and employees build relationships in which they both choose and energize each other and develop a corporate culture through which they can grow together. These personnel system reforms will serve as the starting point to achieve this. By improving our personnel systems, which form part of the foundation for working toward the shared goal of realizing KAITEKI, we aim to fully utilize the abilities and strengths of each individual within their respective field of specialization.

We expect to start seeing the results of these systems after they have begun to operate in earnest, once all their components have gone into effect (April 2021). Furthermore, these reforms are a company-wide project. Ensuring that all employees understand and fully utilize our personnel systems will require regular, effective communication within departments, starting with that between supervisors and their employees, and between departments. By doing so, we will bolster shared values of diversity and mutual respect and thereby develop a culture that will help realize KAITEKI.

Responding to the COVID-19 Pandemic: Social Contribution through Diverse Products and Technologies



Relevant SDG

SDG 3: Ensure healthy lives and promote well-being for all at all ages

Seeing the strain that the COVID-19 (novel coronavirus) pandemic has put on the medical system, we at Mitsubishi Chemical (MCC) asked ourselves how we could contribute using the industrial materials and technologies of the MCC Group. Leveraging ideas and networks from within the Group, and the diversity and versatility of its chemicals, we have provided the following products to society.

Contributing through Products

Plastic Gowns

We developed plastic gowns based on instructions from the Ministry of Health, Labour and Welfare by adapting polyethylene rain ponchos. We added thumb holes at the ends of the sleeves to prevent them from riding up as well as a perforated line down the back to make it easy to take the gowns off, reducing the risk of contactbased infection. Furthermore, each gown weighs less than 100 grams, helping to reduce waste when used gowns are thrown away.



Plastic gown

Face Shields

MCC created face shields by applying polyester sheet manufacturing technologies used to produce food packaging trays along with curved creasing technologies developed for cosmetics case processing.

MCC was quick to donate and supply plastic gowns and face shields to medical institutions, helping to prevent the spread of infection in hospitals and clinics.



Face shield



Glare reduction model

Laundry Bags

Laundry bags made from our water-soluble film Hi-Selon[™] allow users to wash used sheets or clothing without touching them. Their use, mainly in hospitals, helps prevent infection.



Laundry bag



Products to Help Prevent Infection by Airborne Droplets

MCC offers SHINKOLITE[™] continuous cast acrylic sheets and Altron[™] flexible PVC film, which are used to make partitions that help prevent the airborne spread of COVID-19 in daily life. Due to their excellent transparency and formability, these products are being used in a wide array of settings, such as at the registers and counters of stores and restaurants; in offices; service counters at public service facilities; inside taxis, buses

and public transportation; and on TV filming sets.



Standing partition made of SHINKOLITE™ cast acrylic sheet



Partition curtain made with Altron™ flexible PVC film



HISHITANK™

HISHITANK™

HISHITANK[™] is a water tank made of fiber-reinforced plastic developed primarily to provide clean drinking water and featuring outstanding performance in terms of seismic resistance, hygiene, durability and workability. These tanks have been installed by the Nippon Foundation at facilities built to combat the COVID-19 pandemic. They have also been installed at quarantine lodging facilities built by the Hong Kong government, specifically for COVID-19 patients, to help ensure an adequate supply of hospital beds.

■ Wasaouro[™]

Wasaouro[™] is an antibacterial, freshness-maintaining agent, the main component of which is allyl mustard oil (allyl isothiocyanate, "AIT"), the main compound responsible for the spicy flavor of wasabi and Chinese mustard. AIT-impregnated transparent films gradually release AIT, providing an easy and safe way of maintaining food freshness and quality by suppressing the growth of bacteria and mold. This product is well suited to maintaining the quality of products with short shelf lives, such as boxed lunches. We provided it free of charge for a limited time to restaurants that began selling boxed lunches while dine-in operations were closed to prevent the spread of COVID-19.



Wasaouro™



Repositionable adhesive posters made with YUPO™ SUCTIONTACK™

■ Repositionable Adhesive Posters Made with YUPO[™] SUCTIONTACK[™]

MCC provided a limited supply of posters to raise awareness of infection prevention practices free of charge to restaurants and companies working to prevent the spread of COVID-19. These posters were made with YUPO[™] SUCTIONTACK[™], a repositionable adhesive sheet that uses micro-suction to cling to smooth surfaces without blisters.

Main Products Helping Combat the Spread of COVID-19

Contribution		Company
Plastic gowns		J-Film Corporation
Face shields		J-Film Corporation
Laundry bags		TAISEI KAYAKU CO., Ltd.
Airborne transmission prevention products	Partitions made from SHINKOLITE™ cast acrylic sheet	Mitsubishi Chemical Corporation
	Partition curtains made with Altron™ flexible PVC film	DiaPlus Film Inc.
HISHITANK™		Mitsubishi Chemical Infratec Co., Ltd.
Wasaouro™		Mitsubishi-Chemical Foods Corp.
Repositionable adhesive posters made with YUPO™ SUCTIONTACK™		YUPO CORPORATION

Other Forms of Contribution

IP Open Access Declaration Against COVID-19

MCC joined the IP Open Access Declaration Against COVID-19 in May 2020. The declaration is a pledge to not assert any patent right, utility model right, design right or copyright against any development, manufacture, sale, or other related activity carried out for the purpose of stopping the spread of COVID-19. MCC declared that, with regard to activities carried out for the sole purpose of stopping the spread of COVID-19, it would temporarily suspend its assertion of patent rights, utility model rights, design rights and copyrights and refrain from seeking compensation for their use.

For Children

With school closures and efforts to stay home to prevent the spread of infection, many children are spending more time than usual at home. To make this time more enjoyable and help spark an interest in chemistry, since May 2020, MCC has been soliciting chemistry experiment videos from its employees and posting them to the MCC Group internal portal site. Employees submitted more than 10 videos that encourage children to think, experiment, and learn in a fun way using household materials and provide explanations of chemical phenomena. Beginning in July 2020, we published some of these on YouTube.



Experient video

In addition, we donated 17,000 high-efficiency N95 face masks that MCC's Shiga Plant had stockpiled to medical facilities in Nagahama City.

Going forward, while working in coordination with government and industry organizations, the MCC Group will continue to solicit ideas covering a wide range of topics from employees, seeking to combine its diverse products and technologies to proactively develop new products that will help combat the spread of COVID-19.





Building a Circular Economy with the Aim of Sustainable Growth



Relevant SDG

SDG 13: Take urgent action to combat climate change and its impacts

Offering New Business Solutions by Promoting a Circular Economy

The world today faces numerous serious challenges, such as climate change and the various problems arising from population growth. Chemical technology has tremendous potential to solve a wide range of social issues. Mitsubishi Chemical (MCC), as a member of society, and as an integrated chemical company, has long faced such issues head-on.

Particularly in recent years, demand from customers for sustainable products has been growing constantly in response to tightening environmental regulations in various countries. MCC aims to meet the demands of society by transitioning from a traditional one-way linear economy of "take-make-waste" to a circular economy (CE) based on the effective use of resources, including recycling, and the use of renewable raw materials.

Below, we highlight some of the concrete steps we are taking, such as the establishment of the Circular Economy Department (CE Department) and the implementation of initiatives to tackle the issues of waste plastic and climate change.



Offering Solutions from a Global Perspective

In April 2020, MCC established the CE Department to reinforce initiatives that address social issues related to sustainability. While we have been working to solve sustainability-related issues in each of our businesses, the CE Department will operate with a global perspective and scale across business domains to promote CE-related solutions and develop them into businesses. The department will also actively promote collaborations with business partners, academia, start-ups, and other partners.

The CE Department will handle CE-related issues on a company-wide basis. The activities of the department will include identifying CE-related issues and formulating strategies at the company-wide level, promoting the development of solutions into businesses, and implementing sustainability management to reduce the environmental burden generated by our business activities, including greenhouse gases (GHGs) and wastewater emissions. In addition, the department will gather and provide information on sustainability-related policy in various countries and provide support for dialogue about CE with customers.

Advancing Partnerships to Build a Plastic Recycling Scheme

Recycling is extremely important to the transition from a linear economy to a circular economy. The MCC Group is advancing partnerships with recycling companies that boast both waste plastic collection technologies and networks.

Plastic recycling is broadly divided into two approaches: mechanical recycling, in which collected waste plastic is melted down and reformed for reuse, and chemical recycling, in which it is decomposed into monomers or reverted to oil or gas for use as a raw material in chemical production. MCC is advancing partnerships with a variety of partners that include technology development based on both approaches. In doing so, we are reinforcing efforts to build a scheme for recycling waste plastics—which have conventionally been simply incinerated or buried in landfills—into resources and raw materials.

Partnerships with Recycling Companies

Partner (Location)	Summary
Refinverse, Inc. (Tokyo)	Having started from a business that collected and transported construction- related waste for treatment, Refinverse has built an integrated system extending from waste treatment to resin production, thereby supplying a diverse range of recycled resources. Through this capital and business alliance, the two companies will combine Refinverse's know-how regarding all aspects of industrial waste with MCC's technologies and knowledge to promote the appropriate recycling and effective use of waste.
CFK ¹ and cNXT ² (Germany)	CFK has a network for collecting leftover materials generated during the molding of such intermediate materials as carbon fiber (CF) prepreg, mainly from customers in mobility-related industries, as well as technologies to recycle these materials. cNXT then sells the resulting recycled products. MCC acquired CFK through Group company Mitsubishi Chemical Advanced Materials (MCAM; Head office: Switzerland). Going forward, MCC will establish a circular chain extending from the manufacture of CF and CF composites to the collection and recycling of related products in Europe.
Minger Group ³ (Switzerland)	The Minger Group boasts superior proprietary recycling technologies for such engineering plastics as PEEK, PVDF and nylon as well as a material collection network that spans much of Europe. MCC acquired the Minger Group through Group company MCAM. Going forward, MCC will establish an integrated business model for engineering plastics, from manufacturing to sales, machining, collection and reuse.

1 CFK: CFK Valley Stade Recycling GmbH & Co. KG

2 cNXT: carboNXT GmbH

3 Minger Group: Minger Kunststofftechnik AG and Minger Plastic AG



Reducing GHGs through an Artificial Photosynthesis Project

Artificial photosynthesis is a promising approach to reducing GHGs that uses CO₂ emitted from power plants and factories as a raw material for chemical products. Since 2012, MCC has participated as a member of ARPChem,⁴ a NEDO⁵ project aimed at realizing artificial photosynthesis, and is involved in the development of core technologies for all of the following three processes.



1. A photocatalyst splits water into gaseous hydrogen and oxygen; 2. the hydrogen is then safely separated out of the mixed hydrogen and oxygen gas using a separation membrane; and 3. the hydrogen is used as a raw material together with CO₂ recovered from the gas emissions of power plants or factories to produce chemical products.

The project's target for photocatalyst solar energy conversion efficiency has been set at 10%. In fiscal 2019, an efficiency of 7% was achieved in a laboratory setting. Outdoor demonstrations of the water splitting systems began in fiscal 2020.

4 ARPChem: Japan Technological Research Association of Artificial Photosynthetic Chemical Process, comprising INPEX CORPORATION, TOTO LTD., Japan Fine Ceramics Center, Fujifilm Corporation, Mitsui Chemicals, Inc., and MCC.

5 NEDO: New Energy and Industrial Technology Development Organization

Establishing a Long-term Vision for the Chemical Industry

MCC and the Center for Global Commons (CGC) at the University of Tokyo have launched an industryacademia partnership with the aim of formulating a long-term vision of the chemical industry's approach to sustainability with an eye toward society in 2050.

To ensure the sustainability of global environmental systems essential to the development of humankind, CGC aims to scientifically demonstrate pathways for the fundamental transformation of socio-economic systems based on modelling and indices. In collaboration with a wide range of stakeholders, including private enterprises, CGC aims to drive this fundamental transformation through international cooperation.

MCC plans to conduct joint research with CGC to identify the social needs (particularly in the areas of products, services and social systems) of 2050, as well as those along the way in 2030 and 2040. Given such needs, MCC plans to outline the role of the chemical industry over the long term.