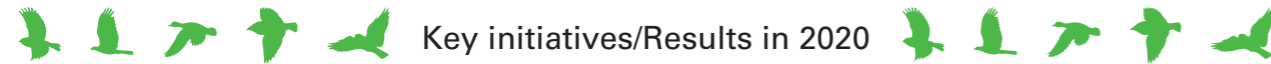


Chemical Substance Management

Strengthening Activities Related to Product Responsibility and Product Stewardship



Key initiatives/Results in 2020

Accurately evaluated chemical substance risks in a timely fashion and properly managed these risks

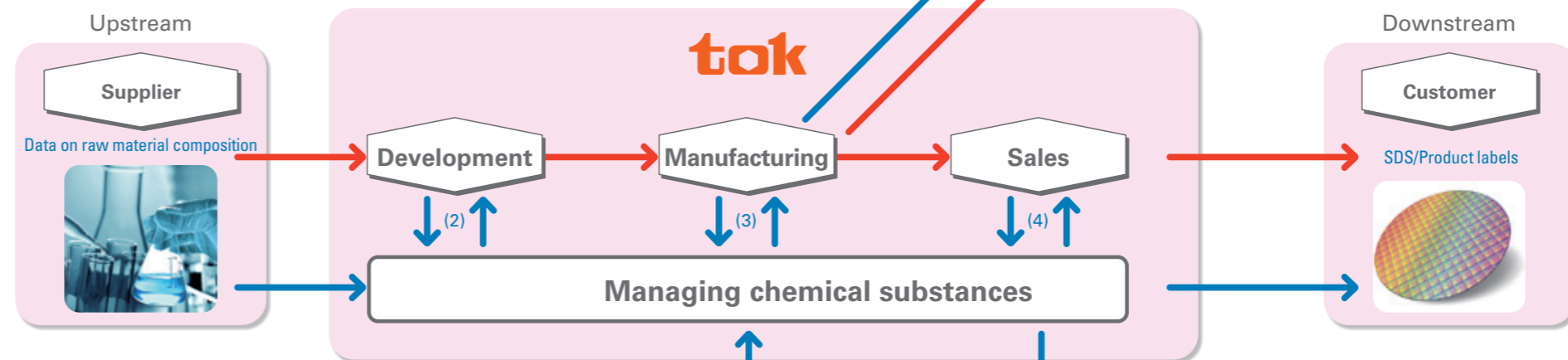
Maintain upstream management system

Basic Concept

Management of chemical substances is a key priority for the Company from the perspective of social responsibility. In addition to observing all laws and regulations, our group-wide efforts ensure the correct management of chemical substances while we remain mindful of globally expanding environmental issues. To this end, we have defined the responsibility to local and international communities as one of the TOK Group Creeds, which break down the management principles, and have been working to reduce our impact on the environment, including combating global warming, managing chemical substances, effectively utilizing resources, and reducing waste, thereby gearing up our product stewardship activities.

Risk management in each part of supply chain

— Flow of materials
— Flow of information



Accurately Evaluated Chemical Substance Risks in a Timely Fashion and Properly Managed These Risks

The risk management of chemical substances can be interpreted as *risk management in each part of the supply chain*. To this end, it is necessary to provide information in accordance with the flow of materials. In each of the development, manufacturing, sales, and disposal stages, TOK creates and implements procedures for complying with all laws and regulations and managing risks.

Regarding the risk management of chemical substances, our continued efforts culminated in the elimination of PFOA* in 2020. Through these efforts, we have eliminated PFOA and its salts. We will also eliminate the use of PFOA-related substances within 2021. (see page 108, TOPICS, “Response to the Revised Chemical Substances Control Law”)

* Perfluorooctanoic Acid

(1) Obtaining information about revisions to laws and regulations and treaties

For the chemical substances handled by the TOK Group, we put in place a system for complying with legal requirements and ascertaining the use of regulated substances under laws and regulations and treaties that include chemical substance management laws and the regulations in each country, such as the REACH regulation*¹ and laws governing conflict minerals,*² and determining whether or not such substances may be used. Moreover, for high-risk chemical substances whose use will be prohibited in the future due to tighter regulations, we have proposed and are managing the progress of elimination plans for all products to ensure that the use of such substances is discontinued and inventories are disposed of prior to the implementation of the applicable laws and regulations.

(2) Development stage

For newly developed raw materials, in addition to the legal and regulatory information, we check to confirm whether they contain chemical substances identified in our own TOK Group Standards on Chemical Substances Management, which stipulate substances whose use is prohibited or should be eliminated. Moreover, we check the developed products with respect to customer’s requirements as well. If the specified substances exceed the levels in the TOK Group Standards on Chemical Substances Management, we propose an alternative plan and strive to eliminate them.

Maintain Upstream Management System

TOK is working to establish a system for properly conveying information on the chemical substances throughout the supply chain as part of its product stewardship activities, a key pillar of Responsible Care. Timeliness and the accuracy of information are vital when conveying such information about chemical substances. Upstream management is very important for the timely and accurate receipt of information about chemical substances from upstream suppliers. In addition to the information about chemical substances received from these suppliers, TOK must manage the latest information about chemical substance

regulations in each country and then display the information in product safety data sheets (SDS) and labels to present its customers with accurate and relevant information about the chemical substances in a timely manner.

In 2020, we streamlined the internal information sharing process so that the timeliness of SDS information would not be compromised during the COVID-19 pandemic. On the other hand, we found problems with work efficiency and information security in the process of obtaining raw material information from suppliers. We will examine how to rationalize the operation of this process.

(5) Disposal stage

Waste from each site is thoroughly sorted by type and recycled, and properly disposed of when necessary. For industrial waste disposal service providers contracted to dispose of waste, we provide information about the type of waste and handling precautions through the Waste Data Sheets (WDS). The Company periodically visits all service providers for on-site audits and to ensure that all waste is being properly disposed of in accordance with the contractual agreements.

(4) Sales stage

TOK has connected its ERP system, which manages product shipment volumes, and its chemicals and PRTR management system, which manages chemical substance composition, to create a framework for automatically calculating the volume of transferred chemical substances. With this framework, TOK can appropriately report chemical substance volumes and apply for their usage in accordance with the Chemical Substances Control Law*³ and the PRTR Law*⁴ in Japan, as well as the laws and regulations of the countries that import its products.

(3) Production stage

All raw materials used to manufacture products are subject to occupational health and safety risk assessments. The Company identifies hazardous factors in the production environment, clarifies the hazard level, implements measures to mitigate and eliminate the hazardous factors based on the risk level, and then takes action to lower the risk. In this way, TOK maintains the proper work environment for all employees.

*1 REACH regulation: Registration, Evaluation, Authorization and Restriction of Chemicals; This is an EU regulation that manages the registration, evaluation, and accreditation of chemical substances through an integrated system.

*2 Conflict minerals: Refer to four types of minerals that include tin, tantalum, tungsten, and gold mined in the Democratic Republic of the Congo and adjoining countries experiencing armed conflicts. These minerals are regulated under the U.S. Dodd-Frank Act (financial regulatory reform act).

*3 Chemical Substances Control Law: Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

*4 PRTR Law: Act on Confirmation of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

TOPICS

Response to the Revised Chemical Substances Control Law

The Cabinet Order for Partial Revision of the Enforcement Order of the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture (Chemical Substances Control Law) was promulgated on April 21, 2021 (effective date: October 22, 2021). This Cabinet Order adds PFOA and its salts to the Class I Specified Chemical Substances under the Chemical Substances Control Law, following the listing of new substances subject to elimination at the Ninth Meeting of the Conference of Parties to the Stockholm Convention on Persistent Organic Pollutants (POPs) in May 2019. In 2022, PFOA-related substances will also be included into the Class I Specified Chemical Substances in 2022. PFOA, its salts, and PFOA-related substances had been commonly used for photoresists and anti-reflectives for semiconductor production until several years ago. However, the PFOA should be categorized as a persistent organic pollutant based on the review by the Persistent Organic Pollutants Review Committee under the Conference of Parties to the Stockholm Convention on POPs, and the Japanese government promulgated the Cabinet Order above.

Considering the impact of this movement, TOK developed substitute substances in 2012. Efforts have also been promoted to reduce these substances from existing products, and we have already eliminated PFOA and its salts. The amount of PFOA-related substances used in our

products has been reduced by 98.6% in 2020 from 2015 as the base year. We will also eliminate PFOA-related substances within 2021, owing to our systematic efforts for elimination. We will continue to implement measures for the prompt acquisition of information on legal revision, thereby minimizing the environmental impact and ensuring the continuity of product supply.

Properly Comply with PCB Special Measures Act

For low-concentration PCBs,* we have undertaken proper storage and management in accordance with the prescribed storage standards for waste containing PCBs at three sites (Sagami Operation Center, Shonan Operation Center, and Gotemba plant), while also filing the necessary reports with the government. In 2020, we formulated a road map to dispose of all electrical substation facilities and related waste used and stored at all sites by the legally mandated deadline of 2027. The Company intends to dispose of this waste in stages by drawing up plans to update equipment in a way that does not interfere with the production activities at each site.

* Polychlorinated biphenyl (PCB): A kind of organic compound; PCB was formerly used for thermal media, insulating oils, coatings, and other applications because it excels in terms of heat resistance and electrical insulation. However, because of its poor degradability and high toxicity, PCB production was discontinued in 1972. Nevertheless, little progress has been made with regard to disposal, and the managers responsible for storage are required to place it under strictly controlled conditions.



Future Issues and Initiatives

As semiconductor demand has been rising more than ever, the supply-demand conditions have also become tight for certain chemicals used in semiconductor production. It may not be commonly known that this undersupply results not only from material procurement issues and under capacity at manufacturers but also from restrictions on the acceptable manufacture volume for new chemicals based on the volume reporting requirement stipulated by the Chemical Substances Control Law. In some cases, it takes about two years from reporting to permission when acceptable manufacture volumes can be changed. In our industry with technological innovation, it is difficult to forecast customer demand in advance and report planned changes in time. Our requirement for the coming years is to devise a system that enables adaptation to global changes.

TOK Human Resources

Mihye Yoo
*Chemical Substances
 Management Section, EHS Div.*



To support worldwide chemical substances management

Because the overseas sales ratio of the TOK Group stands at approximately 80%, it is essential to collect information from around the world for chemical substance management as well. The daily occurrence in our office is that I make a phone call in Korean to the Korean site and hear my colleagues speaking with the Taiwanese site in Taiwanese/Chinese. While regulatory requirements vary by country, we share information within the division on a periodic basis to deepen the understanding of the laws in other countries. Chemical substance regulation is no longer a domestic requirement but has become a worldwide trend. I recognize the importance of a global perspective every day. We will continue to promote appropriate chemical substance management that matches the situation of each country and information sharing featuring horizontal connections.