

# (Key Sustainability Issues)

## Improving Efficiency of Water Resource Use

### Policy and Basic Approach

Water risks can be broadly divided into two categories: the physical risks constituted by the effects of drought, flooding and pollution, and the regulatory risks stemming from tougher water quality standards, revisions to water and sewage rates, and cessation of industrial water supplies necessitating switchovers to potable water. As water is a precious resource in limited supply, its conservation is a key global sustainability issue.

The Nippon Kayaku Group manufactures products in 12 countries and regions across the globe, with water resources especially indispensable to business operations in the making of chemical products. We therefore pay heed to water conservation at all locations of Group activity, and try to make sure that no water we use is wasted.

### System

> [System for Promoting Responsible Care](#)

### Indicators

> [Environmental Management](#)

### Initiatives

#### Responding to Environmental Regulations

We have tied up various agreements between our business bases and relevant local authorities and regions. While observing our multiple environmental agreements and working on reducing environmental burdens, we also contribute to the safety and security of the local community. FY2023 saw zero violations or fines issued with respect to water quality or excessive use.

> [Number of Environmental Rule Violations](#)

#### Use of Water Resources

Indicators		Covering	Unit	2019	2020	2021	2022	2023
Amount of water taken	Waterworks	consolidated	1,000m <sup>3</sup>	706	763	805	754	566
	Surface water (industrial water)	consolidated	1,000m <sup>3</sup>	7,758	7,897	8,138	8,003	7,912
	Groundwater (well water)	consolidated	1,000m <sup>3</sup>	2,388	1,918	1,947	1,819	1,847
	Others (reservoirs, rainwater storage)	consolidated	1,000m <sup>3</sup>	0	0	68	81	79
	<b>Total<sup>*1</sup></b>	<b>consolidated</b>	<b>1,000m<sup>3</sup></b>	<b>10,852</b>	<b>10,578</b>	<b>10,958</b>	<b>10,657</b>	<b>10,404</b>
	From water-stressed regions <sup>*2</sup>	consolidated	1,000m <sup>3</sup>	36	23	33	29	28
Amount of water discharged <sup>*3</sup>	Sea areas	consolidated	1,000m <sup>3</sup>	7,374	7,014	7,142	6,726	6,966
	Rivers	consolidated	1,000m <sup>3</sup>	2,682	2,400	2,410	2,351	2,443
	Sewers	consolidated	1,000m <sup>3</sup>	928	974	987	910	1,045
	<b>Total<sup>*1</sup></b>	<b>consolidated</b>	<b>1,000m<sup>3</sup></b>	<b>10,984</b>	<b>10,388</b>	<b>10,539</b>	<b>9,987</b>	<b>10,454</b>
Amount of water recycled	consolidated	1,000m <sup>3</sup>	0	0	0	0	0	
Recycling rates	consolidated	%	0	0	0	0	0	

\*1 As figures have been rounded off, the totals in some columns do not exactly match the sum of each item above.

\*2 We have used the Aqueduct Water Risk Atlas with its 5 levels of water stress. Sites at Level 4 or above are considered "water-stressed regions."

\*3 Water of equal or higher quality is returned to the intake source

## Grasping Locations of Water-stressed Regions

In order to grasp the risks involved with the use of water resources and respond to these risks more effectively, the Nippon Kayaku Group has used the World Resources Institute's Aqueduct Water Risk Atlas to investigate the water stress conditions of its plant locations. As of end-March 2024, we were able to confirm that no plant using water for manufacturing operations is located in a high water-stress area (which, in Aqueduct terms, is the level above medium-high). For Kayaku Safety Systems (Huzhou), located in a comparatively highly-stressed area (medium-high), we have drawn up plans for periodical Core Environment, Safety and Health Checks, and are currently confirming whether water resources are being appropriately managed. From now, we will roll out such confirmatory checks to all plants in high water-stress areas, and proceed with the finalizing of our future water reduction plan.

### Water-stress Investigation Results for Nippon Kayaku Group Manufacturing and R&D sites (FY2023)\*1

Region or Country Name		Unit	Water amounts used at each water stress level				
			High	Medium-high	Medium	Low-medium	Low
Asia	Japan	1,000m <sup>3</sup> (Number of bases)	0	0	2,799 (6)	7,216 (4)	0
	China	1,000m <sup>3</sup> (Number of bases)	0	15 (1)	0	0	213 (3)
	Malaysia	1,000m <sup>3</sup> (Number of bases)	0	0	0	0	45 (1)
Europe	Czech Republic	1,000m <sup>3</sup> (Number of bases)	0	0	0	21 (1)	0
	Netherlands	1,000m <sup>3</sup> (Number of bases)	0	0	0	0	3 (1)
	UK	1,000m <sup>3</sup> (Number of bases)	0	1 (1)	0	0	0
North and Central America	America	1,000m <sup>3</sup> (Number of bases)	0	0	5 (1)	74 (1)	0
	Mexico	1,000m <sup>3</sup> (Number of bases)	12 (1)	0	0	0	0
<b>Total*2</b>		<b>1,000m<sup>3</sup>(Number of bases)</b>	<b>12 (1)</b>	<b>16 (2)</b>	<b>2,804 (7)</b>	<b>7,311 (6)</b>	<b>261 (5)</b>

\*1 We are currently using the Aqueduct Water Risk Atlas to investigate these points.

\*2 As figures have been rounded off, the totals in some columns do not exactly match the sum of each item above.

## ◆ Business Unit Initiatives

### Fukuyama Plant

#### Initiatives Aimed at Reducing Water Use

At the Fukuyama Plant, wastewater emanating from the dye production process is treated onsite, then released into the Seto Inland Sea. The plant has been producing inkjet printer dyes since the year 2000, and has consequently invested effort into improving wastewater treatment methods, looking into individual processes tailored to production type and examining numerous ways of altering production processes to lower environmental burdens.

The fruits of such activities can be seen in the form of phased reductions in contracted industrial water amounts, which fell from 24,000m<sup>3</sup> to 23,000m<sup>3</sup> per day in FY2015, and to 22,000 m<sup>3</sup> per day in FY2018. Thanks to further polishing of its wastewater treatment methods, the plant is now able to produce more on the same amounts of industrial water. It is also working on reducing the amounts of regular water used both production and equipment cleaning.

### Kayaku Safety Systems Europe

#### Introduction of Rainwater-utilizing Equipment

Kayaku Safety Systems Europe (KSE)'s capital investment activities aimed at promoting environmental protection include a water storage tank system to make effective use of rainwater. The system was introduced in 2017, and had a tank capacity of 750.5m<sup>3</sup> by FY2020. By using both rainwater and the water released by the shop floor air conditioning system for purposes other than drinking, the plant has not only achieved more efficient use of water resources but also lowered its costs.

Water reuse is currently of pivotal importance to the Czech Republic, which has seen rainfall decrease under the impact of climate change. The amount of water that KSE has stored up post-FY2020 exceeds the annual drinking amounts of all KSE employees and their families (around 4000 people). This particular project therefore marks a contribution towards a sustainable society.



Indicators	Covering	Unit	2019	2020	2021	2022	2023
Volume of water store (planned)	KSE	m <sup>3</sup>	-	4,877	5,040	5,040	5,040
Volume of water stored (actual)	KSE	m <sup>3</sup>	4,433	6,177	7,234	6,802	7,786
Economic benefits	KSE	10,000 yen	282	361	411	335	428

### Kayaku Safety Systems Mexico

#### Initiatives Aimed at Reducing Water Use

As part of its commitment to environmental conservation, Kayaku Safety Systems Mexico (KSM) has embarked upon improving its use of water resources to help resolve issues concerning limited usable water in the surrounding region. KSM mainly uses water for cleaning equipment and containers, and for manufacturing processes.

Improvement activities have involved raising standards for the production process and water treatment, and providing education to make employees more water-resource conscious. KSM's activities throughout FY2023 resulted in a 27% (2970-liter) reduction in use of water resources.