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We appropriately manage chemicals using science-based risk assessment and risk management procedures across the entire product lifecycle from development and production through to use and disposal, aiming to minimize their significant adverse effects on human health and the environment. We will promote responsible chemicals management and contribute to the sustainability of society based on the Kirei Lifestyle Plan.

Kao's creating value to address social issues

Social issues we are aware of

Chemicals foster our fulfilling lifestyles and are essential for the satisfaction and enrichment of the lives of people globally. On the other hand, chemical substances can have negative impact on human and the environment.

Member countries at the World Summit on Sustainable Development (WSSD^{*1}) held in 2002 adopted the international goals of "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 [for chemicals], taking into account the precautionary approach." These objectives are known as the WSSD 2020 Goals. Toward this goal, the Strategic Approach to International Chemicals Management (SAICM^{*2}) was formulated in 2006 and approved by the United Nations Environment Programme (UNEP).

We are aware, however, that this goal may not be achieved around the world despite efforts by individual countries and regions, and even greater actions have been called for in the lead-up to 2030.^{*3}

- *1 WSSD
World Summit on Sustainable Development
- *2 SAICM
Strategic Approach to International Chemicals Management
- *3 From Global Chemicals Outlook II (UNEP, United Nations Environment Programme, 2019)

Kao's creating value

In line with the global trend toward more rigorous chemicals management, we set medium-term objectives including "active implementation of sound chemicals management in accordance with SAICM" in the Kao Environmental Statement released in 2009.

In 2012, we established the company-wide SAICM Promotion Committee, and we have been working to further enhance chemicals management, including the strengthening of the foundations provided by our own Comprehensive Management System for Chemical Substances, which we developed ourselves to apply to our own operations.

Going forward, we will contribute to realization of a sustainable society based on the Kirei Lifestyle Plan, our ESG Strategy, which raised responsible chemicals management as a priority topic.

Contributions to the SDGs



Risks related to realization of our vision by 2030

If chemicals are not properly managed, they can possibly cause adverse effects on human health and the environment, which could make it difficult to continue our business.

Opportunities related to realization of our vision by 2030

By promoting responsible chemicals management, we will contribute to realization of a sustainable society and secure opportunities to earn the trust of society, and obtain competitive advantage.

Policies

Kao handles a wide range of chemicals from industrial products to consumer products, and has always engaged in thorough chemicals management. In addition, we are promoting and strengthening chemicals management based on the internationally established SAICM.

We formulated our SAICM Promotion Policy in 2013. It defines our company-wide management policy for chemicals and forms the basis of our chemicals management.

Going forward, we will promote responsible chemicals management as a priority topic under the ESG Strategy announced in April 2019.

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
www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/saicm-policy.pdf

Education and promotion

As a part of our chemicals management, we provide lessons and lectures by outside experts on an ongoing basis, mainly for workers who handle chemicals, to reinforce proper understanding of chemicals management.

Collaboration and engagement with stakeholders

We provide chemical information relating to product safety to customers and consumers and promote responsible chemicals management along with stakeholders by collaborating and communicating with industry, administrative bodies, outside experts, outside professionals, and others depending on the subject.

Framework

To accelerate implementation of initiatives aimed at realizing the SAICM objectives, we established the SAICM Promotion Committee in 2012 under the Sustainability Committee (now the ESG Committee) chaired by the President and CEO.

The SAICM Promotion Committee, which reports to the President and CEO, is chaired by the Managing Executive Officer responsible for overseeing the Product Quality Management Division, and it is comprised of top-level management in the Product Quality Management Division, Chemical Business Division, R&D Division, SCM Division, and ESG Division.

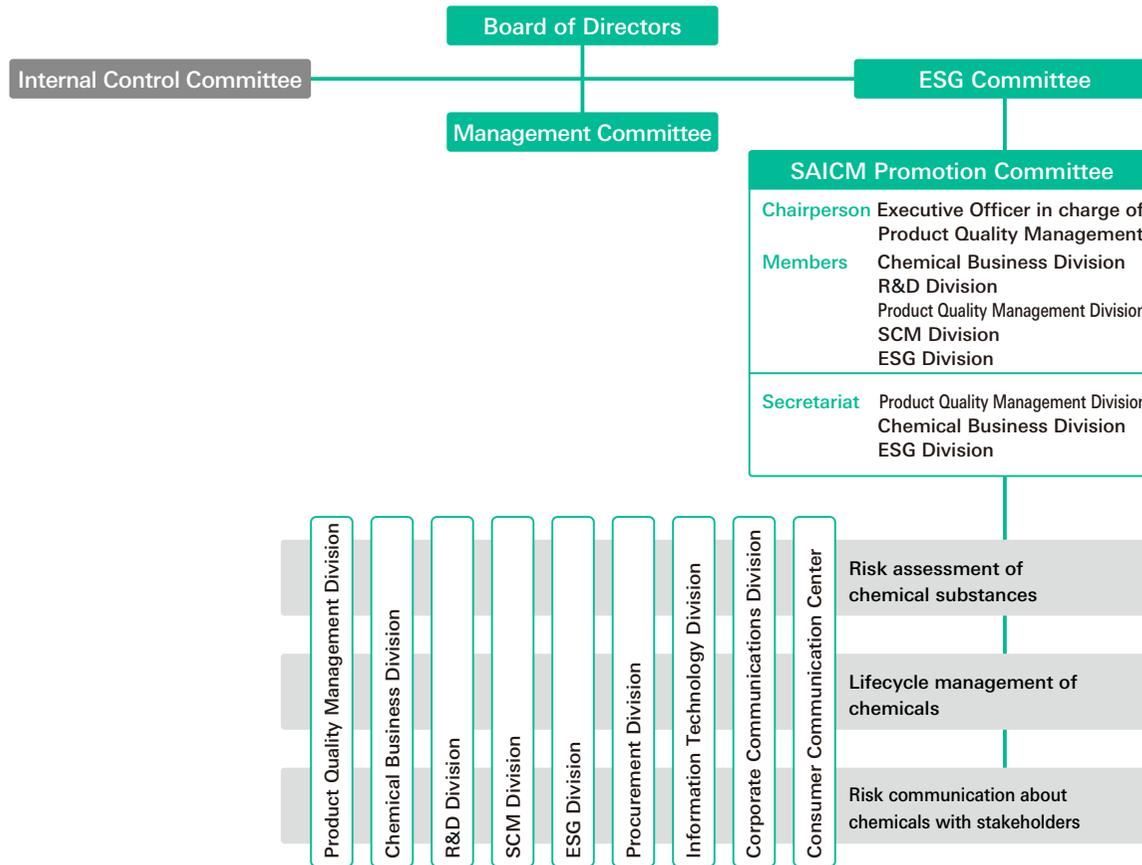
The SAICM promotion activities undertaken by Kao include:

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

We have established and are implementing projects for each activities. Besides project-specific meetings, the SAICM Promotion Committee meets 3–4 times a year to receive reports on implementation status, listen to lectures given by outside experts and discuss measures to realize our vision for chemicals management in the post-2020 period.

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SAICM Promotion Framework



* As of December 2019.

Comprehensive Management System for Chemical Substances

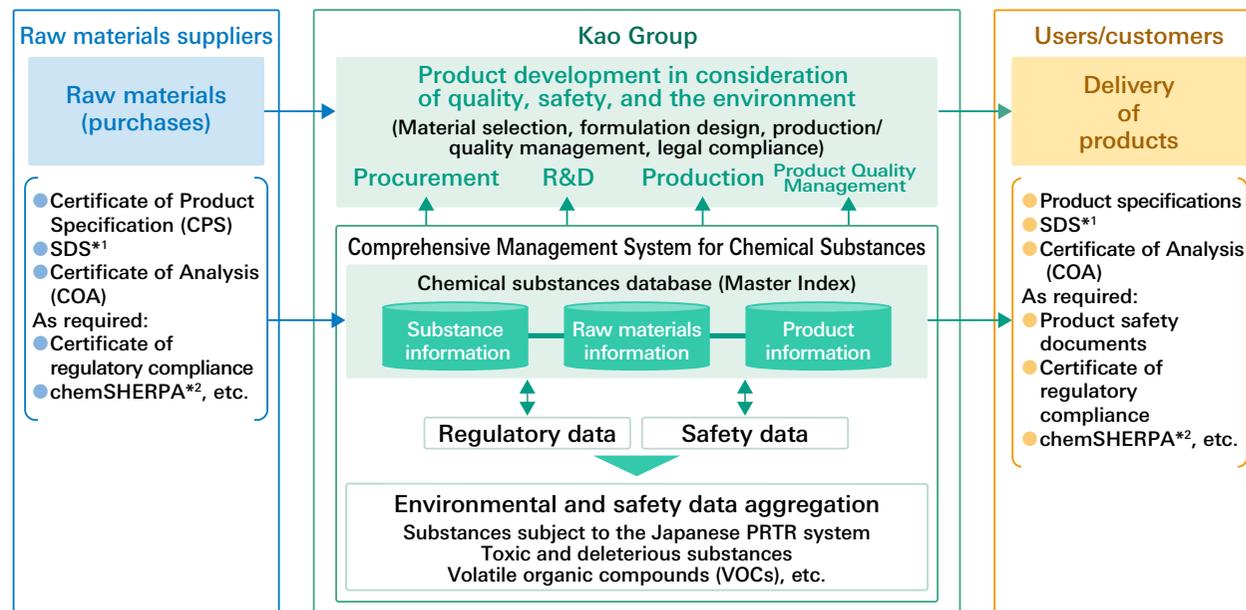
In addition to reinforcing responsible chemicals management mainly under the framework of the SAICM Promotion Committee, we developed and use the Kao Comprehensive Management System for Chemical Substances, an advanced IT support system.

In this system, we use the consistent Kao Group codes named as the Master Index that have been assigned to individual products and raw materials since 2001 to manage chemical information for various products from for industrial to for consumers.

The system provides a database which breaks down raw materials by their constituent ingredients. As a result, this system makes it possible immediately to verify the raw materials' quality, safety, anti-bacterial grade, regulatory and other information for each product. 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. Based on integrated management by personnel 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 chemicals management on a company-wide basis.

In addition, we are enhancing the functions of the Comprehensive Management System for Chemical Substances to cope with global changes in regulatory requirements and our business expansion into new business fields and regions.

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 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/english>

Mid- to long-term targets and performance

2020 mid-term targets

1. Risk assessment of chemical substances

We select Kao priority assessment substances taking into consideration factors such as production and use volume, the exposure level for humans and the environment, and priorities in our corporate activities. We assess those substances considering the expected impact on the environment in accordance with our risk assessment policy, and implement appropriate management on the basis of the assessments.



→ Risk assessment policy
chemical.kao.com/global/sustainability/saicm/article_03/

Risk assessment of chemical substances is conducted with the following objectives.

- Conduct risk assessments of the Kao priority assessment substances (19 categories) by 2020.



→ Kao's Safety Summary of chemicals for priority risk assessment
chemical.kao.com/global/sustainability/saicm/article_05/

Examples of the 19 categories

- Alkyl glycosides (a class of non-ionic surfactants): Widely used in everyday consumer products such as dishwashing liquids, household cleaners, body soaps, shampoos, etc.
- Polyoxyalkylene alkyl ethers (a class of non-ionic surfactants): Widely used in everyday consumer products such as laundry detergents, dishwashing liquids, household cleaners, shampoos, bleaches, etc.
- Sodium linear-alkylbenzene sulfonate (a class of anionic surfactants): Widely used in everyday consumer products such as laundry detergents, dishwashing liquids, etc.
- Polyester resin for use in toner (polyester resin used as binder in toner)

2. Lifecycle management of chemicals

We have set the following targets at workplaces where chemicals are handled to prevent adverse health effects on workers.

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

3. Risk communication about chemicals with stakeholders

We have set the following targets for communicating safety information on our manufacturing and selling chemicals throughout the supply chain, and for ensuring safety, sound use and the ability to take necessary action pertaining to chemicals.

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

* GPS Safety Summary

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

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Discussion in the lead-up to 2030

We have defined our vision and approach to the future up to 2030 as a company which handles a wide range of chemicals from industrial products to consumer products, as we promote responsible chemicals management in accordance with our ESG Strategy. We continue to discuss specific targets and actions.

Kao's vision

We believe in a safe society where people around the world can enjoy the benefits provided by chemicals with peace of mind.

To that end, the risks associated with chemicals should be properly managed. Through its ESG initiatives, Kao wants to take the lead in responsible chemicals management to help actualize such a society by 2030.

Five-part approach

1. Minimize environmental impact throughout the product lifecycle

Facilitate sustainable product development through collaboration across whole product life cycle (procurement of raw materials, development, manufacturing, distribution, sales, use, disposal/ recycling).

2. Foster a sense of trust by having zero chemical accidents

Strengthen chemical risk management through whole product life cycle (procurement of raw materials, manufacturing, distribution and disposal).

3. Optimize risk assessment methods for efficient chemicals management

Improve assessment methods through collaboration with the government, academia, and related industries for the sound chemicals management and minimization of risks for human health and the environment in society as a whole.

4. Make information on chemicals' benefits and safety available in an accessible and easy to understand way

Share information on chemicals' benefits and safety with stakeholders in society.

5. Effectively communicate with people around the world to earn more trust

Facilitate effective communication with people around the world by keeping their diverse values and lifestyles in mind.

Performance in 2019

The SAICM Promotion Committee set the following project targets for 2019 and conducted activities accordingly. Details on results can be found in Our Initiatives.

Targets for 2019

1. Risk assessment of chemical substances

1. Conduct risk assessments and compile risk assessment reports for Kao priority assessment substances (three categories)
2. Discuss risk assessment results with outside experts at academic conferences
3. Publish papers on risk assessment techniques and methods
4. Continue the global roll-out of and enhance the Comprehensive Management System for Chemical Substances

2. Lifecycle management of chemicals

1. Implement risk reduction measures based on risk assessments at workplaces where chemicals are handled
2. Complete GHS* hazard labeling at ten production sites in Japan and continue implementation at production sites outside Japan

* GHS

Globally Harmonized System of Classification and Labelling of Chemicals

3. Risk communication about chemicals with stakeholders

1. Public disclosure of SAICM promotion activities results
Three safety summaries of Kao priority assessment substances and 18 GPS Safety Summaries for chemical products
2. Continue to conduct and review our mutual communication with stakeholders
Stakeholders: Industries, administrative bodies, customers, consumers

Reviews of performance

In our initiatives on chemicals, we achieved our objectives in all projects.

New issues that were identified through the initiatives were shared in the SAICM Promotion Committee, and they are incorporated into our 2020 action plan.

We are also discussing to achieve our mid- to long-term vision for 2030.

Our initiatives

Internal education on chemicals

We worked on the following activities in 2019.

- Product Quality Management and R&D divisions led organizing three internal briefings and lectures by outside experts on chemicals management, and approximately 350 persons attended.
- The SCM Division has developed educational programs for current and new employees and internal transfers, which are structured by field of specialization and level of experience. The curriculum included information on the risks and hazards of chemicals

Communication about chemicals with stakeholders

We worked on the following activities in accordance with our SAICM Promotion Policy.

1. Collaboration with industry organizations

We have participated in various activities to contribute to chemicals management in industries.

We are actively involved in JIPS*¹, which is a voluntary initiative by chemical industry in Japan to strengthen chemicals management in order to contribute to SAICM, and discussed ways to support voluntary chemicals management in and after 2020 under the Chemicals Management Committee.

In addition, we continued our positive participation in LRI*², which is promoted by the Japan Chemical Industry Association with chemical industries in Europe and the United States, and supported researches.

*1 JIPS

Japan Initiative of Product Stewardship.

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

*2 LRI

Long-Range Research Initiative

An international program that provides long-term support to researches on the potential impact of chemicals on human health and the environment.

2. Collaboration with administrative bodies

We have continued cooperation with administrative bodies in Japan involved in chemicals management, exchanging opinions regarding Kao's SAICM promotion activities and discussing the framework of chemicals management in and after 2020. In 2019, we exchanged views with government agencies four times.

We also actively participated in study panels in administrative agencies through industry organizations to exchange opinions in order to use more precise environmental assessment methods for chemical regulations such as Chemical Substances Control Law.

3. Collaboration with distributors and customers Providing information on chemicals in products

To comply with increasingly stringent regulations in various countries and regions as well as with industry standards, we proactively manage the chemical substances contained in our chemical products (management chemical substances in products) and provide information to our customers.

With regard to providing information on chemical substances in products to our customers, we adopted chemSHERPA (September 2017), which is a new information communication scheme for chemical substances in products developed under the initiative

of the Japanese Ministry of Economy, Trade and Industry, in advance to the industry. We continuously release the latest versions of chemSHERPA-CI*³ in Japanese, English and Chinese on the Kao website.

We released the latest version of chemSHERPA-CI for our major chemical products in March and September of 2019. In Japan, we voluntarily distributed them to our customers in cooperation with our sales distributors.

*3 chemSHERPA-CI
Data entry support tool and output format for communicating information on specified chemical substances.

GHS-compliant SDS and product labeling

To provide the latest chemical information relating to our products to customers, we issue GHS-compliant SDS and promote GHS-compliant product labeling for our chemical products in countries that have introduced GHS.

In 2019, we prepared and applied GHS labeling for new products marketed in countries and regions that have introduced GHS (Japan, Europe, the U.S. and Asia) from our plants in Japan and Asia. We also monitored regulatory trends in countries and regions that have implemented GHS, and we updated SDS and labels as necessary.

We have started implementation of amended JIS*⁴ in Japan by June 2022.

We are enhancing the Comprehensive Management System for Chemical Substances with a target of 2020, as well. The system is planned to provide smooth preparation and management functions of SDS and product label compliant with the latest version of GHS in each country around the world.

*4 JIS
Japanese Industrial Standards

Collaboration with distributors

Chemical Business Division shares information such as SDS and chemSHERPA-CI via a private network (Extranet) linking sales distributors to Kao to collaboratively promote chemicals management throughout the supply chain.

In 2019, we posted updated information and up-to-date information on chemical regulations and import/export controls, and requested our customers to deal with them.

In addition, we explained our chemicals management activities at a training for new sales distributor employees at the Wakayama Complex in October. We also visited 11 selected sales distributors in November and December to exchange knowledge on recent trends including chemical regulations around the world and our actions.

4. Collaboration and communication with consumers

Kao Corporation continuously engages in communication with consumers and residents near our business sites to deepen understanding of chemical risks and its proper usage.

The representative activities in 2019 are as follows.

- Communication sessions with residents near our plants and local governments at ten plants in Japan and analysis in order to implement more close activities aligned with regional characteristics.
- Discussion with medical students about how to transfer chemical risk information in ways that are easy to understand.
- Kao employees wrote and issued a book on chemicals management for business persons (Publisher: The Chemical Daily) for better understanding of chemicals management in society.

Performance in 2019 concerning mid-term targets

Details concerning performance in 2019 toward the 2020 mid-term targets were as follows.

1. Risk assessment of chemical substances

1. Conduct risk assessments and compile risk assessment reports for Kao priority assessment substances (3 categories).

We completed risk assessments (cumulative total of 21 categories) as planned, and compiled the results in risk assessment reports. Risk for human health and the environment was acceptable level for all three categories.

In 2019, we released 3 safety summaries of Kao priority risk assessment substances whose risk assessments were conducted in 2017.

We also prepared 18 GPS Safety Summaries in Japanese and English for chemical products and publicly released them. The Kao Group has published a total of 159 GPS Safety Summaries globally.

Released in 2019

Polycarboxylic acid based polymer, Benzalkonium chloride, Mono alkyl cation



→ Kao's Safety Summary of chemicals for priority risk assessment
chemical.kao.com/global/sustainability/saicm/article_05/

→ GPS Safety Summaries
chemical.kao.com/global/sustainability/saicm/article_06/

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2. Discuss risk assessment results with outside experts
We made following presentation at The Japanese Society of Toxicology (JSOT) and deepen our understanding through discussions with experts.

“Human health and environmental risk assessment of chemicals in daily use: Safety assessment of fatty acid amidopropyl dimethylamines in consideration of using consumer product”

3. Publish papers on risk assessment techniques and methods

We published the following three papers on environmental risk assessment techniques and methods in 2019.

- *Integrated Environmental Assessment and Management*, vol. 15, pp. 750-759 (2019)
- *Journal of Japan Society on Water Environment*, vol. 42, pp. 79-89 (2019)
- *Journal of Japan Society on Water Environment*, vol. 42, pp. 201-206 (2019)

4. Continue the global roll-out of and enhance the Comprehensive Management System for Chemical Substances

We continued registration of new raw materials on the current system in 2019. In addition, we launched a project to take measures to globally accelerating social and environmental changes such as tighter regulations as well as our expanding business areas and the countries where we conduct business, and worked to enhance systems, targeting to go live in 2020.

2. Lifecycle management of chemicals

1. Implement risk reduction measures based on risk assessments at workplaces where chemicals are handled
The representative measures that we implemented in 2019 to protect the safety of workers at workplaces

where chemicals are handled were as follows.

- Systemization of the control banding method*1 for risk assessment so that it can be easily used at production sites. In addition to the control banding method, we also promoted the use of more precise risk assessments using ECETOC TRA*2 and CREATE SIMPLE Ver2.0*3 as necessary.
- We implemented risk reduction measures for each production area for small quantity/large variety products such as cosmetics.
- Expansion of chemical risk assessment implemented in Japan throughout Asia.

*1 Control banding method

A method of assessing the risks of health hazards associated with chemical substances. This is a method for managing chemical substances designed by the International Labour Organization (ILO) that incorporates simple and practical risk assessment methods. 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 component elements: the hazard 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 regard 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 risk management direction as well as the risk determination.

*3 CREATE-SIMPLE (Chemical Risk Easy Assessment Tool, Edited for Service Industry and MultiPLE workplaces)

A simple chemical substance risk assessment tool designed for use in a wide range of workplaces, including service sector workplaces. It was released by Japan's Ministry of Health, Labour and Welfare in 2018.

2. Complete GHS labeling at production sites in Japan and continue implementation at production sites outside Japan

To ensure that workers can check the hazards of chemicals before handling them, since 2016 we have been working to display GHS labels on storage tanks

and work areas for sampling, filling and so on where chemicals are handled in plants. In 2019, we completed labeling at 10 plants in Japan.

Of the 22 plants of group companies outside Japan, labeling is nearly complete at 12 plants in Asia.



GHS labeling on a storage tank (example)



GHS labeling at raw materials intake ports (example)



GHS labeling at raw materials sampling ports (example)

3. Risk communication about chemicals with stakeholders

1. Public disclosure of SAICM promotion activities results



→ p. 199 Kao's Safety Summary of chemicals for priority risk assessment / GPS Safety Summaries

2. Continue to conduct and review our mutual communication with stakeholders



→ p. 198 Communication about chemicals with stakeholders

Global compliance with chemical regulations

Kao registers and manages chemical substances contained in our products manufactured, or directly or indirectly exported according to the quantities and hazard levels, based on the chemical regulations of the relevant countries or regions and in accordance with our SAICM promotion policy.

We have been introducing systems that can check regulations at the time of import and export to our affiliates related to the Chemical business since 2017, and we are taking measures to ensure legal compliance.

1. Japan

We investigated use information of existing chemicals throughout the supply chain and certainly reported that information in accordance with the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc. (Chemical Substances Control Law).

In addition, we conducted notification by means of an electric system for Confirmation of Small Quality of New Chemical Substances, taking into account the release into the environment, whose operation began in fiscal 2019.

2. United States

In 2019, we improved the Comprehensive Management System for Chemical Substances and completed updating data in response to the new operation of the existing chemical substance list under the U.S. TSCA^{*1}, which was amended in 2016.

3. China

In cooperation with local Kao companies, we completed registration before manufacturing or import of new chemical substances in our products and annual volume reporting in accordance with the new Measures for

Environmental Administration of New Chemical Substances.

We also collaborated with industry organizations and local subsidiaries to acquire up-to-date information regarding ordinances on hazardous chemicals that are expected to be tightened, new Measures for Environmental Administration of New Chemical Substances and Regulations Concerning the Hygiene Supervision over Cosmetics that are expected to be amended, and Regulation on Environmental Risk Assessment, and Control of Chemical Substances that are expected to be newly adopted.

4. South Korea

In response to the requirement for pre-registration under the revised Chemicals Act (K-REACH)^{*2}, which started in 2019, we completed the advanced selection of subject substances and submitted registration applications by the deadline without delay. We are participating in consortiums concerning chemical substances and are proceeding steadily with registration work.

5. Other countries

Working in collaboration with local subsidiaries in countries and regions in Europe, North America (Canada), East and Southeast Asia and Oceania that have introduced chemical substance management systems, we surely submitted necessary notifications and undertook management necessary for manufacture and import, and gathered information on the latest regulatory trends.

^{*1} TSCA

Toxic Substances Control Act

A U.S. law that regulates chemical substances that poses unreasonable risks to human health and the environment.

^{*2} K-REACH

The Act on the Registration and Evaluation of Chemicals of South Korea.



Kao Corporation's Chemical Business Division receives JIPS Award Grand Prize

In February 2019, Kao Corporation's Chemical Business Division received the JIPS Award Grand Prize. This was the third consecutive year that the division has won 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 a large number of GPS Safety Summaries, and of our proactive pursuit of chemicals management.



Awards ceremony