

Our Challenges

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Sustainability as an Opportunity

The Kuraray Group is pursuing sustainability as we seek the prosperity of society. We will harness our unique products and cleaner technologies to improve the natural environment and enhance quality of life for people everywhere.



Sustainability Long-Term Vision and the "3P" Model

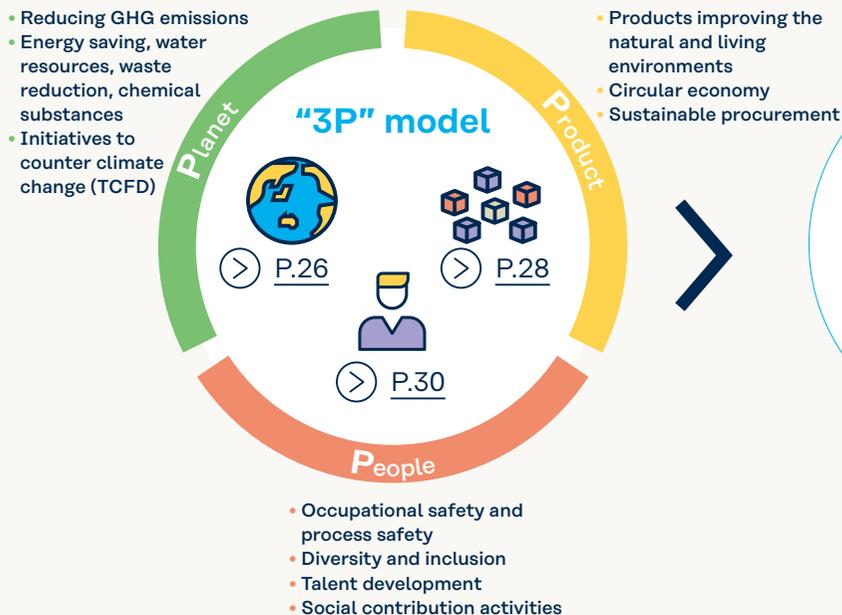
Considering sustainability to be one of our most critical management strategies, the Kuraray Group established the Sustainability Long-Term Vision to express our commitment to pursuing sustainability across the entire Group. To realize this vision, under the Medium-Term Management Plan "PASSION 2026," sustainability-related measures are summarized in the Sustainability Medium-Term Plan and grouped into three Ps: Planet, Product, and People. Through our global engagement using the "3P" model, we aim to convey our sustainability initiatives to all of our stakeholders in an easy-to-understand format. By steadily moving forward with the various measures indicated under the "3P" model, we are striving to bring about the prosperity of both society and the Kuraray Group.

 [Sustainability Long-Term Vision](#)

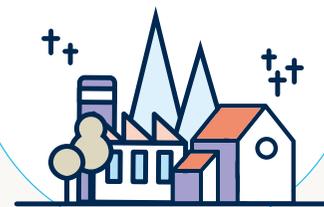
 [Sustainability Medium-Term Plan](#)

Sustainability Long-Term Vision

As a sustainability leader, Kuraray will develop innovative solutions with unique products and cleaner technologies to improve the natural environment and enhance quality of life for people everywhere.



Prosperity (Social Prosperity)





Sustainability Medium-Term Plan: Planet

Environmentally Friendly Manufacturing

We believe it is vital for the Kuraray Group as a Specialty Chemical Company to provide the world with the products and services needed to realize a low-carbon and environmentally friendly society, and to manufacture our own products with as little environmental impact as possible. Based on this philosophy, the Kuraray Group in its global manufacturing activities continues to conserve the environment, including the promotion of measures against global warming, reduction of chemical substance emissions, and effective use of resources.

Environmental Management System

Environmental Performance

Activity	Sustainability Medium-Term Plan for Planet: Environmental Impact Reduction Targets (FY2022–FY2026)		FY2022 Results
GHG emissions	Kuraray Group in Japan and outside Japan:	Scope 1 + 2: No increase in emissions compared to 2019. (30% reduction compared to 2019 by 2030)	Scope 1 + 2 emissions: 2,896 thousand tons-CO ₂ e (2019: 3,230 thousand tons-CO ₂ e)
		Scope 3: Target the entire Group and identify categories that account for more than two-thirds of emissions; formulate reduction targets for 2024 and 2026	We are currently identifying major categories for the entire Group to formulate reduction targets.
Improved energy efficiency (energy conservation)	Kuraray Group in Japan and outside Japan:	Sales intensity of energy consumption: Reduction of 5% or more in 2026 compared to 2019 (improvement)	Sales intensity of energy consumption: 17.2% reduction compared to 2019 (improvement)
Effective use of waste	Kuraray Group in Japan and outside Japan:	Sales intensity of waste generation: Reduction of 5% or more in 2026 compared to 2019 (improvement)	Sales intensity of waste generation: 28.0% reduction compared to 2019 (improvement)
Effective use of water resources (excluding seawater)	Kuraray Group outside Japan:	Sales intensity of water usage (excluding seawater): Reduction of 5% or more in 2026 compared to 2019 (improvement)	Sales intensity of water usage (excluding seawater): 25.6% reduction compared to 2019 (improvement)
Emission management of chemical substances	Kuraray Group in Japan:	Chemical substance emissions: Manage at levels below 2019 results	Chemical substance emissions: 894 tons (2019: 967 tons)
	Kuraray Group outside Japan:	Comply with chemical substance emission regulations in each country and region where overseas production bases are located, and continue quantitative emission control	Complied with chemical substance emission regulations and implemented quantitative emission control.

Reduction of Greenhouse Gas (GHG) Emissions (Scope 1 + 2)

The Kuraray Group has formulated a roadmap for reducing Scope 1 and Scope 2 GHG emissions, with the goal of achieving net-zero carbon emissions in 2050. In 2022, we pursued energy-saving investments using our internal carbon pricing system. We also promoted the greening of electricity, such as by purchasing Unbundled Energy Attribute Certificates (renewable energy certificates) at Group companies overseas and installing solar power generation facilities at our activated carbon manufacturing site in Belgium. In the United States, we established a cross-organizational project team to handle carbon capture, utilization and storage (CCUS*), where the carbon is a by-product of coal-based activated carbon production. We are seeking to expand this initiative as a corporate project.

* Carbon dioxide Capture, Utilization, and Storage: An initiative to utilize or store CO₂ separated from exhaust gas from industrial facilities.

“PASSION 2026” Targets and Fiscal 2022 Results

	FY2022 results	FY2024 targets	FY2026 targets
GHG emissions (Scope 1 + 2)	2,896 thousand tons-CO ₂ e	No increase in emissions compared to 2019 (3,230 thousand tons-CO ₂ e)	

Global Warming Prevention / GHG Emissions and Reduction Measures

Reduction of Greenhouse Gas (GHG) Emissions (Scope 3)

We had calculated Scope 3 GHG emissions only in Japan, but are now moving forward with Group-wide calculations. By 2023, we will target the whole Group and also improve the accuracy of measurements, seeking to identify categories that account for two-thirds of all Scope 3 emissions. We will also deepen the dialogue with business partners and set Scope 3 reduction targets for the entire supply chain.

We aim to obtain SBT (Science Based Targets)*1 certification for our Scope 1 and 2 as well as Scope 3 GHG emission reduction targets.

*1 SBT (Science Based Targets): Voluntary targets set by business corporations with regards to GHG emission reductions over the course of 5 to 15 years in a manner consistent with the levels required by the Paris Agreement.

Disclosure in Line with TCFD Recommendations

In November 2020, the Kuraray Group endorsed the recommendations of the Task Force on Climate-Related Financial Disclosure (TCFD) in recognition of the importance of climate change control as one of our high-profile issues. We will gradually enhance disclosure structured around TCFD recommendations for governance, strategy based on scenario analysis, risk management, and metrics and targets.

In 2022, we conducted scenario analysis based on the below 2-degree scenario (including a 1.5-degree scenario) amid a continued shift toward a low-carbon society, and the 4-degree scenario, amid advancing climate change, assessing the impact of climate-related risks and opportunities. For this, we drew on insights from reports such as the World Energy Outlook published by the International Energy Agency (IEA). It was discovered that carbon pricing*2 has a significant impact on GHG emissions and energy procurement in the below 2-degree scenario. Carbon taxes for the Group are also projected to total approximately ¥32 billion in 2030 following measures to combat GHG emissions, indicating a potential increase in operating costs. As part of our measures, we will steadily advance our GHG emission reduction program toward achieving carbon neutrality by 2050 while reflecting the market value generated by highly environmentally friendly products and services in their pricing.

In addition, we calculated the business impact of climate risks and opportunities in each scenario of the vinyl acetate-related business and the Environmental Solutions business, both of which are significantly affected by climate change. We will take appropriate measures to deal with each calculated impact, and continue to analyze other businesses.

*2 Calculated based on World Energy Outlook 2022 at \$140/t-CO₂e for developed countries, \$25/t-CO₂e for emerging countries [2030, 1.5°C scenario].

 [Disclosure Based on TCFD Recommendations](#)

“PASSION 2026” Targets and Fiscal 2022 Results

	FY2022 results	FY2024 targets	FY2026 targets
GHG emissions (Scope 3)	1,002 thousand tons-CO ₂ e (Japan only*)	Target the entire Group and identify categories that account for more than two-thirds of emissions In 2023, formulate reduction targets for 2024 and 2026	

* We are gauging major categories for the Kuraray Group as a whole in preparation for formulating reduction targets.

 [Global Warming Prevention / GHG Emissions and Reduction Measures](#)

Business Impact of Climate Change Risks and Opportunities in Each Scenario of the Vinyl Acetate-Related Business and the Environmental Solutions Business

Blue font: Profit Red font: Loss Large ≥ ¥10 billion ¥10 billion > Medium ≥ ¥1 billion ¥1 billion > Small

	Risks and opportunities	Business impact	Business impact in 2030		
			Scenario		
			4°C	Below 2°C	
Transition Risk to low-carbon society	Decrease in revenue from the burden of carbon taxes on GHG emissions and energy procurement	Costs due to carbon tax*3	Medium	Large	
		Change in purchase cost of fossil fuels/oil-derived raw materials	Small	Medium	
		Change in utility costs (electricity)	Small	Medium	
	Expand business of products made by biomass-derived materials	Impact of achieving GHG emission reduction targets	Costs avoided by GHG emission reduction initiatives	Medium	Large
		Expand business of renewable (recyclable) products	Increase in operating income for packaging materials derived from biomass	Small	Medium
		Expand business of renewable (recyclable) products	Change in operating income for recyclable plastic products	Small	Small
Physical Risk from climate change	Increased damage to plants and production capacity reduction or shutdowns due to flooding in areas near oceans and rivers	Decrease in internal-combustion engine related products due to increase of electric mobility ratio	Change in operating income for automotive fuel tanks	Small	Small
			Costs of damage caused by future increases in flooding	Small	Small
	Decline in production efficiency due to unfavorable working conditions amid rising temperatures	Expand businesses that reduce scarce water supply	Increase in labor costs	Small	Small
			Increase in operating income for activated carbon used in water purification	Medium	Small

*3 Below 2°C scenario (including 1.5°C scenario): \$140/t-CO₂e for developed countries and \$25/t-CO₂e for emerging countries in 2030.
4°C scenario: \$90/t-CO₂e for EU in 2030

 [Global Warming Prevention / Response to TCFD Recommendations and Internal Carbon Pricing](#)

Product

Sustainability Medium-Term Plan: Product

Expanding Products That Contribute to the Natural and Living Environments

The Kuraray Group believes that its unique products and cleaner technologies will help bring about a sustainable society, and we are working to expand the range of products that make positive contributions.

Under "PASSION 2026," in setting out targets to expand the lineup of products that contribute to the natural and living environments, we put in place the Kuraray Portfolio Sustainability Assessment (PSA) system* to ensure objectivity and transparency in our product screening. The Kuraray Group has also positioned social and environmental value as an axis used to build a more sophisticated business portfolio. To use the screening results of the Kuraray PSA system as an indicator for this axis, we had to expand the ratio to total sales of products evaluated based on the PSA guidelines of the WBCSD. Such products accounted for 58% of total sales in fiscal 2022. We plan to increase this ratio to 80% by 2024.

In addition, we designate products with high PSA scores as the Kuraray Group products that contribute to the natural and living environments. We aim to increase the

sales ratio of such products from 46% in 2020 to 55% by 2024, and to 60% by 2026. In fiscal 2022, we continued to expand the businesses of such products, raising their sales ratio to 54%. "PASSION 2026" calls for us to continue seeking to achieve the sales ratio target for products that contribute to the natural and living environments.

* A system based on PSA guidelines developed by the World Business Council for Sustainable Development (WBCSD)

"PASSION 2026" Targets and Fiscal 2022 Results

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	FY2022 results	FY2024 targets	FY2026 targets
Sales ratio of products that contribute to the natural and living environments	54%	55%	60%
(Products that contribute to the natural environment)	(20%)	(23%)	(27%)
(Products that contribute to the living environment)	(34%)	(32%)	(33%)
Ratio of PSA-screened products to total sales	58%	80%	—

Kuraray Group Products That Contribute to the Natural and Living Environments

Improving natural environment

Asbestos substitutes

- KURALON™ PVA fiber
 - Helps extend the life of cement materials
 - Fewer GHG emissions compared to competitive products

Biomass-derived or recycled raw materials

- Liquid rubber made from biomass-derived materials
- Environmentally friendly polyester fiber and textile products
- Recycled raw material-used CLARINO™ man-made leather



• Reduces Scope 3 GHG emissions

Water and air purification

- Activated carbon



- Easy to reactivate
- Suitable for environmental regulation

Lower logistical burden, food loss reduction

- EVAL™ EVOH resin

- Recyclable (contributes to a circular economy)
- Reduces food loss

- PLANTIC™ biomass-derived gas barrier material

- Reduces Scope 3 GHG emissions
- Reduces food loss



Improving living environment

Makes dentists' and patients' lives easier

- Dental materials
 - Shortens time of treatment
 - Long-lasting products reduce number of replacements

High-speed communication

- VECSTAR™ liquid crystal polymer film
 - Realizes high-speed communication



Lightweight EVs

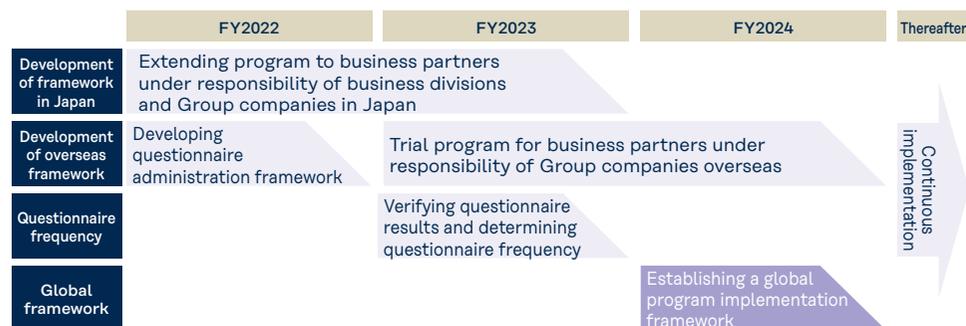
- GENESTAR™ heat-resistant polyamide resin
 - Improves durability of end-product

Promoting Sustainable Procurement

In line with growing social demand for adequate supply chain management, the Kuraray Group revised its CSR Procurement Policy in 2019 and is requesting the cooperation of business partners to comply with this policy. Under "PASSION 2026," we will extend the scope of this activity to business partners, including overseas partners, representing 80% of the Group's total purchase amount (90% of the purchase amount for raw materials, secondary materials and products).

Our initial focus has been in Japan. Here, our initiatives started with disseminating our CSR Procurement Policy to major business partners in 2020, which we followed with CSR procurement questionnaires. We analyzed and evaluated the results of the questionnaires, providing feedback and supporting improvement as necessary. In 2022, we extended these initiatives to include the separate suppliers of our various business divisions and affiliated companies, representing 80% of the Group's total purchase amount.

Also in 2022, we established a framework for carrying out procurement surveys overseas to expand this initiative to the business partners of overseas Group companies. Starting in 2023 we will request overseas business partners to comply with the CSR Procurement Policy and begin auditing the status of compliance.



Sustainable Procurement

Quality Management

The Kuraray Group conducts ongoing activities to improve quality and ensure reliability with the goal of offering products and services that contribute to customers and to society. In particular, we are pursuing digitalization to allow us to reliably store and trace quality data and to visualize quality information. This system is due to come online in some business divisions in 2023.

Another focus is on in-house seminars to hone the capabilities of persons tasked with quality assurance. In 2022, we held a seminar on the topic of learning from failure to aid in prevention, which gave insights into ways of approaching quality improvement activities.

In addition, we are revising internal quality assurance regulations and verifying the methods of managing certified products that were found to have problems at other companies. These and other activities aim to improve quality across the Group, among persons in charge of production, sales, and development as well as persons in charge of quality assurance and quality control.

In 2023, we will continue to offer products and services that achieve customer satisfaction through these activities.

Quality Management

Product Safety and Chemical Management

To ensure the safety of products, the Kuraray Group's respective divisions make evaluations and improvements using risk assessment techniques in developing new products and managing changes to ensure product safety and guarantee quality. In addition, with regard to manufactured products or products under development that are particularly in need of safety validation, such as those that are ingested and those that use nanomaterials, we set up a deliberation committee led by the Corporate Sustainability Division to confirm safety.

In the management of chemical substances, we have established a system that enables us to acquire information on laws governing chemicals and hazards and prepare and manage safety data sheets (SDSs), including Group companies in Japan and overseas. In addition, we appoint people responsible for and in charge of chemical management at each division. These staff take the lead in conducting continuous in-house education to deepen understanding of chemical substance management and laws and regulations governing chemicals. Furthermore, by collaborating with Group companies outside Japan to research and share information on laws and regulations in each country, we are aiming to achieve proper chemical substance management across the entire Group.

Product Safety and Chemical Management



Sustainability Medium-Term Plan: People

Education on Kuraray's Values and Philosophy

Based on the Kuraray Group Global Human Resource (HR) Policy, the Kuraray Group is making efforts to develop its organizational system regarding the promotion of diversity, cultivation of human resources, and just and fair evaluation of performance, as well as cultivating a healthy corporate culture and creating new employment opportunities, so that each employee can grow personally through work.

The Kuraray Group carried out its first global engagement survey in 2022, called Our Voice. We will use the survey results to heighten employee engagement and give impetus to the goals of innovation and transformation of people set out in "PASSION 2026."

Activities at Workplaces

Diversity and Inclusion Initiatives

The Kuraray Group has set the destination for its diversity and inclusion initiatives as becoming "a company where each employee in a diverse workforce works enthusiastically and tackles challenges without fear of failure, generating a succession of innovations while responding to change and continuing to grow."

To this end, under "PASSION 2026," we will develop a consistent HR platform and personnel data across the entire Group, and implement measures to promote HR development and diversity based on a long-term perspective. We will seek globally to assign and promote personnel best suited to each job position in a way that allows individuals to reach their full potential and help grow the business. We will cultivate an organizational culture in which each person respects diversity and tackles challenges without fear of failure.

Our focus in Japan is on ensuring diversity in core human resources, defined as the management layer. We will work to advance women, foreign nationals, and mid-career hires to positions of management. Our goal is to boost the ratio of such managers from 12% as of September 2021 to 25% or more by 2030 (excluding production sites).

Diversity and Inclusion

"PASSION 2026" Targets and Fiscal 2022 Results

	FY2022 results	FY2024 targets	FY2026 targets
Global measures	—	Human resource development from a long-term perspective and promotion of global mobility HR measures to promote diversity (personnel database, personnel recruitment, etc.)	
Ensuring diversity of core human resources*	13%	16%	20%

* Ratio of managers who are women, foreign nationals, and mid-career hires (in Japan, excluding production sites)

HR Platform and Personnel Database

To put fair, effective HR measures in place across the Group worldwide, it is essential to build an HR platform that includes a common global personnel system and personnel database. In 2022, our first step toward aligning job grades globally involved revising conditions for positions above a certain level. Regarding compensation, we integrated the process for determining the rate of salary raises and established rules for the performance indicators affecting bonuses.

In 2023, we will establish a global standard for job grades across all management levels. As for the personnel database, we will expand the pool of personnel to be included, enhance career training information, and take other steps to create a framework that can be used for HR development and the recruitment of diverse human resources.

Personnel Evaluation System

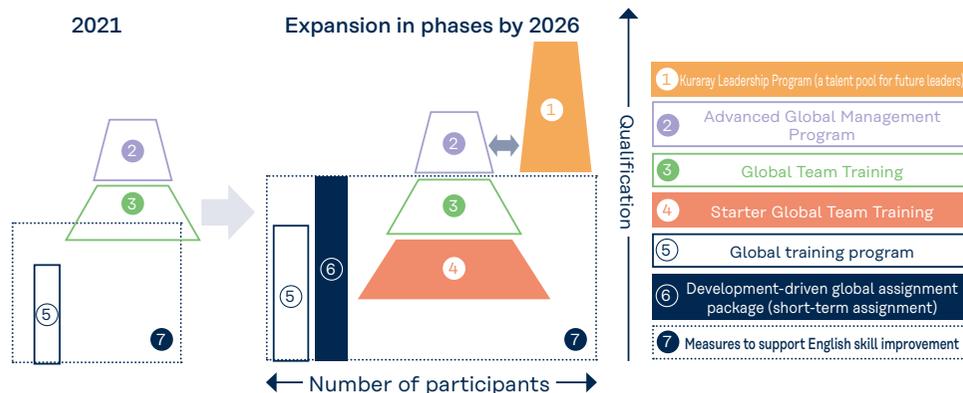
The Kuraray Group seeks to cultivate an organizational culture where employees take on challenges without fear of failure, without settling for the status quo, adopting a forward-thinking attitude and embracing new perspectives. To this end, we recommend setting "challenge goals" for individual employees, and evaluating employees not only by results but also in light of the processes and actions they take to achieve their goals. Moreover, to spur the creation of business value for the Group as a whole, we encourage active participation in collaborative activities that transcend organizational barriers.

Global Talent Development

One cornerstone of the further growth of the Kuraray Group is the development of personnel who can play an active role in a global context. In addition to our existing program for global team leaders (Global Team Training = ③ in the chart), in 2022 we launched a full-fledged program for employees who are expected to play an active role as global senior leaders down the road (Advanced Global Management Program = ②). We have also started a trial run of a global talent development program targeting younger employees at an early stage (Starter Global Team Training = ④). Going forward, we plan to continue expanding and enhancing the Global Talent Development Program.

Talent Development

Expansion of Global Talent Development Program



Cultivating Successors

We believe providing appropriate opportunities in a fair and systematic manner so that people working in the Kuraray Group can fully demonstrate their diverse capabilities will lead to the growth of both individuals and the Company. To this end, we are preparing a program to cultivate successors. Concretely, we are working to visualize the capabilities required for job positions and the capabilities of individual employees, and to develop specific training and other support geared to cultivate the requisite capabilities identified in that process.

Social Contribution Activities

We in the Kuraray Group consider the sound and sustainable advancement of society to be a precondition for corporate growth and prosperity, as well as the ultimate objective of corporate activities. It goes without saying that we see it as our duty to contribute to society by providing people with products with genuine value. Beyond this, we consider helping to resolve social issues to be another important form of social contribution in our capacity as a corporate citizen.

The Kuraray Group carries out activities focusing on the priority areas of culture, science, environment, and social welfare in accordance with its policy for social contribution activities. Amid the global expansion of the businesses and market presence of the Kuraray Group, the Kuraray Foundation was established in April 2016 with contributions from Kuraray to pursue sustainable social activities. The Kuraray Foundation carries out creative activities informed by the history of Kuraray to contribute to society even more broadly and with greater impact.

Interaction with Society

Kuraray Foundation website

Review of Fiscal 2022, Fiscal 2023 Plan

FY2022 plan	Results	Evaluation and challenges	FY2023 plan
[Science] [Social Welfare] Implement "Sending School Backpacks Across the Sea" campaign even during COVID-19. (Japan)	Delivered: 7,995 backpacks As usual, called for donations of school backpacks through the Kuraray website and elementary schools near Kuraray sites. Scaled down packing work and ensured adequate space to avoid crowding	Even amid the pandemic, we were able to collect and ship backpacks as usual. We took sufficient measures to prevent infection	Mark 20th time to carry out the campaign since its start. Aim to bring back events held before COVID-19 (We collected roughly 7,800 backpacks from all over Japan in fiscal 2023, and employee volunteers inspected, packed, and boxed them in April.)
[Science] To the extent possible, plan and host "Chemistry Classes for Boys and Girls" despite COVID-19. (Japan)	While monitoring COVID-19 case levels in each business region, we: - Visited elementary schools near the Niigata and Kashima plants and hosted classes while taking steps to prevent infection - Hosted classes at a local cultural facility near the Tsurumi Plant while taking steps to prevent infection		Aim to hold events as before COVID-19, including at offices that could not host events in fiscal 2022
[Social Welfare] Operating workshops for people with intellectual disabilities. (Japan)	Number of people employed Intellectually and physically disabled people: 42 Instructors: 15 (Results are total for Niigata, Saijo, Kurashiki, Kashima, and Okayama.)	Operated workshops as usual, taking all possible steps to prevent infection. We will continue to promote safety and health management and train instructors	While diversifying the content of work, ensure rigorous workplace safety and emotional security
[Culture] [Science] [Environment] [Social Welfare] Offices and affiliated companies in Japan and overseas subsidiaries will carry out social contribution activities together with local communities that are of benefit to local residents. (Japan, overseas)	Support for art and folk art museums, education, and sports; cleanup activities at neighborhood roads, rivers, and parks; forest conservation; recreation; charity events; disaster area support; donating to public utility projects. Continued activities to the extent possible during the pandemic, both in Japan and abroad	Resume pre-COVID-19 activities to the extent possible in each region	Reiterate the Kuraray Group's philosophy of contributing to society, explore activities to pursue in collaboration

Reinforcing Occupational Safety, Process Safety

In the Kuraray Group's business activities, safety is the cornerstone, an absolute requirement that forms the basis for all activities. It is evident that realizing workplaces where people can safely work at ease without accidents is a critical theme both in maintaining a stable supply of products and in maintaining society's trust. Based on this view, the Kuraray Group has developed and operates safety management systems and is pursuing various initiatives to raise employee awareness of safety and establish safe actions and safety checks as routine practices.

At each workplace, we uncover risks related to occupational safety and process safety, conduct thorough risk assessment activities, promote fundamental equipment safety measures, and prevent process accidents and occupational injuries. Additionally, to prepare for the event of an accident or injury, we are carrying out training to minimize damage, sharing information on cases of accidents and lessons learned, and horizontally deploying countermeasures.

Guiding Principle for Ensuring Safety	Action Courses for Ensuring Safety (FY2023)
<p>Safety Is the Cornerstone of Everything We Do</p>	<ol style="list-style-type: none"> 1) Ensure and Practice "Safety First, Production (Construction, R&D) Second" 2) Ensure and Practice that Predict Hazards and Make Sure the Safety Before Taking Action, and Confirm If the Action Results are What You Expected 3) Each Employee Should Think of Safety as "Their Own Issue" and Act Accordingly

"PASSION 2026" Targets and Fiscal 2022 Results

		FY2022 results	FY2024 targets	FY2026 targets
Occupational safety	A and B rank injuries*1	5 cases	Zero	Zero
	Frequency rate of all occupational injuries*2	2.40	1.7 or less	1.3 or less
Process safety	A, B, and C rank accidents*3	5 cases	Zero	Zero
	D1 and D2 rank accidents*3	3 cases	3 or less	3 or less

*1 Evaluation ranking of occupational injuries using Kuraray's proprietary system. Four ranks in order of seriousness: A > B > C > D.

*2 Frequency rate of all occupational injuries: Number of all occupational injuries (lost-time and no lost-time injuries) per million working hours.

*3 Evaluation ranking of process accidents using Kuraray's proprietary system. Five ranks in order of seriousness: A > B > C > D1 > D2.

Occupational Safety and Process Safety

Safety Activity Management

Based on Kuraray's Safety Activity Management Rules, the Kuraray Group develops a safety plan every fiscal year and implements it to ensure occupational safety and process safety. Specifically, at the Safety Promotion Committee attended by the President and executives in charge, we make an overall assessment and have a discussion on safety activity performance of the current fiscal year and establish an activity policy for the coming fiscal year. This policy is reflected in and implemented through specific action plans of each plant and department. A group of safety representatives from headquarters, including executives in charge of safety, visit every production site of the Group in Japan twice a year to examine their activity plans, the management of implementation progress, and the results. In addition, staff members from headquarters visit Group subsidiaries outside Japan once every three years to confirm their status*4 as well as conduct examinations via remote conferencing. We perform an overall assessment of results based on the issues found through the surveys made at each plant, the safety results for that year, and other factors. We incorporate this assessment into the formulation of company-wide policies for the next year, thereby operating a management system for safe operations.

*4 From 2020 to 2022, the verification of safety activities was conducted via web meetings remotely due to the COVID-19 situation.

Occupational Safety

The frequency rate of all occupational injuries for the Group in 2022 was 2.40 (2.05 for Group companies in Japan, 2.98 for Group companies overseas). This was an improvement over 2021, although under our target rate of below 2.0. The frequency rate for Group companies in Japan, which had been declining for three consecutive years, more than doubled year on year. On the other hand, the frequency rate for Group companies overseas improved significantly, reaching its lowest level ever. We have also introduced a unique index to assess the severity of occupational injuries using a four-level ranking, from A to D. Our target is to eliminate A and B rank (more serious) occupational injuries. There were a total of five A and B rank occupational injuries across the Group in 2022 (four B rank injuries in Japan, one B rank injury overseas); thus, we did not achieve our target of zero. The B rank injuries that occurred involved being caught or entangled in machinery, burns to eyes from chemical vapors, and scalding from contact with hot water. These issues resulted from a lack of attention to the risks of being caught or entangled or the toxic risk of chemicals and from inadequate protective measures, which we have proceeded to address. We are putting rigorous measures in place to deal with newly discovered issues as we continue to work toward safe, injury-free workplaces.

Process Safety

In 2022, Group companies in Japan experienced seven accidents involving leakage of hazardous materials or high-pressure gas, and one small-scale fire. Of these, five were relatively large accidents (rank A, B, and C according to our in-house standards). We thus fell short of our target of zero such accidents. There were three minor (D1, D2 rank) accidents (e.g., leakage of a very small amount of hazardous materials). We will continue to aim for zero relatively serious accidents, while also aiming to reduce the occurrence of minor accidents by identifying on-site risks and promoting response measures. In addition, while continuing safety audits of overseas chemical plants that started in 2019, we also formed a new Global Process Safety Management Audit Team made up of in-house experts from across the Group that started up activities in 2022. We are working to thoroughly prevent recurrence of accidents at overseas chemical plants, take steps to address issues identified through audits, and work to improve the level of safety management.