Responsible Chemicals Management

We fully leverage our long-standing expertise in chemicals management and our global network to reduce risks to human health and the environment throughout the product lifecycle and ensure public safety.

Risks

- Restrictions on the use of chemicals and increased difficulty in substitution due to regulatory tightening and inconsistencies, leading to impairment of product continuity and increased additional compliance costs
- Health impacts, environmental impacts, and operational shutdowns resulting from improper use and management of chemicals and accidents (e.g., leaks and fires), as well as supply constraints and cost increases due to tight raw material supply-demand conditions
- Non-compliance with audits, loss of business opportunities, and risks of management disruptions due to insufficient standardization and communication of hazard and information on chemicals in products

Opportunities

- Stabilized market access and differentiation through proactive regulatory anticipation, advanced assessment capabilities, and dialogue with government and industry
- Stable business operations and enhanced competitiveness through low-risk design and the development and transition to resource-efficient raw materials and processes
- Improved audit response efficiency, enhanced management accuracy, and secured preferred adoption through the standardization and digitalization of hazard and information on chemicals in products

Strategy

Development	(1) Minimize the environmental impact throughout the product lifecycle	
Evaluation and management	(3) Optimize risk assessment methods and enhance management efficiency	
	(6) Achieve zero accidents and ensure community safety	
Communication	(2) Promote the disclosure of chemical information and communication with stakeholders	
External collaboration	(4) Strengthen collaboration across the value chain	
	(5) Work closely with government, industry, and academia to strengthen policy collaboration	

Metrics, targets and results

Metrics	Targets	2025 results
CO_2 emission reduction rate for the entire lifecycle (1)	-22% 2030	17%
External evaluation of low environmental impact technologies (awards) (1)	At least one award each year	5
Evaluated Kao priority assessment substances (3)	21 substances 2030	12
Number of risk evaluation categories using animal-free testing methods (3)	1 category each year	–
Management percentage of health, environmental, and safety impacts throughout the lifecycle, from raw material procurement to disposal (6)	100% each year	98%
Continued development of a comprehensive management system for environmental and safety information related to chemical substances (6)	Continue initiatives	System development in progress
Disclosure percentage of information on the usefulness and safety of products and raw materials (2)	100% 2030	57%
Number of policies and reduction plans formulated for ingredients of high regulatory and social concern (2)	30 ingredients 2030	26
Number of stakeholder dialogues on chemical-related topics (2)	–	16
Number of educational programs (2)	–	3
Number of updates on chemical substance information in products provided to customers (4)	–	Ongoing
Number of instances of participation in public consultations (regulations / GFC*1 operations) (4)	–	6
Number of instances of information exchange with government agencies and related organizations (5)	Continue initiatives	8

Initiatives

- Develop products and processes with reduced environmental impact (1)
- Making Kao's proprietary testing methods international standards to be adopted in standard test methods and guidelines (3)
- Communication with local residents (6)
- Operating and strengthening the Kao Comprehensive Management System for Chemical Substances (6)
- Information Disclosure (2)
- Dialogue and Education (2)
- Providing information on chemicals in products (4)
- Collaboration with industry organizations (5)
- Collaboration with administrative bodies (5)

Financial impact

- Differentiation, maintaining market access and ensuring product continuity through regulatory foresight and proper management
- Reduced regulatory compliance and customer audit response costs through the standardization and digitalization of assessment and information management
- Reduced reputation and compliance-related costs through enhanced dialogue and improved transparency
- Improved access to capital by earning investor trust and supporting ESG evaluations
- Preventing major accidents and avoiding unforeseen costs through lifecycle risk management (Ongoing Management)
- Reducing the risk of supply disruptions and ensuring stable operations through traceability

Environmental and social impact

- Contributed to improving management efficiency across society through the optimization and standardization (and dissemination) of risk assessment methods
- Contributed to preventing health impacts, ensuring workplace safety, and reducing environmental risks through appropriate chemicals management and accident prevention
- Contributed to improving chemical literacy through information disclosure and dialogue
- Contributed to the development of regulatory frameworks and international harmonization through dialogue and policy recommendations

* The numbers at the end of the metrics, targets, and initiatives indicate the strategy identifiers.
*1 GFC: Global Framework on Chemicals. An international framework for chemicals management throughout their lifecycle.

Strategy

To reduce risks and create opportunities for responsible chemicals management, we are implementing strategies that are effective and contribute to business growth and solving social issues.

Social issues

For Kao to remain a sustainable and competitive entity, it is essential to have an accurate understanding of social issues. An understanding of social issues will not only mitigate business risks for Kao but will also be an important starting point for identifying new business opportunities that will drive growth. Based on this, Kao has identified the following social issues related to this theme.

- Instability in market access and product design (formulation design) due to differing chemical regulations across countries and areas
- Increasing concerns over chemical pollution and constraints on raw material resources (tight supply-demand balance and competition for use), driving the need to achieve both risk reduction and resource efficiency across the entire lifecycle
- Disruptions in supply chain management due to insufficient standardization and communication of hazard and information on chemicals in products

Risks and opportunities

In a business environment that includes the social issues described above, Kao faces various risks while also identifying new business opportunities. Identifying risks and opportunities is an important process in formulating corporate strategies and measures. The main risks and opportunities identified by Kao in this theme are as follows.

Risks

- Restrictions on usable chemicals due to the rapid tightening of chemical regulations and inconsistencies across regions, leading to increased costs for alternative development, formulation changes, and additional compliance, as well as impairment of product continuity and market access
- Improper use and management of chemicals, as well as accidents such as leaks and fires, resulting in health impacts, environmental impacts, and operational shutdowns, in addition to supply constraints and cost increases due to tight raw material supply-demand conditions
- Non-compliance with customer requirements and audits, loss of business opportunities, and risks of management disruptions due to insufficient standardization and communication of hazard and information on chemicals in products

Opportunities

- Stabilization of market access, and differentiation through proactive anticipation of regulatory trends, advanced assessment capabilities, and dialogue with authorities and industry groups
- Stable operations and strengthened competitiveness through low-risk design and the development and transition to resource-efficient raw materials and processes
- Improved audit response efficiency, enhanced management accuracy, and preferred adoption by customers through the standardization and digitalization of hazard and information on chemicals in products

Strategy

To support the realization of the basic policy of the Mid-term Plan K27 to become an essential company in a sustainable world and the implementation of the *Global Sharp Top* strategy to effectively address global customer challenges in key focus areas, Kao will enhance responsible chemicals management. Centered on science-based assessment, information disclosure, and dialogue with stakeholders, we will implement these practices across our business operations in approximately 140 countries and regions, our 36 production sites (including 26 outside Japan), and our supply chains spanning Asia, Europe, and the Americas. Through these efforts, we aim to contribute to solving social issues while enhancing brand loyalty based on trust from customers and society, accelerating business expansion in global markets, and supporting sustainable business growth through stable operations, differentiation, and improved capital efficiency and profitability.

(1) Minimize the environmental impact throughout the product lifecycle

We optimize the entire value chain—from raw material procurement to development, manufacturing, logistics, use, collection, and recycling—while steadily reducing environmental impacts through a product lifecycle perspective and green and sustainable chemistry. Through circular design and process innovation, we enhance competitiveness in key focus areas, leading to differentiation and stable operations.

Related initiative: P309 Advancement of methods for understanding and assessing ecological impacts, P310 Improving efficiency of pesticide application and reducing environmental impact through functional spreaders

(2) Promote the disclosure of chemicals information and communication with stakeholders

We ensure compliance with regulations in each country and region while providing clear and accessible information on the chemical substances contained in our products. By expanding

dialogue globally with consumers, customers, suppliers, local communities, and academic institutions, we enhance transparency and credibility and promote the appropriate use of chemicals. In addition, by providing standardised information, we aim to streamline customer service operations and reduce response times, thereby helping to control related costs.

Related initiatives: P309 Policy and framework development (GFC), P310 Communication for sharing practical knowledge with local communities and industry, P310 Education and awareness: Promoting understanding through dialogue with the next generation and local communities

(3) Optimize risk assessment methods and enhance management efficiency

By advancing risk-based management based on chemical properties and exposure, we continuously refine our methods in response to social expectations and regulatory trends. By utilizing advanced approaches, including alternative methods to animal testing, we achieve both high evaluation accuracy and operational efficiency, enabling rapid compliance with regional regulations and the creation of differentiated products.

Related initiatives: P309 Policy and framework development (GFC), P309 Advancement of methods for understanding and assessing ecological impacts, P310 Communication for sharing practical knowledge with local communities and industry

(4) Strengthen collaboration across the value chain

We strengthen traceability and information sharing across the value chain—from raw material procurement to disposal and collection—and steadily reduce risks through joint evaluation and continuous improvement with partners. By promoting responsible sourcing, appropriate use, and collaboration in collection and recycling, we support the growth of Kao's key business domains that drive global expansion, while optimizing stable supply, quality, and cost efficiency.

Related initiatives: P309 Strengthening information sharing across the value chain, P310 Communication for sharing practical knowledge with local communities and industry

(5) Work closely with government, industry, and academia to strengthen policy collaboration

We promote constructive dialogue with government, industry associations, and academia to advance science-based regulatory frameworks and international harmonization, thereby supporting the development of healthy markets and industries that contribute to solving social challenges. By fostering a predictable and fair market environment, we reduce uncertainties in business operations while expanding the delivery of high value-added solutions driven by science.

Related initiatives: P309 Policy and framework development (GFC), P309 Advancement of methods for understanding and assessing ecological impacts

(6) Achieve zero accidents and ensure community safety

Across the Kao Group, we operate EHS* and process safety management based on the characteristics of chemicals and production processes under global standards and thoroughly implement preventive risk assessments, training and maintenance, and emergency response systems. In addition, by collaborating with local communities where our business sites are located, we strengthen resilience and enhance trust from society, thereby reinforcing the foundation for sustainable growth.

* EHS: Initiatives to systematically manage risks from the perspectives of Environment, Health, and Safety in order to ensure sustainable business operations and maintain social trust.

Impact generated by implementing the strategies

We believe that the aforementioned strategies will create the following financial, environmental and social impacts.

Financial impact

- Differentiation, maintaining market access and ensuring product continuity through regulatory foresight and proper management
- Reduced regulatory compliance and customer audit response costs through the standardization and digitalization of assessment and information management
- Reduced reputation and compliance-related costs through enhanced dialogue and improved transparency
- Improved access to capital by earning investor trust and supporting ESG evaluations
- Preventing major accidents and avoiding unforeseen costs through lifecycle risk management (Ongoing Management)
- Reducing the risk of supply disruptions and ensuring stable operations through traceability

Environmental and social impact

- Contributed to improving management efficiency across society through the optimization and standardization (i.e. dissemination) of risk assessment methods
- Contributed to preventing health impacts, ensuring a safe and secure workplace, and reducing environmental risks through appropriate chemicals management and accident prevention
- Contributed to improving chemical literacy through information disclosure and dialogue
- Contributed to the development of regulatory frameworks and international harmonization through dialogue and policy recommendations

Strategic resilience

Kao demonstrates high resilience through two different scenario analyses related to chemicals management. In a scenario assuming ever-tightening global chemical regulations and deteriorating environment, we will ensure the responsiveness by developing environmentally friendly products and processes, securing raw materials and eliminating accidents. Meanwhile, in a scenario where chemical regulations develop differently by country and region, and stakeholders grow more conscious, we will strategically address the developments by appropriately assessing risks, tracking regulatory trends, improving transparency and strengthening relationships. These approaches enable sustainable growth and business continuity under any circumstances.

Scenario analysis trial in chemicals management

In the fields of climate change and biodiversity, scenario analyses based on the TCFD*1 and TNFD*2 frameworks are being conducted. By applying these precedents to conduct our own scenario analysis regarding chemicals management, we examined how much impact the related risks and opportunities would have on Kao under the assumed scenarios, and particularly what strategies would be effective to build resilience against risks.

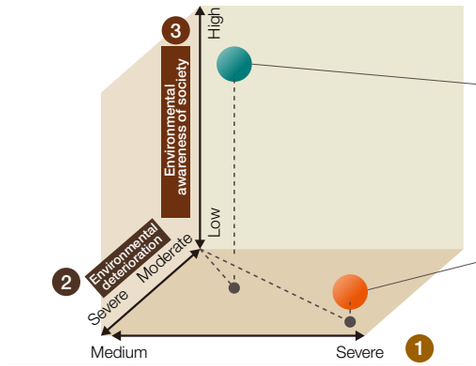
In the field of chemicals management, although a framework has not yet been established, we have attempted to create and analyze scenarios by referring to the SSP scenario,*3 in addition to the TCFD and TNFD frameworks.

The factors influencing risks are broad and involve uncertainty. Materializing risks may vary significantly, depending on potential factors such as environmental, regulatory and social external trends. For this reason, we decided to select multiple factors in external environments that are likely to be important from a medium-term perspective—instead of narrowing down to one factor or scenario—draw up multiple scenarios based on the difference in the change in those factors, and examine the scenarios.

As important factors for creating scenarios, we identified the progress of chemical regulations (the level of introduced regulations and global spread), the degree of deterioration of the global environment and the level of increase in society's environmental awareness. In a three-dimensional space based on these three factors, we created scenarios for two points at opposite poles, naming them Scenario A and Scenario B, respectively (Figure: Scenario elements and assumed scenarios). We believe that by creating opposite scenarios and assessing impacts of their respective risks, we can derive strategies that will work no matter how the external environment changes in the future, contributing to Kao's resilience.

*1 TCFD: Task Force on Climate-related Financial Disclosures
*2 TNFD: Taskforce on Nature-related Financial Disclosures
*3 SSP: Shared Socioeconomic Pathways. A scenario to assess the effect of climate change, which has been developed in collaboration with the National Institute for Environmental Studies, Pacific Northwest National Laboratory, Planbureau voor de Leefomgeving, International Institute for Applied Systems Analysis, and Potsdam Institute for Climate Impact Research

Scenario elements and assumed scenarios



Scenario A

- Chemical regulations vary geographically
- Social awareness of sustainability is high and company activities are strictly scrutinized
- Climate change and biodiversity loss are suppressed to a certain level

Scenario B

- Chemical regulations on a hazard basis have spread globally
- Social awareness of sustainability is low and environmental deterioration is progressing
- Naturally derived resources are depleted due to abnormal weather and natural disasters, and supply chain disruptions are occurring

In each scenario, we estimated the degree of risk impact for Kao. In addition, we examined which strategies would be effective if these risks were to materialize in each scenario, and the results are shown in the table below.

Scenario analysis (Estimation of the risk probability and effective strategies in each scenario)

	Item	Risks for Kao	Regulations differing globally / Enhanced social awareness (Scenario A)	Severe regulations / Environmental deterioration (Scenario B)
			Influence in each scenario	
Environmental changes	Climate change (increased natural disasters due to temperature rises, increase in energy costs, etc.) and biodiversity loss	Suspension of plant operation	M	VH
		Division of the supply chain	M	VH
		Rising raw materials prices	H	VH
		Lack or unavailability of naturally derived resources	M	H
Policies, laws and regulations	Introduction of environmental taxes such as a carbon tax	Increase in the price of petrochemical raw materials	M	VH
	Development of a recycling system, requirement and obligation for environment monitoring	Burden of expenses for system architecture, monitoring, etc.	M	H
	Strengthening hazard-based chemical regulations	Increase in the number of chemicals that can no longer be used, loss of business opportunities due to product performance degradation or discontinuation	H	VH
	Inconsistency among global regulations	Response to regulations that differ among EU countries, other developed countries, and developing countries	VH	L
Markets	Increasing environmental awareness / ethical preferences of consumers	Loss of brand value and decline in the share	VH	L
	Growing demands from external ratings firms and investors	Loss of corporate value due to lack of information disclosure	VH	M
	Growing demand from distributors	Decline in sales due to reduced transaction volume	VH	M
Reputation	Reputation of specific chemicals / Reputation of companies as greenwashing companies	Loss of opportunities to sell products	H	M
		Decrease in brand value / corporate value	VH	M
		Litigation risks	H	H

(VH: Very heavy, H: Heavy, M: Medium, L: Low)

Effective strategies in each scenario

Scenario A

Appropriate assessment of chemical substances, understanding of regulatory trends, and strategic use of chemicals

Earn trust from society through effective communication

Scenario B

Develop products and processes with reduced environmental impact

Realize stable operations and zero chemical accident

In Scenario A, where global variation in chemicals management regulation and strong sustainability awareness among stakeholders results in closer scrutiny of corporate activities, it is essential to use chemicals strategically based on the risk assessment results and regulatory trends. Furthermore, we would need to enhance our transparency and communication to gain trust from stakeholders. Additionally, in Scenario B, where global regulatory tightening and insufficient public awareness result in further environmental deterioration, we believe it is crucial to develop environmentally friendly products and processes, ensure stable operations and procurement of raw materials, and eliminate accidents caused by chemicals. Based on the strategies derived from these scenario analyses, we have decided to proactively and more strategically advance initiatives that focus on reducing environmental impact, appropriately assessing chemical risks, preventing accidents, and engaging in dialogue with stakeholders based on usefulness and reliability.

By adopting an approach that considers a wide range of factors to examine the scenarios, we were able to derive strategies based on a multifaceted anticipation of various future possibilities. This has initiated resilient approaches to address a wide range of risks in Kao's chemicals management.

* Chemical information, safety information, legal information, volume and application information, etc.

Metrics and targets

To improve the effectiveness of our strategies, we have established performance metrics related to risks and opportunities, and we regularly monitor progress. We have set targets for the metrics related to particularly important risks and opportunities, and by confirming our progress toward these targets, we continuously implement improvements through the PDCA cycle and steadily promote our initiatives.

Targets and progress

Strategy	Metrics	Results 2021	2022	2023	2024	2025	Mid- to long-term targets: Target value	Year
(2)	Percentage of chemical products and raw materials with disclosed information on benefits and safety to ensure safe usage for our customers	14% (10%)*	29% (25%)*	38% (30%)*	48% (40%)*	57%	100%	2030
(6)	Percentage of areas where the impacts on health, environment and safety from chemicals are managed responsibly and sustainably while considering their stages from raw material procurement to disposal	96%	98%	93%	96%	98%	100%	Yearly

* The figures in parentheses represent the annual progress targets.

We have successfully implemented the action plan for 2025. In Metric 1 (Strategy (2)), we selected and assessed chemical substances while taking into account their impacts on human health and the environment, as well as significance in business, and disclosed the result in planned manner*1. In Metric 2 (Strategy (6)), we assessed health risks from chemicals for employees at handling sites in 10 plants in Japan and implemented the necessary management measures*2, maintaining a high level of performance again this year.

In addition, we strengthened dialogue with stakeholders and enhanced the dissemination of information on risks, while also engaging in rulemaking processes such as participation in public consultation related to the Global Framework on Chemicals (GFC). Through these efforts, we contributed to risk reduction and the strengthening of compliance, as well as the reduction of response costs and the expansion of business opportunities.

*1 List of safety summaries https://chemical.kao.com/jp/sustainability/saicm/article_05/
*2 SDS preparation, database development, risk assessment and management, and workplace labeling

Metrics and results (External relationships)

Strategy	Metrics	Results			
		2022	2023	2024	2025
(2)	Number of chemical-related engagements with stakeholders	4 times	5 times	9 times	16 times
(2)	Number of student communication and class packages using consumer-centered approaches	2 times	2 times	2 times	5 times
(4)	Number of updates to information on chemicals contained in products provided to customers	0 times	2 times	2 times	2 times
(5)	Number of chemical-related awards won	8 times	8 times	4 times	5 times
(5)	Number of chemical-related information exchanges with government agencies	4 times	6 times	5 times	8 times
(5)	Number of public consultations attended on regulatory tightening and GFC implementation	4 times	2 times	4 times	6 times
(5) (6)	Continue building a central management system for environmental and safety information related to chemicals	Ongoing	Ongoing	Ongoing	Ongoing

* Our initiatives emphasize social impact rather than being measured by frequency.

Governance

Product Quality Management Division serves as the primary department responsible for chemicals management, with support from the Chemical Stewardship Steering Committee chaired by the Senior Executive Officer of Product Quality Management. Under this committee, the entire company works together to enhance our chemicals management practices through the GFC Promotion Committee.

The GFC Promotion Committee meets four times a year to discuss policies and measures for chemicals management throughout the product lifecycle. The committee is chaired by the Senior Executive Officer overseeing Product Quality Management and systematically promotes inter-divisional efforts.

In 2025, we also discussed strategic initiatives in light of domestic and international developments related to the Global Framework on Chemicals (GFC). Furthermore, through the GFC External Experts Council, which includes knowledgeable external members, we integrate third-party perspectives and receive advice on chemicals management and specific initiatives.

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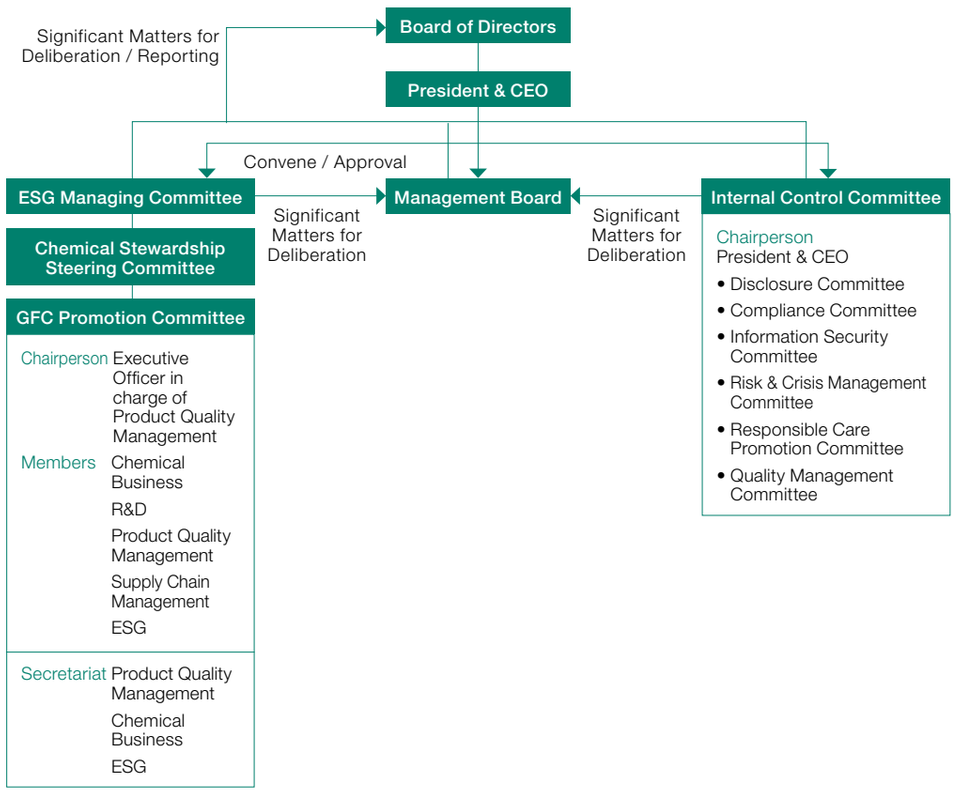
Framework for promoting responsible chemicals management activities



Risk and opportunity management

Policies

Kao has established the following operational and decision-making guidelines to implement responsible chemicals management. For details, please see the website.

Responsible Chemicals Management Promotion Policy

Management process

To address risks and opportunities that arise as we endeavor to manage chemicals in a responsible manner, we practice the following management procedure based on the PDCA (Plan, Do, Check and Act) cycle to ensure steady improvement.

P (Planning)

In December, the GFC Promotion Committee discusses the next fiscal year's activity plans for the five teams, which are subsequently approved by the chair.

D (Implementation)

Please refer to our initiatives (P309-310).

C (Evaluation of results)

The GFC Promotion Committee checks the progress (four times a year) and the GFC External Experts Council provides third-party viewpoints to properly track and assess the progress (twice a year).*1 The progress is reported at least once a year to the ESG Managing Committee, Management Board or Executive Officers Meeting.

*1 The evaluation criteria consist of the committee OKR, the five teams' OKRs and published KPIs. The progress is reported to the committee chair.

A (Corrective action)

Annual activities are reported to the GFC Promotion Committee, where any necessary corrections and modifications are applied (December).*2

*2 Approved by the committee chair.

Initiatives

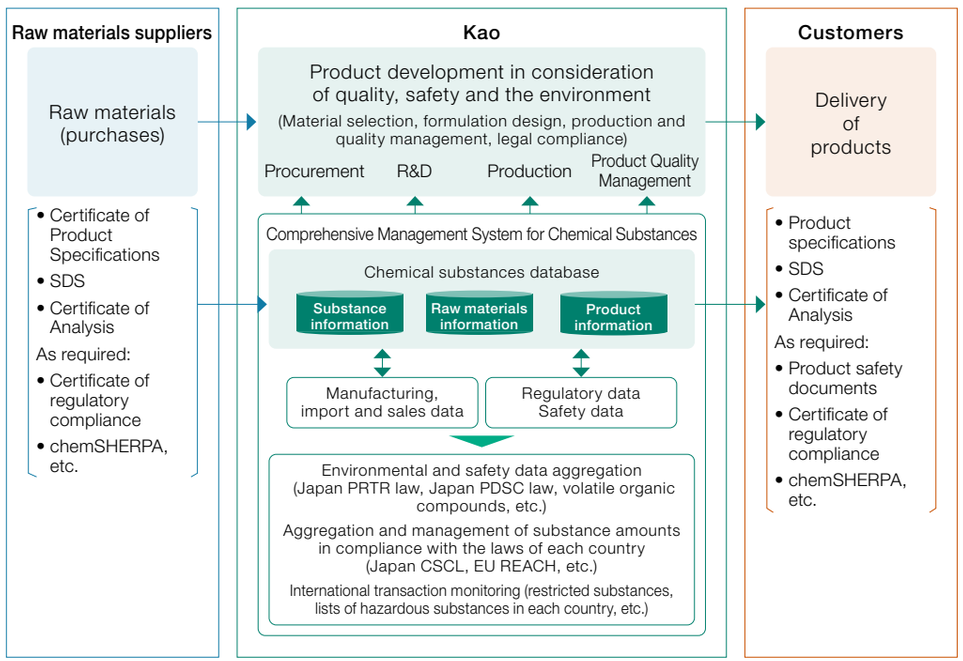
Kao is engaged in a variety of initiatives to manage chemicals in a responsible manner. These initiatives are based on the aforementioned strategies and are being promoted in coordination to achieve our goals. Here, we would like to introduce some of the important initiatives from among the many we are undertaking.

In addition to strengthening its chemical substance management framework, Kao has developed and operates its own Comprehensive Management System for Chemical Substances as a supporting tool. The system maintains a database of information on raw materials, products, and the chemical substances they contain, and is used to manage safety and regulatory information.

When an issue arises with a raw material, the system enables Kao to rapidly search for relevant information and identify the scope of the impact so that appropriate action can be taken. By shortening response times and improving operational efficiency, the system also helps control related costs.

Going forward, Kao will continue to enhance the system infrastructure and its functions in response to global trends in chemical substance-related laws and regulations and changes in the business environment.

Comprehensive Management System for Chemical Substances



	Strategy	Initiatives		
Development	(1) Minimize the environmental impact throughout the product lifecycle	Present initiatives contributing to biodiversity restoration at the 21st Policy Dialogue on Chemicals and the Environment, gaining support and recognition from participants • Reduce pesticide use and costs, and improve the pesticide use environment through the use of surfactant-based adjuvants for agricultural chemicals • Example of efficient utilization of oil and fat resources (Developing Bio IOS, a surfactant that effectively utilizes oil and fat resources)	Develop products and processes with reduced environmental impact and promote related information provision and evaluation • Kao Receives “Incentive Award” in the 24th Green and Sustainable Chemistry Awards ~ Industrial Production of Gallic Acid by fermentative production ~ • Received the 52nd Minister of the Environment Award: Room-temperature cleaning agent contributing to CO_2 reduction • Received the 57th JCIA Technology Award: Technology for improving the appearance of concrete surfaces	
Evaluation and management	(3) Optimize risk assessment methods and enhance management efficiency	Explore the application of environmental RNA analysis to enhance the accuracy of ecosystem assessments The 21st Policy Dialogue on Chemicals and the Environment	Evaluate Kao priority assessment substances Disclose safety summaries for Kao priority assessment substances Kao’s Safety Summary of Chemicals for priority risk assessment	Assess and manage risks to health, the environment, and safety throughout the entire process, from raw material procurement to disposal
	(6) Achieve zero accidents and ensure community safety	Provide information on SDS management methods and risk assessment approaches essential for autonomous chemicals management by companies Learning from Kao’s Autonomous Chemicals Management and Proprietary Risk Assessment Model	Assess and manage risks to health, the environment, and safety posed by chemical substances throughout the product lifecycle	Provide information on initiatives toward establishing the Kao Wakayama Plant and Research Laboratories as a biodiversity model factory Japan Chemical Industry Association “RC Grand Prize”
Communication	(2) Promote the disclosure of chemical information and communication with stakeholders	Disclose safety summaries for Kao priority assessment substances: 40 cases Receive the JCIA JIPS Award for nine consecutive years Kao Receives JCIA’s JIPS Award for the ninth consecutive year for initiatives supporting peace of mind in product use	Engage in dialogue on chemicals management with the next generation Hygiene and public health training at the School of Medicine, Teikyo University • PBL programs at the Faculty of Life Sciences, Tokyo University of Pharmacy and Life Sciences • Textiles Advisor training at Kyoritsu Women’s University and Japan Women’s University	Engage in dialogue on chemicals management with local governments and residents Workshops (Secrets of Foam) and panel discussions at the Sumida Tsukisai Festival
External collaboration	(4) Strengthen collaboration across the value chain	Provide information on chemical substances contained in products: Participate in initiatives to more efficiently utilize data obtained through chemSHERPA-CI by joining a consortium for a next-generation platform (CMP) that enables the collective transmission of product chemical and resource circulation information across the entire supply chain	GHS-compliant SDS and product labeling	Information provision and sharing via a private network
	(5) Work closely with government, industry, and academia to strengthen policy collaboration	International collaboration (UNEP GFC) • Promote proposals for the international standardization of Kao’s GFC indicators • Contribute to the development of operational rules at the 1st OEWG (June 2025) and other forums • Participate in working groups to support the development of GFC operational rules - IOMC - List of Participants for IP1 Workshop	Domestic collaboration (government) • Strengthen collaboration and provide information for policy discussions by presenting Kao case studies at the Policy Dialogue on Chemicals and the Environment ・Contributing to biodiversity through chemicals management ・Report on participation in the first meeting of the GFC open-ended working group (information disclosure and communication)	Domestic collaboration (industry) • Provide information to raise awareness of the GFC in Japan Network for Strategic Response on International Chemical Management “Column: Insights from Experts” • JETOC 45th Anniversary Commemorative Lecture • The Chemical Daily “Chemical Management Step-Up Seminar”

Policy and framework development (GFC)

Region: Global
Corresponding strategies: (2) (3) (5)

Kao contributes to initiatives that support rule development and social implementation by collaborating with government agencies and industry organizations to strengthen the operation of the GFC and further enhance its effectiveness. At the international level, participation in multiple GFC-related working groups enables the provision of proposals based on practical knowledge in the chemicals and consumer goods sectors, ensuring that industry initiatives grounded in scientific evidence are appropriately evaluated. For example, at the OEWG*1 held in June 2025, proposed indicators were explicitly reflected in official meeting documents, demonstrating concrete contributions to international discussions.

In Japan, Kao continues to contribute to government-related platforms and awareness-raising through external seminars. In addition, by participating as a committee member in the Policy Dialogue on Chemicals and the Environment, along with the presentation of key issues, the company helps to strengthen collaboration among government, industry, and academia and accelerating implementation.

Through these efforts, visibility into regulatory trends is enhanced, leading to improved reliability in regulatory responses, minimized additional compliance measures and associated costs, and enhanced corporate value through the effective operation of practical frameworks.

*1 Open-Ended Working Group: A forum for preparing the implementation and operation of the GFC.

Strengthening information sharing across the value chain

Region: Global
Corresponding strategies: (4)

Kao is strengthening systems for the standardization, updating, and communication of information on chemicals in products and hazard information to promote appropriate chemicals management across the supply chain for its industrial products (primarily for business customers). Specifically, Kao uses chemSHERPA-CI, an industry-standard communication format, to efficiently and accurately provide the necessary information on chemicals in products to business partners, while conducting biannual updates to reflect the latest regulatory developments. In addition, in 2025, Kao joined the CMP Consortium, a next-generation platform for collectively communicating information on chemicals in products and resource circulation across the supply chain, and is working on data integration through the platform. These initiatives aim to streamline information sharing across the entire supply chain and speed up customer response times, thereby helping to reduce associated costs by alleviating the workload associated with audit compliance and information provision.

Kao also continues to prepare and update SDS*2 and product labels in compliance with the GHS*3 in each country and region to ensure that industrial products are used appropriately in accordance with applicable laws and regulations. In Japan, Kao is advancing SDS revisions in response to regulatory changes and promptly providing them to customers to support appropriate use and regulatory compliance across the supply chain. Furthermore, Kao shares SDS, chemSHERPA-CI, and other information online with distributors through a dedicated network, monitors issues and requests through two-way communication via training sessions, briefings, and face-to-face meetings with major distributors, and reflects them in improvements. These initiatives enhance the reliability of our audit processes and our ability to meet client requirements, thereby reducing the risk of discrepancies and delays in transactions. Furthermore, by streamlining information sharing and regulatory compliance whilst reducing the operational workload, they help to minimise associated costs.

*2 Safety Data Sheet: A document that provides information on the hazards of chemicals contained in a product and precautions for handling.
*3 Globally Harmonized System of Classification and Labelling of Chemicals: A system that classifies chemicals according to their hazards and recommends globally harmonized rules for labeling and the provision of safety data sheets so that hazards can be easily understood.

Advancement of methods for understanding and assessing ecological impacts

Region: Global
Corresponding strategies: (1) (3) (5)

Kao develops methods and accumulates knowledge for understanding and assessing ecological impacts to enhance chemicals management while considering biodiversity. By applying environmental RNA technologies to understand and evaluate the impacts of

chemical substances on ecosystems, methodologies are examined to verify the validity of existing management approaches and identify areas for improvement.

In addition, through joint research with the University of Tokyo, assessments of the effects of UV filters using live coral organisms are being advanced, contributing to the accumulation of scientific knowledge on impacts to marine ecosystems. These insights are applied to improve the understanding of environmental impacts and enhance risk assessment, thereby supporting the verification and improvement of chemicals management practices and by streamlining the evaluation process, we are helping to reduce the workload and shorten response times.

Improving efficiency of pesticide application and reducing environmental impact through functional spreaders

Region: Global
Corresponding strategies: (1)

Kao contributes to stabilizing the effectiveness of pesticides by using functional spreaders (adjuvants) based on its surface control technologies, which promote the spread and penetration of spray solutions even on highly hydrophobic crop leaves and on pests and pathogens. In addition, to address challenges such as droplet evaporation, drying, and drift in drone-based spraying, technologies such as the suppression of droplet evaporation are being developed to help ensure that spray solutions are reliably delivered to crops. Through these efforts, improvements in the efficiency of spraying operations, as well as reductions in uneven application and drift, are achieved, leading to reduced impacts on the surrounding environment and lower exposure levels. It also helps to optimise resource utilisation by improving spraying efficiency.

Communication for sharing practical knowledge with local communities and industry

Region: Global
Corresponding strategies: (2) (3) (4)

Kao promotes the sharing of practical knowledge that supports the identification and reduction of risks at sites handling chemicals by communicating with local communities and industry. Based on the implementation of risk assessment and management measures at chemical handling sites, practical examples of assessment methods and management approaches were introduced in online seminars to serve as references for external business operators. Through these efforts, Kao aims to share approaches to risk identification rooted in on-site implementation and contribute to enhancing appropriate chemicals management capabilities across society. We are also working to awarness that will help improve the efficiency of risk management in the field.

Education and awareness: Promoting understanding through dialogue with the next generation and local communities

Region: Japan
Corresponding strategy: (2)

Kao creates opportunities for dialogue with the next generation and local communities to promote understanding of chemicals management. Through collaboration in university project-based learning (PBL)*4 programs and public health practice*5 courses, perspectives and information on the appropriate use and management of chemicals are provided in response to students' research and discussions from a corporate standpoint, along with an exchange of views with students. In addition, at the community event "Tsukisai" held at the Sumida Office in Tokyo, hands-on learning opportunities were offered for elementary school students to experience the mechanisms and safety of chemistry using familiar products through workshops and other activities.

*4 Industry-government-academia collaborative PBL Course, School of Life Sciences, Tokyo University of Pharmacy and Life Sciences
*5 Hygiene and Public Health Practice Course, School of Medicine, Teikyo University

Employees' opinions

Our approach to chemicals management: Earning trust through science-based assessment and disclosure

Akiyo Kameyama
Safety Science Research Office 3
Kao Corporation

Risks to human health and the environment from chemicals should be managed not only based on their inherent hazards, but also by taking exposure levels into account. As part of our promotion activities Global Framework on Chemicals (GFC, formerly SAICM), we have been identifying Kao Priority Assessment Chemicals since 2013, based on their significance to Kao's business activities. We obtain hazard information based on the latest scientific knowledge and conduct risk assessments by carefully estimating human and the environmental exposure throughout the lifecycle—from product use to disposal and release. The results are compiled into safety summaries and disclosed to experts and businesses that handle chemicals. These efforts have been recognized through consecutive awards since 2016 in the JIPS Awards of the Japan Chemical Industry Association, which honor member companies demonstrating outstanding activities in the preparation and disclosure of safety summaries for chemical products. This recognition reflects the high evaluation of Kao's efforts to promote the GFC promotion activities. Going forward, through our chemicals management activities, we will continue to ensure that stakeholders can benefit from chemicals safely.

Stakeholder engagement

Expectations for shifting from biological to ecological impact assessment

Masaru Kitano
Chairman
Akikusa Gakuen Junior College

It goes without saying that modern society cannot function without the presence of chemicals. At the same time, chemicals are a “double-edged sword,” since it is true that their careless handling has adversely affected human health and organisms in the environment (ecosystems) in the past. Under the basic policy of responsible chemicals management, Kao has long made efforts to maximize the benefits of chemicals while firmly ensuring their safety. I would like to express my sincere respect for these efforts.

The Responsible Chemicals Management Promotion Policy consists of five elements. In this message, I would like to focus in particular on biodiversity, which is closely related to environmental impact, and highlight Kao’s initiatives in conjunction with its separately disclosed “Basic Policy on Biodiversity.” With regard to biodiversity, the Convention on Biological Diversity was opened for signature by governments at the United Nations Conference on Environment and Development (the Earth Summit) held in Rio de Janeiro, Brazil, in June 1992. The objectives of this convention were:

(1) The conservation of biological diversity;
(2) The sustainable use of its components; and
(3) The fair and equitable sharing of benefits arising from the utilization of genetic resources.

Why, then, is biodiversity necessary? The answer may be summarized as follows:
(1) Living organisms on Earth, including humans, exist in a complex and interdependent relationship with the natural environment, including the climate, weather, topography, and soil, as well as with one another, as seen in food chains, and thereby must maintain a delicate balance; and
(2) The sudden loss of a species may adversely affect ecosystems that had up to that point sustained this delicate balance.

At present, ecological risk assessments of chemicals in relation to biodiversity are conducted at the pre-market review stage by evaluating individual species located at different trophic levels within the food chains that constitute their ecosystems. The primary reason for this approach is the technical difficulty of directly assessing impacts on entire ecosystems at the pre-assessment stage. Therefore, post-market management plays a critical role in the ecological risk assessment of chemicals.

Kao revised its Basic Policy on Biodiversity in April 2022. The policy consists of the following:

1. Identify our business’s dependence and impact on biodiversity across our value chain.
2. Minimize the impact of our business activities on biodiversity.
3. Develop and implement innovative technologies to enable sustainable use of the benefits nature provides.
4. Comply with relevant international agreements.
5. Conduct business activities without damaging the local ecosystem.
6. Raise awareness about biodiversity in and outside the company, and share information on biodiversity across all stakeholders to maximize the effects of collaboration.
7. Collaborate with external stakeholders to take actions to protect and restore biodiversity, and regenerate nature.
8. Aim for a harmonious coexistence of people, nature and chemicals.

I highly commend Kao’s research on ecological risk assessments using environmental RNA, as it further strengthens and solidifies the company’s Basic Policy on Biodiversity. While the methodology is highly specialized and therefore not discussed here, I look forward to its further development in the future.

Meanwhile, the initiative at the Wakayama Plant and Research Laboratories, titled “Initiatives to Build a Biodiversity Model Factory Connecting History and the Environment

to the Future," received the 19th Responsible Care Grand Prize from the Japan Chemical Industry Association. According to an overview of the initiative, a coastal protection forest that has existed since the Edo period remains at the Wakayama site. By investigating its historical and ecological value, identifying challenges, and promoting maintenance activities that do not rely on chemical spraying, Kao has worked to restore its unique ecosystem. In addition, I believe that the company's efforts to widely communicate the historical, disaster mitigation, and ecological value of the forest, as well as to promote communication both internally and externally, were also key factors in its recognition by the Japan Chemical Industry Association.

As a leading company in the chemical industry, I look forward to Kao further advancing its efforts in *Yoki-Monozukuri*.