

## Kao's approach

Kao is actively engaged in sound chemical management by using science-based risk assessment and risk management procedures in order to use and produce chemicals in ways that minimize their significant adverse effects on human health and the environment. This management conforms to the Strategic Approach to International Chemicals Management (SAICM) across the product lifecycle from development and production to use and disposal, aiming to contribute to the realization of a sustainable society.

## Kao's creating value to address social issues

Member countries at the World Summit on Sustainable Development (WSSD) held in 2002 adopted the international WSSD 2020 goals, which include the goal of sound chemical management, "aiming to achieve, by 2020, that chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment, using transparent, science-based risk assessment procedures and risk management procedures, taking into account the precautionary approach." Toward this goal, at the first International Conference on Chemicals Management (ICCM) held in 2006, member countries established the Strategic Approach to International Chemicals Management (SAICM), consisting of a High-Level Declaration, Overarching Policy Strategy and Global Plan of Action, which was approved by the United Nations Environment Programme (UNEP).

We handle many types of chemical substances from raw materials to final products, and we have always strived to soundly manage the chemical substances that we use and manufacture. In 2001, we established our own **Comprehensive Management System for Chemical Substances** to soundly manage chemical substances, including

quality management of raw materials and products, compliance with laws and regulations in each country, and safety assurance. Based on the global trend of more rigorous management of chemical substances, including adoption of SAICM, we set medium-term objectives including "active implementation of SAICM to promote sound chemical management" in the Kao Environmental Statement released in 2009. In 2012, we established the **SAICM Promotion Committee** to achieve effective implementation of SAICM.

Through our SAICM promotion activities, we are engaged in the sound management of chemical substances across the product lifecycle from development and production to use and disposal, aiming to contribute to the realization of a sustainable society.

### Contributions to the SDGs



## Policies

We handle a wide range of chemical substances from consumer to industrial products, and have always engaged in thorough chemical management. In addition, we are promoting and strengthening management of chemical substances based on the internationally established SAICM in order to use chemical substances more safely and soundly. We formulated our **SAICM Promotion Policy** in 2013. It defines our company-wide management policy for chemical substances and forms the basis of our management of chemical substances.

### SAICM Promotion Policy

1. Development and Use of Safer and More Valuable Chemicals, and the Development of Manufacturing Processes with Less Environmental Impact
2. Chemicals Management throughout the Entire Life Cycle of Chemicals based on Scientific Risk Assessment
3. Compliance with Laws and Regulations on Chemicals and Voluntary Standards, and the Promotion of International Cooperation and Collaboration
4. Promotion of Risk Communications with Stakeholders



→ SAICM Promotion Policy  
<http://www.kao.com/global/en/sustainability/environment/statement-policy/statement/saicm-policy/>

# Chemical substances management 103-1,103-2,103-3

Kao's approach

Our initiatives

## Framework

To achieve accelerated implementation of initiatives for SAICM, we established the SAICM Promotion Committee in 2012 under the Sustainability Committee chaired by the President and CEO. The SAICM Promotion Committee is comprised of top-level management in the Product Quality Management Division, Chemical Business Division, R&D Division, SCM Division and Corporate Strategy Division.

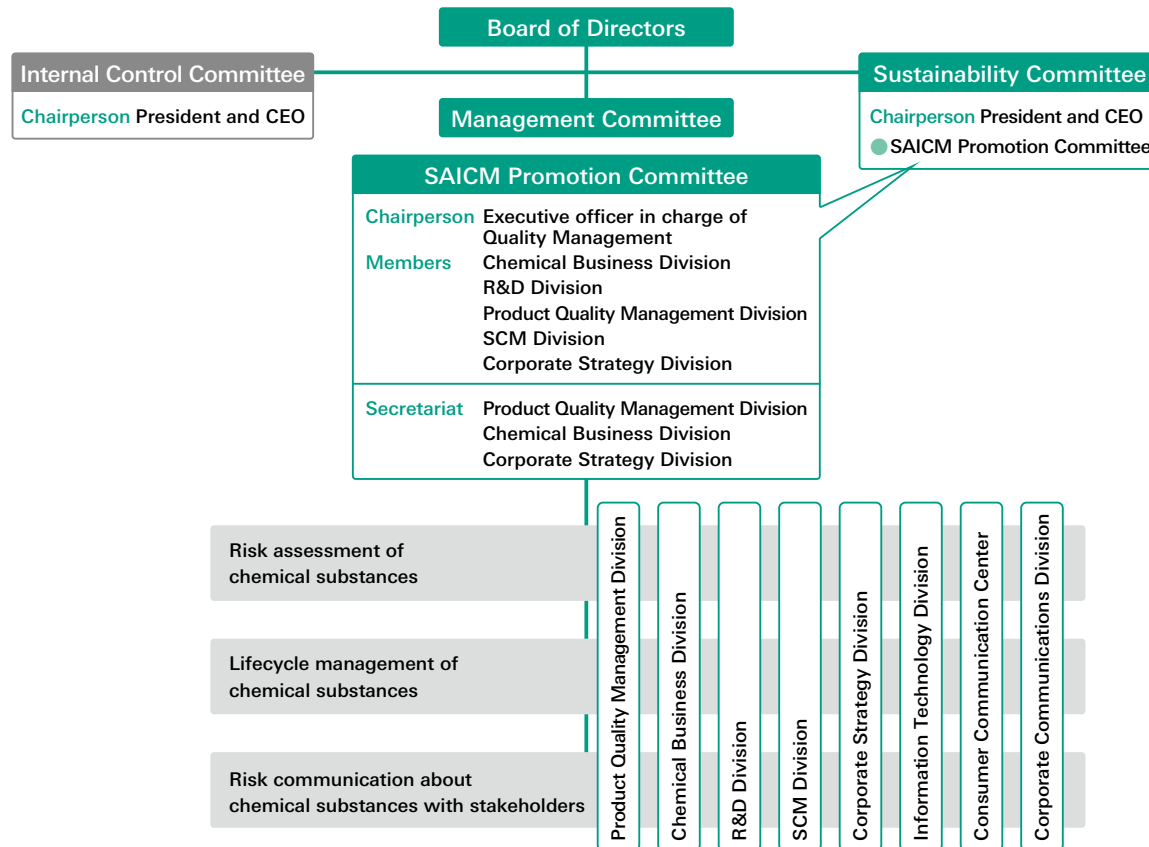
The three major SAICM promotion activities at the SAICM Promotion Committee are:

1. Risk assessment of chemical substances
2. Lifecycle management of chemical substances
3. Risk communication about chemical substances with stakeholders

We have established and are implementing projects for each of these activities under the committee.

Under the Responsible Care promotion system, we are also promoting activities to reduce emissions of volatile organic compounds (VOCs) and other substances subject to the PRTR system.

SAICM Promotion Framework



\* As of December 2017.



→ p. 185 Governance > Responsible care activities/Framework

Conservation

Community

Corporate Culture

Governance

## Comprehensive Management System for Chemical Substances

To ensure the safety and assurance of consumer and industrial products, in 2001 we created the Comprehensive Management System for Chemical Substances, which gives uniform Kao Group codes (Master Index) to individual products and raw materials. The system breaks down and registers raw materials by their constituent ingredients. This enables to immediately verify, for each product, which raw materials are used and their quality, safety, anti-bacterial grade, regulatory and other information. If a problem with a raw material arises, or if risk from a new substance of concern emerges, the extent of the effect can be immediately identified so that appropriate action can be taken.

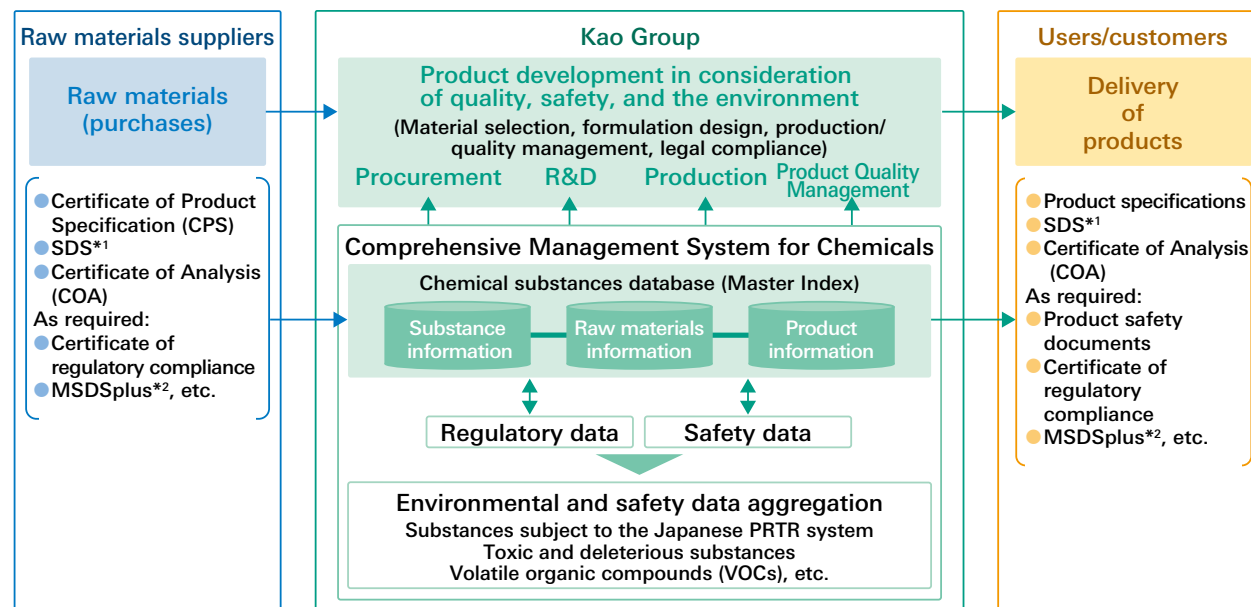
In 2017, we substantially expanded the features of the system. This has achieved a reliable and sound integrated management for chemical substances that will facilitate even stronger compliance.

With the Consumer Products Business, which encompasses a wide range of product fields, and the Chemical Business based in materials development, we handle a large number of chemical substances as the Kao Group. To comply with various legal and environmental regulations in an increasingly globalized and borderless world, we have created our own criteria for categories including Banned Substances, Reduction Targeted Substances and

Caution in Handling Substances. The criteria serve as control gates when registering substances in the database.

Based on integrated management by members with specialized expertise, data collected in the Comprehensive Management System for Chemical Substances are shared among Kao Group divisions. We are actively engaged in sound chemical management on a company-wide basis.

Kao Comprehensive Management System for Chemical Substances



\*1 SDS

Safety Data Sheet. Document providing information to ensure safe and appropriate handling of chemicals, such as names of substances contained in the product, information about potential hazards and handling precautions.

\*2 MSDSplus

Data sheet applied to specific types of chemical substances.

# Chemical substances management 404-2

Kao's approach

Our initiatives

## Education and promotion

We publish the details of our SAICM promotion activities and safety summaries of Kao priority assessment substances for which we have conducted a risk assessment. We then release this information on the Kao and Kao Chemicals websites to communicate it inside and outside Kao.

The SCM Division has created educational programs for current and new employees and internal transfers, which are structured by field of specialization and level of experience. The curriculum includes information on the risks and hazards of chemical substances.

We also provide education and information to researchers and employees at Kao and partner companies involved in development of consumer products, chemical products and base materials. We hold informational sessions on chemical substances management each year. In 2017, 274 people participated in these sessions.

## Collaboration with stakeholders

To deepen understanding about social trends and stakeholder demands to companies concerning chemical substances management, and to obtain feedback on our SAICM promotion activities, we regularly invite outside experts to give presentations and exchange opinions in meetings of the SAICM Promotion Committee. We held these presentations and opinion exchanges in 2017 as well.

In addition, we are an active participant in the Japan Initiative of Product Stewardship (JIPS\*), a voluntary initiative aimed at strengthening management of chemical substances based on the product stewardship advocated by the International Council of Chemical Associations (ICCA). The Japan Chemical Industry Association has been implementing the initiative since 2009, and it reflects an effort by the chemical industry to make a major contribution toward SAICM.

We also cooperate with government initiatives together with countries in Asia for the management of chemical substances and actively participate in opinion exchanges with government authorities inside and outside Japan.

\*JIPS

A voluntary initiative based on Global Product Strategy (GPS) principles for enhancing global management of chemical substances promoted by the International Council of Chemical Associations (ICCA) in response to the adoption of SAICM.

Conservation

Community

Corporate Culture

Governance

## Mid- to long-term targets and performance

**Mid- to long-term targets** We have set the following mid- to long-term targets aiming to realize a sustainable society.

### 1. Risk assessment of chemical substances

We select Kao priority assessment substances taking into consideration factors such as the quantity manufactured and used, the exposure amount for people and the environment, and priority in our corporate activities. We have set the following targets for conducting these risk assessments and engaging in sound chemical management.

- Conduct risk assessments for the Kao priority assessment substances (19 categories) by 2020 and continue this activity after 2020.

\*GPS Safety Summary

A document providing a summary of chemical substance safety information as reference for the general public. Besides information about physical and chemical properties, this document also addresses the usage and processing requirements for sound risk management and outlines risk management measures. It is also used to disseminate information to downstream users.

### 2. Lifecycle management of chemical substances

We have set the following targets at workplaces where chemical substances are handled to prevent adverse health impacts on workers.

- Conduct risk assessments and implement corresponding measures at workplaces where chemical substances are handled by 2020, and continue to conduct risk assessments for new chemical substances and implement corresponding measures after 2020.

### 3. Risk communication about chemical substances with stakeholders

We have set the following targets for communicating safety information throughout the supply chain for chemical products that we manufacture and use, and for ensuring safety, sound use and the ability to take necessary action pertaining to chemical substances.

- Release the safety summaries for 20 substances for Kao priority risk assessment substances by 2020 and continue this activity after 2020.
- Release GPS Safety Summaries\* for 150 chemical products by 2020 and continue this activity after 2020.

## Performance in 2017

The SAICM Promotion Committee set the following project targets for 2017 and conducted activities accordingly.

### 1. Risk assessment of chemical substances

- Conduct risk assessments and create risk assessment reports for Kao priority assessment substances in line with the medium-term plan.
- Build the foundation of a lifecycle management system for chemical substances.

### 2. Lifecycle management of chemical substances

- Plan and implement risk reduction measures based on risk assessments at workplaces where chemical substances are handled.
- GHS\* hazardous labeling at workplaces where chemical substances are handled.

\*GHS

Globally Harmonized System of Classification and Labelling of Chemicals.

### 3. Risk communication about chemical substances with stakeholders

- Publicly release the deliverables of SAICM promotion activities results.
- Study communication with stakeholders.



→ p. 48-49 Our initiatives: >  
[Risk assessment of chemical substances/ Lifecycle management of chemical substances/Risk communication about chemical substances with stakeholders](#)

- To address issues related to legal compliance for chemical substances, the safety of chemical substances and the environment, we have strengthened our compliance with legal regulations globally for chemical products, the activities we conduct for sound chemical management throughout the supply chain by providing information on chemical products, and our import and export management of chemical products.

- We continued to conduct emissions management of substances subject to the Japanese PRTR system and VOCs as well as initiatives to prevent air pollution.

## Our initiatives

### Risk assessment of chemical substances

#### 1. Conduct risk assessments and create risk assessment reports for Kao priority assessment substances in line with the medium-term plan

In 2017, we completed risk assessments for Kao priority assessment substances in three categories scheduled in 2017 (cumulative total of 15 categories) according to the medium-term plan, and compiled the results in risk assessment reports. Risk was within a tolerable level for all three categories.

#### 2. Build the foundation of a lifecycle management system for chemical substances

We are studying how to build the foundation for a more advanced lifecycle management system for chemical substances based on the Comprehensive Management System for Chemical Substances, with a focus on building a global volume tracking management system for chemical substances and rebuilding the Safety Data Sheets (SDS) creation and management system.

### Lifecycle management of chemical substances

#### 1. Plan and implement risk reduction measures based on risk assessments at workplaces where chemical substances are handled

We conduct risk assessments at workplaces where chemical substances are handled using the combination between the qualitative risk assessment method (the conventional control banding method\*1) and the quantitative method with ECETOC TRA\*2 tool which has been identified by the EU's REACH\*3 regulation as a preferred approach for risk assessment.

The amended Industrial Safety and Health Act in Japan went into force in June 2016. According to this law, we are continuing to conduct risk assessments and adopt risk mitigation measures for working procedures which have newly adopted or changed.

In 2017, we began studying how to incorporate risk assessments into the product development process to ensure that risk assessments of new working procedures are conducted.

For existing working procedures, we have decided the highest risk rank in each manufacturing area and have begun implementing corresponding risk mitigation measures.

#### 2. GHS hazardous labeling at workplaces where chemical substances are handled

To ensure that workers can check the hazards for chemical substances before handled, since 2016 we have displayed GHS labels at sampling, filling and other workplace areas inside plants that handle chemical substances. We completed labeling at two of nine plants in Japan by 2017. We will continue the labeling program to cover all other plants in Japan.

\*1 Control banding method

A method of assessing the risks of health hazards associated with chemical substances. This is the method for managing chemical substances designed by the International Labour Organization (ILO) that incorporates simple and practical risk assessment methods and it is intended to protect the health of workers in small and medium-sized companies in developing countries from hazardous chemicals. For each process that requires handling of hazardous chemicals, risks are ranked into four levels according to three components: the hazardousness of the chemical, its form (volatility/risk of becoming airborne), and the amount being handled. In addition to indicating general management items to be implemented in each category, this tool also makes it possible to indicate more specific items to be implemented with regards to other general work tasks.

\*2 ECETOC TRA (European Centre for Ecotoxicology and Toxicology of Chemicals Targeted Risk Assessment).

A risk assessment tool used in REACH, the EU system for registering chemical substances. Able to obtain the risk determination as well as risk management direction.

\*3 REACH

Registration, Evaluation, Authorization and Restriction of Chemicals (EU system).

## Risk communication about chemical substances with stakeholders

### 1. Public disclosure of SAICM promotion activities results

We compile the results of risk assessments we conduct as safety summaries and publicly disclose them.

In 2017, we additionally released safety summaries for three chemicals for Kao priority assessment substances (cumulative total of 13 summaries). Moreover, we released 18 GPS Safety Summaries for Kao chemical products (cumulative total of 125 summaries).



→ GPS Safety Summary  
<http://chemical.kao.com/global/products/gps/>

In 2017, we received the JIPS award from the Chemicals Management Committee of the Japan Chemical Industry Association in recognition of having disclosed the most GPS Safety Summaries of any company in 2016 and demonstrated excellence in JIPS initiatives.



p. 52 Our initiatives: Providing information on chemical products for sound chemical management/Topic: Kao Corporation's Chemical Business unit receives JIPS Award

### 2. Study communication with stakeholders

We have begun face-to-face communication activities with stakeholders.

In 2017, we held the Secrets of Useful Everyday Products events as part of the 17th Kanagawa Science Summer, a series of science-related events for children held in Kanagawa Prefecture, for the purpose of creating understanding for the following.

- Chemical products used in our daily life are made by leveraging the various properties of chemical substances.
- Chemical substances can have adverse impacts on human health and the environment if used improperly.
- Kao evaluates dose and response of each chemical substances and confirm these substances do not have concerned effects on human health and the environment during the product lifecycles.

Over two days, 100 parent and child participants learned about the properties and functions of ingredients in body wash by doing science experiments. "I learned that Kao is taking care of the product impacts on human health and the Earth's environment. Now I want to think about the amounts we use and how we use them," commented a participant. We created understanding for the importance of risk management by having people experience the utility of chemical substances through real science experiments using everyday materials and communicating in easy-to-understand language.

Through various activities, we will continue to build understanding for chemical substances and raise awareness for the importance of risk management.



→ For details of communication with raw materials suppliers and corporate customers, refer to p. 51 Our initiatives: Providing information on chemical products for sound chemical management

## Approach to issues of chemical substances related to legal compliance safety and the environment

### Global compliance with chemical regulations

The Kao Group is registering the chemical substances contained in the Kao products manufactured outside Japan and in the other Kao products directly and indirectly exported outside Japan according to the quantities and hazard levels, based on the chemical regulations of the relevant countries.

#### Europe

In the EU, REACH (European regulations on chemical substances) requires registration of all chemical substances manufactured or imported in quantities of one ton or more per year. With close cooperation, Kao Chemicals Europe (KCE) and Kao has prioritized substances for registration each year and conducted registration.

We have identified all substances required for registration and 87% of the substances were completed the registration by the end of 2017. We plan to finish registration of all substances without delay by the final registration deadline at the end of May 2018.

#### Americas

In the United States, the TSCA\*<sup>1</sup> was amended in June 2016. There are no major changes in the notification process for new chemical substances. We are taking corresponding actions for tightened assessment of new chemical substances and ensure the required submissions.

The inventory notification rule went into effect in August 2017 based on the amended TSCA. Conforming to this rule, we will conduct the notifications by the 2018 deadline for chemical substances manufactured and imported to the United States during the time period defined.

#### Asia (China, South Korea, Taiwan, Thailand, Vietnam)

China and other countries and regions in Asia are also moving quickly to make registration mandatory for products corresponding to new chemical substances and hazardous chemical products. As the Kao Group, we are working together with local Kao companies to submit the relevant notifications before manufacture or import of these products.

Since 2010, the Provisions on Environmental Administration of New Chemical Substances (also known as China REACH) in China has required registration of newly manufactured and imported chemical substances. Registration of products containing hazardous chemicals is also becoming more rigorous under the other Law. In cooperation with local Kao companies in China including Kao (China) Holding, we completed registration before manufacture or import of the target substances. In 2018, we will monitor enactment of related new legislation and amendments of the current law and share this information with the relevant divisions to comply with the legal regulations without delay. As for the hazardous chemical products whose expiration dates are nearing in 2018 and beyond, we have started to update registrations in cooperation with local Kao companies in China.

In South Korea, after the Act on the Registration and Evaluation of Chemicals (K-REACH)\*<sup>2</sup> came into force in 2014, we took actions to comply with the legal requirements, including registering and reporting quantities for new and existing chemical substances. Through our South Korean agent, we are participating in two consortiums on existing chemical substances subject to registration and taking actions accordingly for the registration deadline of June 2018. Currently (as of December 2017), a partial amendment of K-REACH has been announced and is expected to require re-registration of all existing chemical substances manufactured and imported in quantities of one ton or more per year (similar to the EU's REACH). We will monitor the situation and take actions as needed.

In Taiwan, following the Toxic Chemical Substance Control Act we have calculated the total quantities every two months and submitted reports for chemical substances manufactured or imported in excess of 100 kg per year in cooperation with Kao Taiwan. For the draft of phase one existing chemical substances subject to registration announced at the end of 2017, we plan to take actions as needed in cooperation with Kao Taiwan and the Chemical Business Division.



In Thailand, the government announced the preparation of an existing chemical substances inventory and registration system for new chemical substances in August 2015. The registration system for new chemical substances does not yet have a timeline. For the existing chemical substances inventory, we continue to submit notifications in cooperation with Kao Industrial (Thailand). We have created a list of the required products and completed preliminary notifications almost on schedule, mainly for products that we have a record of handling. We will continue to monitor announcements on the registration system for new chemical substances and the existing chemical substances inventory, and plan to prepare notifications and take the appropriate steps for existing products and chemical substances as our secondary response.

Vietnam is preparing an existing chemical substances inventory based on its Law on Chemicals. A draft inventory was announced in March 2017 and subsequent additional announcements are scheduled. We are planning additional notifications in cooperation with Kao Vietnam.

In addition, we are taking the requisite steps to comply with laws on the manufacture, import and use of chemical substances in Indonesia, Malaysia, the Philippines and Singapore.

\*1 TSCA  
Toxic Substance Control Act of the United States.  
\*2 The Act on the Registration and Evaluation of Chemicals (K-REACH)  
The Act on the Registration and Evaluation of Chemicals of South Korea.

## Providing information on chemical products for sound chemical management

Kao communicates safety information for chemical products to ensure safety related to chemical substances throughout the supply chain and to ensure that the chemical substances are used appropriately and any necessary actions are taken.

### 1. GHS-compliant SDS and product labeling

We issue GHS-compliant SDS for chemical products in countries that have introduced GHS as well as GHS-compliant product labeling.

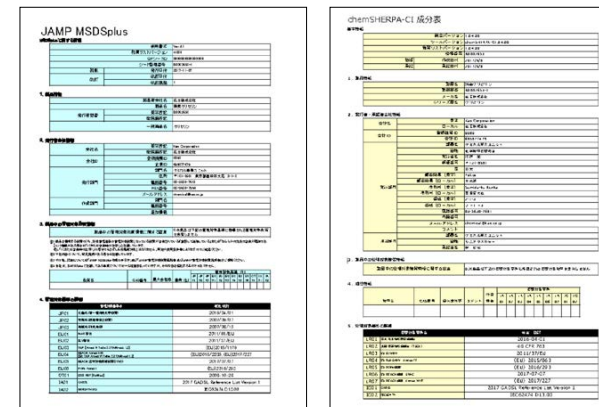
For the Chemical Business including at Kao Japan and Asian affiliates, we have created GHS-compliant SDS and product labels as well as conducting integrated management using the Comprehensive Management System for Chemical Substances since 2008.

In 2017, we continue to use GHS labeling for products marketed in countries and regions that have introduced GHS (Japan, EU, U.S., Taiwan, South Korea, China, Singapore, Thailand, Indonesia, Vietnam and Malaysia) from our plants in Japan and Asia. We have also begun studying labeling corresponding to the export destination when we export products from our European plants to Asia.

In 2018, we will continue to monitor trends in countries that have introduced GHS and promote creation and issuance of SDS and product labeling to facilitate global trade.

### 2. Providing and obtaining information on chemicals in products

To comply with increasingly stringent regulations in various countries as well as industry standards, we proactively manage the chemical substances contained in chemical products (management of products containing chemical substances). We are a founding member of JAMP\*1 and efficiently manage and communicate information on products containing chemical substances on an ongoing basis using the standardized form provided by JAMP.



Examples of MSDSplus output (left) and chemSHERPA output (right) for a Kao chemical product

In January 2017, a revised version of MSDSplus was issued (Substances List Ver. 4.070). We distributed this version to customers via sales distributors and disclosed it on the Kao chemical website. Similarly, we have prepared the most up-to-date versions of MSDSplus for products of Asian affiliates and released them in English and Chinese on the affiliates' websites.

Meanwhile, a new information communication scheme for products containing chemical substances called chemSHERPA\*<sup>2</sup>, led the development by the Japanese Ministry of Economy, Trade and Industry (METI) has been handled its operation by JAMP since April 2016. In September 2017, we led the industry in switching to the revised version of chemSHERPA-CI\*<sup>3</sup> (Substance List Ver. 1.04.00). We have published the current chemSHERPA-CI on our websites in Japanese, English and Chinese, and we have also voluntarily distributed it to customers via sales distributors.


We will continue to cooperate with the relevant internal and external divisions and groups and actively engage in initiatives to promote improvements and to strengthen management of products containing chemical substances in the supply chain.

### 3. Disclosure of risk information on chemical substances (GPS Safety Summaries)

We are an active participant in the Japan Initiative of Product Stewardship (JIPS), a voluntary initiative aimed at strengthening management of chemical substances through product stewardship advocated by the International Council of Chemical Associations (ICCA). The Japan Chemical Industry Association has been implementing the initiative since 2009, which constitutes an effort by the chemical industry to make a major contribution toward SAICM. To this end, we have been actively engaging in communication related to chemical substances with customers.

We have always been proactive in providing SDS, chemSHERPA and eSDS\*<sup>4</sup> for European disclosure of chemical products as part of our chemical substance communications. In recent years, we have proactively made GPS Safety Summaries available on the Kao Chemicals website and ICCA's GPS Chemicals Portal

to outline, in an easy-to-understand manner, hazard information and information on product risks. We consider publication of GPS Safety Summaries an important element of risk communication on chemical substances with stakeholders, which constitutes part of our SAICM promotion activities.

 → GPS Safety Summary

- Kao Chemical website  
<http://chemical.kao.com/global/products/gps/>
- ICCA's GPS Chemicals Portal  
<http://icca.cefic.org/en/Home/Global-Product-Strategy/global-product-strategy/chemical-information-search/?t=ByCompanyName&v=kao&ft=ByCompanyName&fv=kao>

As the results of risk assessment, in 2017 we published safety summaries on the Kao Chemicals website for Kao priority assessment substances. We prepared 18 GPS Safety Summaries in Japanese and English for chemical products related to these substances and released them on the Kao Chemicals website and ICCA's GPS Chemicals Portal. We also prepared and published two GPS Safety Summaries for products with REACH registration. With this, the Kao Group has published a total of 125 GPS Safety Summaries globally, the most of any company in Japan since last year.

In 2018, we will continue to publish GPS Safety Summaries and engage in risk communication with customers and with the wider society on a global basis.

\*1 JAMP  
Joint Article Management Promotion-consortium.  
\*2 chemSHERPA

A new scheme that facilitates sharing information on chemical substances in products across the entire supply chain to address broadening regulations and appropriately manage chemical

substances contained in products on an ongoing basis.


➡ chemSHERPA website  
<https://chemsherpa.net/chemSHERPA/english/>

\*3 chemSHERPA-CI

A chemical product data form sheet for communicating information on specified chemical substances corresponding to MSDSplus.

\*4 eSDS

An extended Safety Data Sheet (SDS). Adds risk appraisal and risk management content to the conventional SDS.

 p. 98 Community > Communication with corporate customers (Chemical Business)

### Topic Kao Corporation's Chemical Business unit receives JIPS Award

In February 2017, Kao Corporation's Chemical Business unit received the JIPS Award.

The JIPS Award was established by the Chemicals Management Committee of the Japan Chemical Industry Association (JCIA) in 2017 to recognize companies that have demonstrated excellence in voluntary GPS/JIPS activities for chemicals management throughout the supply chain.

We received this award in recognition of having released the most GPS Safety Summaries of any company in 2016 and of our proactive pursuit of chemical substance management.

During the acceptance speech at the awards ceremony, the senior manager of business

implementation, Chemical Business Unit, described our disclosure plans at affiliated companies in Japan, Asia, Europe and the Americas.



Awards ceremony

# Chemical substances management 305-7

## Strengthening export and import management of chemical products

As the Chemical Business globalizes at an increasingly fast pace, the need to introduce a system for import and export management has risen sharply. This includes the need to automatically check legal regulations during importing and exporting at Kao companies related to the Chemical Business, and requests from inside and outside Kao to strengthen our system of checks in order to comply with legal regulations.

We have been making preparations aiming to introduce a new import and export management system at all Kao companies related to the Chemical Business by 2018. We, however, introduced the system at Kao companies related to the Chemical Business in the United States in 2016, based on the described needs. We followed this by completing introduction of the system at companies related to the Chemical Business in Europe and Asia in 2017 (total of 11 countries) and have begun system operations.

## Activities relating to legal compliance in Japan

### 1. Compliance with the Chemical Substances Control Law

The Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law) mandates reporting on product quantities by usage application. We continued to survey detailed usage information on chemical products in 2017 with the cooperation of sales distributors and we are maintaining the most up-to-date information.

To provide information to customers and sales distributors for the Priority Assessment Chemical Substances that were added under the law in 2017, we revised the SDS for the target chemical products.

In 2018, we will continue to survey and update usage information on chemical products with the cooperation of sales distributors and to provide information on the Priority Assessment Chemical Substances for the target chemical products.

### 2. Compliance with the Industrial Safety and Health Act

For the substances with mandated labeling and notification added under the Industrial Safety and Health Act, which was amended in 2017, we revised the SDS for the target chemical products and provided the SDS to the relevant customers and sales distributors. In 2018, we will continue to take steps to comply with the substances added to the Industrial Safety and Health Act.

Kao's approach

Our initiatives

## Emission Management of Chemicals

### Monitoring and controlling emissions of chemical substances subject to the Japanese PRTR system

We began activities by setting the voluntary target of annual emissions of one ton or less for each substance from each plant in FY 2000. We achieved this target in FY 2002. Since then, we have continued to achieve this voluntary target, excluding leaks of fluorinated gases and similar emissions.

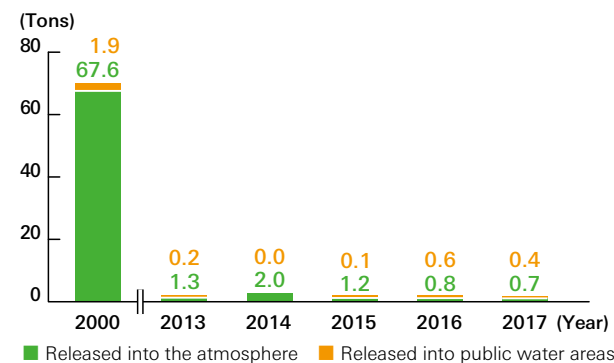
The number of chemical substances subject to the Japanese PRTR system of which Kao handled over one ton in 2017 was 75, and the total discharge of such substances into the atmosphere and public water areas was 1.1 tons. In addition, we are voluntarily monitoring and controlling releases and transfers (in the same way as would be done for chemical substances subject to PRTR) of chemical substances that the Japan Chemical Industry Association has specified as being subject to voluntary surveys.



→ For details, refer to List of Emissions of Substances Subject to PRTR System

<http://www.kao.com/global/en/sustainability/environment/activity-data/chemical-management/>

Total emissions of chemical substances subject to the PRTR system



Conservation

Community

Corporate Culture

Governance

# Chemical substances management 305-7

Kao's approach

Our initiatives

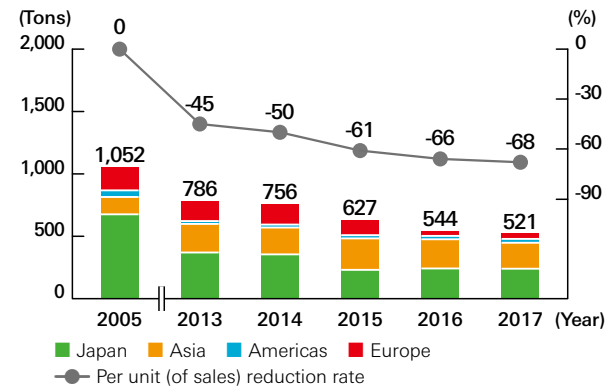
## Management of volatile organic compounds (VOC) emissions

Although Kao has no facilities subject to the VOC emission regulations provided in the Air Pollution Control Act, we work to voluntarily cut VOC emissions.

For the 100 VOC substances defined in the notice of the Director General of the Environmental Management Bureau, Ministry of the Environment, we set voluntary targets on the annual atmospheric emissions volume from each plant for each substance (5 tons or less in 2005, 3 tons or less in 2009, 1 ton or less in 2010), conducted emission reduction activities and accomplished our targets. We are managing VOC emissions with the current target of maintaining our activities.

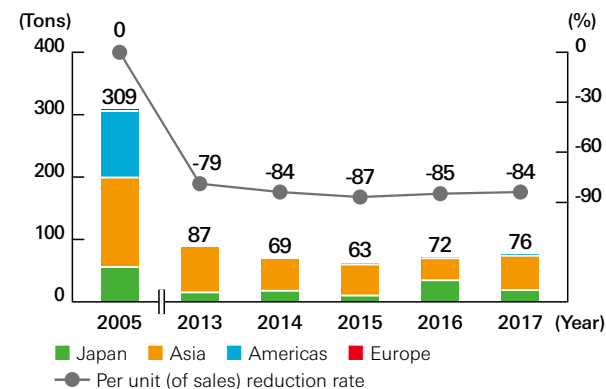
The Kao Group in Japan handled 34 types of VOCs in quantities over 1 ton in 2017, with total emissions into the atmosphere of 9 tons.

NOx emissions



\*Boundary: All Kao Group production sites.  
 \*Assurance provided for NOx emission figures.  
 \*Per unit of sales is calculated based on Japanese standards up to fiscal 2015, and on International Financial Reporting Standards (IFRS) from fiscal 2016.

SOx emissions



\*Boundary: All Kao Group production sites.  
 \*Per unit of sales is calculated based on Japanese standards up to fiscal 2015, and on International Financial Reporting Standards (IFRS) from fiscal 2016.

## Efforts during use

### Efforts in the Chemical Business

PDF → p. 101 Community > Communication with corporate customers (Chemical Business)/Our initiatives: Kao products that contribute to the conservation of the environment globally

PDF → p. 101 Community > Communication with corporate customers (Chemical Business)/Our initiatives: Topic "Water-based inkjet ink and high-performance specialty thickener *Visco Top* receive award"

Conservation

Community

Corporate Culture

Governance