

Environmental Management

Policy and Basic Approach

The Nippon Kayaku Group's environmental initiatives play a part in the key sustainability issues of **KAYAKU Vision 2025** as a contribution to global environmental conservation, and the Group is implementing the targets laid out under its Responsible Care Policy as a key issue. In these activities, the Group complies with domestic and overseas environment-related laws, regulations, and agreements, etc., and anticipates environmental risks that will occur in product development, manufacturing processes, and business activities. These activities are a companywide initiative contributing to global environmental conservation, taking into account factors such as the reduction of environmental impact, prevention of pollution, energy conservation, climate change, resource conservation, and reduction of waste.

➤ [The Declaration on Environment, Health and Safety, and Quality](#)

Responsible Care in the Nippon Kayaku Group

All executives and employees of the Nippon Kayaku Group share the common recognition that safety is prioritized above all else, and comply with local laws and regulations both in Japan and overseas, working to prevent accidents and disasters relating to the environment and safety, in line with the Declaration on Environment, Health and Safety, and Quality.

The Nippon Kayaku Group Annual Responsible Care Policy is formulated each fiscal year based on policies that the Group believes should be continued from FY2019 onward, by reviewing targets that supplement key sustainability issues and efforts to achieve those targets, to ensure the environment, safety, and health of Nippon Kayaku itself and its domestic Group companies.

The Nippon Kayaku Group will continue to promote Responsible Care activities based on these policies.

Nippon Kayaku Group Annual Responsible Care Policy (Excerpt of policies related to the environment)

◆ Target

Serious environmental accidents / disasters: zero

◆ 1. Key issues in Responsible Care

- Companywide total Scope 1 + Scope 2 CO₂ emissions of 115,386t or less (Companywide CO₂ emission reduction rate: at least 12% compared with FY2019 levels)
- Zero emission rate: 1% or lower (Nippon Kayaku non-consolidated)

◆ 4. Activities to achieve environmental targets

- Enhancing external disclosure of climate-related information
- Strengthening of measures to reduce Scope 3 emissions (expanded requests for disclosure of emissions from raw materials, improved ton-kilometer calculation accuracy, revisions to waste generation volume calculation methods)
- Strengthened promotion of MFCA (expansion of applicable business sites)
- Proper operation of cloud-based environmental data aggregation system
- 3% annual reduction of Scope 1 + 2 CO₂ emissions at each business site
- Establishment of a method for calculating CO₂ emissions during product manufacturing
- Development of plastic waste reduction targets and implementation of measures

System

➤ [System for implementing Responsible Care](#)

Environmental Management System Certification Status

The Nippon Kayaku Group continues to acquire ISO14001 certification, the international standard for environmental management, and provides services by developing and manufacturing environmentally friendly products.

Nippon Kayaku began acquiring ISO14001 environmental management system certification in 1998, and all seven factories in Japan have obtained certification. Additionally, seven overseas group companies have obtained certification. The Group will continue considerations for acquiring ISO14001 certification for all Group companies, including those located overseas.

➤ [ISO14001 Certification](#)

Indicators

Key sustainability issues	Corresponding SDGs	Action plans	Indicators (KPI)	FY2025 Targets	FY2022 Results	FY2022 Topics for initiatives
Reducing Energy Consumption and Greenhouse Gas Emissions Reduction of Wastewater and Industrial Waste Improving Efficiency of Water Resource Use	 	<ul style="list-style-type: none"> Implement energy-saving and global warming countermeasures and achieve FY2030 environmental targets Identify issues and clarify strategies for achieving carbon neutrality by FY2050 	Greenhouse gas emissions (Scope 1+2)	(Targets to be achieved by FY2030) 88,324 tons or less (32.5% reduction or higher compared with FY2019) (Targets to be achieved by FY2022) 119,252 tons or less	108,107 tons	<ul style="list-style-type: none"> Introduction of MFCA and the solar power PPA model were promoted as a part of efforts to reduce greenhouse gas emissions Total waste produced declined by 3.3% compared with FY2021 The recycling of waste that was traditionally disposed of in landfill was further promoted, with the recycling rate improving to 85.0%, and the zero emission rate improving down to 0.8%. Development Status of Environmentally Friendly Products and Technologies [Safety Systems Business] Development of reduced weight cylinder type inflator / green propellant MGG [Polatechno Business] Improved production process, promoted reduced waste generation and emissions treatment energy through product design improvements [Functional materials] In the area of thermosetting resins for CFRP, we introduced customers to development products with potential for roll-out Developed a thermosetting resin that uses bio-derived raw material [Color materials] Developed industrial ink jet (for coated paper, flexible packaging and textile printing) Released and expanded sales of heat-sensitive non-phenol developer Accelerated development of PLA (biodegradable) textile dye [Catalysts] Promoted joint development of catalyst for hydrogen production Conversion of Asa Plant's petroleum-based boiler to LPG underway Developed catalyst that helps reduce raw material usage and improve target material yield utilizing materials informatics technologies
			VOC emissions	(Non-consolidated) Disclose results	(Non-consolidated) 38.7 tons	
			COD emissions	(Non-consolidated) Disclose results	(Non-consolidated) 171.8 tons	
			Total waste output	(Non-consolidated) Disclose results	(Non-consolidated) 27,621 tons	
			Recycling rate	(Non-consolidated) 80% or higher	(Non-consolidated) 85.0%	
			Zero emission rate	(Non-consolidated) 1% or less	(Non-consolidated) 0.8%	
			Goal setting in line with SBT and consideration and implementation of specific measures	Disclose progress	Earned A- CDP (climate change) score Implemented improvements to accuracy of Scope 3 emission calculations	
			Disclosure in Line with TCFD Recommendations	Disclose progress	Information Disclosed	
			Develop products and technologies with consideration for environmental issues	Disclose progress	Listed in Topics	

Medium-term Environmental Targets and Results

The Nippon Kayaku Group has established new medium-term environmental targets for FY2021 onward, and has started environmental conservation activities to achieve them.

In the newly established medium-term environmental targets, the scope of Scope 1+2 greenhouse gas emissions under "prevention of global warming" (32.5% reduction or higher by FY2030 compared with FY2019) has been expanded to include group companies (consolidated). Reducing emissions at a rate of around 3% every year to achieve this target, the target for FY2022 would be 119.2 thousand tons or less. Actual emissions for FY2022 were 108.1 thousand tons (a 17.4% reduction compared with FY2019), so we have achieved our target, and are steadily reducing emissions. In relation to this theme, in March 2022, the Nippon Kayaku Group endorsed the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and will continue to follow the TCFD recommendations by actively disclosing not only the state of reduction of greenhouse gas emissions, but also information on initiatives to build a sustainable, recycling-based society, such as information on risks and opportunities relating to climate change.

In the area of "reducing our chemical substance footprint," we reported both VOC emissions and COD emissions as actual results, without setting targets. VOC emissions increased slightly from the previous fiscal year, and COD emissions increased in line with changes in the items being produced.

In the area of "reduction of waste," we reported total waste produced as actual results without setting a target. For recycling rate (excluding container reuse) we have set a target of 80% or higher, and a zero emission rate of 1% or less. Total waste produced in FY2022 was lower than the previous fiscal year, as a result of continued waste separation and reduction efforts at each plant and business site. With regard to recycling rate and zero emission rate, as a result of continued recycling efforts at each business site and ongoing efforts to reduce environmental impact, we were able to not only achieve our targets for recycling rate and zero emission rate, but also improve upon them.

◆ Progress in Results for Medium-term Environmental Targets

Category	Scope	Item	Target	FY2020*1	FY2021	FY2022
Prevention of global warming*2	Consolidated	Greenhouse gases & Scope 1 & 2*3 emissions	Target for FY2030: 88,300 tons or less (32.5% reduction or more compared to FY2019) (Reference: FY2022 results): 119,200 tons or less	117,800 tons (10.0% decrease)	112,200 tons (14.2% decrease)	108,100 tons (17.4% decrease)
		Reduction of chemical substance footprint	VOC*4 (volatile organic compound) emissions COD*5 emissions	(Report results) (Report results)	33.3 tons 122.6 tons	52.1 tons 124.2 tons
Reduction of waste	Non-consolidated	Total waste produced	(Report results)	25,153 tons	28,424 tons	27,621 tons
		Recycling rate (excluding container reuse)	80% or more	81.6%	82.3%	85.0%
		Zero-emissions rate*6	1% or less	1.6%	1.0%	0.8%

*1 Includes Joetsu Plant. Note that Joetsu Plant is outside the scope of the former medium-term environmental targets established for the period up to FY2020.
 *2 Medium-term environmental targets for the period up to FY2030: Reduced by 32.5% or more (88,300 tons or less) compared to FY2019 (130,800 tons)
 *3 Scope 1: Direct emissions of greenhouse gas by the business itself (emissions from the burning of fuel, manufacturing processes, etc.)
 Scope 2: Indirect emissions from the use of power, heat and steam provided by other companies.
 *4 Tally for volatile organic compounds (VOCs) includes not only the chemical substances that are required to be reported by government ordinance (PRTR law), but also the chemical substances designated by the Japan Chemical Industry Association.
 *5 Chemical oxygen demand (COD): This refers to the amount of oxygen needed to oxidize a substance under water, and is one of the major indexes for measuring water quality.

◆ FY2022 Material Flow in Business Activities (Relevant organization: Nippon Kayaku non-consolidated)

