



Managing Chemical Substances

Strengthening Activities Related to Product Responsibility and Product Stewardship

Key initiatives/Results in 2018

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

Advanced disposal of PCB waste at three sites

Improved supplier engagement

Basic Concept

One of the international trends in the management of chemical substances over the past few years, managing chemical substances on a risk basis has become the norm following the agreement on 2020 targets* at the 2002 World Summit on Sustainable Development in Johannesburg, South Africa. As one of its management principles, TOK has identified its responsibilities to local communities and communities around the world within the context of working to reduce its impact on the environment, including combating global warming, managing chemical substances, effectively utilizing resources, and reducing waste. In other words, TOK is strengthening activities related to product stewardship.

* WSSD 2020 Target: Aim to achieve by 2020 the use and production of chemical substances based on methods to minimize significant adverse effects on human health and the environment, using transparent science-based risk assessment procedures, taking into account the precautionary approach.

Carry Out Appropriate and Reliable Management of Chemical Substances

TOK is working to establish a system for properly conveying data about chemical substances throughout the supply chain as part of its product stewardship activities, a key pillar in Responsible Care. Timeliness and accuracy of information are vital when conveying data 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 obtain and manage the latest information about chemical substance regulations in each country and display information on product safety data sheets (SDS) and labels to present its customers with accurate relevant information about chemical substances in a timely manner.

With a focus on strengthening its upstream management system in 2018, as its first initiative, TOK endeavored to improve the management of raw materials. In the past, we used email to communicate with suppliers to confirm whether materials contain substances subject to assessment when related laws and regulations and treaties are revised. However, email was not very efficient and became a cumbersome administrative burden. We decided to use a supplier survey system to gather responses to our questions, and the responses are automatically reflected in data on product composition, allowing us to provide our customers with relevant information more

efficiently and rapidly. As another initiative, we worked to improve product composition management. We markedly improved the speed for assessing products under development by including these items in a database that previously only included the compositions of mass-produced products. TOK will continue striving to ensure accurate information about chemical substances is rapidly provided to stakeholders.

Properly Comply with PCB Special Measures Act

In 2018, TOK properly stored and managed waste containing PCBs* in accordance with prescribed storage standards at three sites comprising the Sagami Operation Center, Shonan Operation Center, and Gotemba Plant, while also filing reports with the government authorities. The Company has disposed 82% of the high-concentration PCB stored at the Sagami Operation Center. Looking ahead, TOK must dispose of all electrical substation facilities and related waste used and stored at all of its 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 business activities.

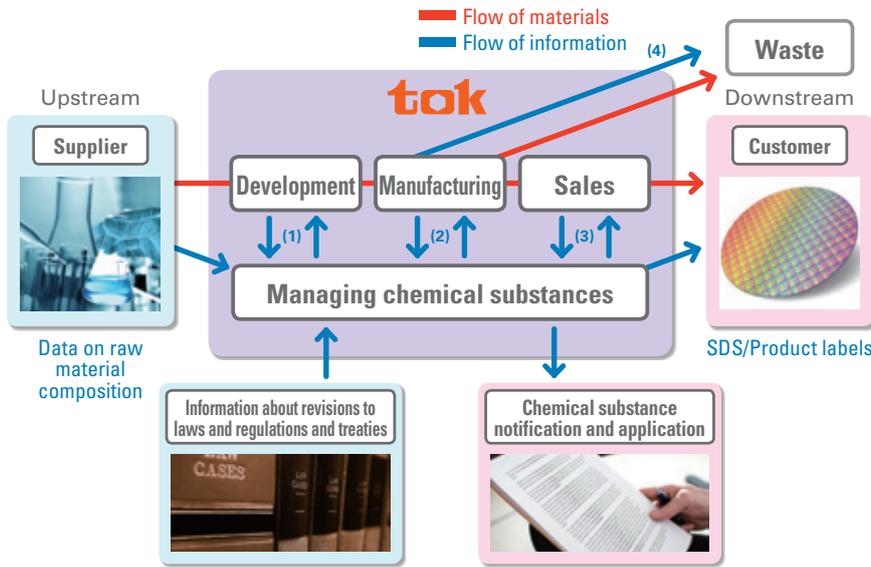
* Polychlorinated biphenyl (PCB): A kind of organic compound, PCB was formerly used for thermal media, insulating oils, paints and other applications because it excels in terms of heat resistance and electrical insulation. However, due to its poor degradability and high toxicity, PCB production was discontinued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

Chemical Substance Risk Management in the Supply Chain

To properly manage chemical substance risk in the supply chain, it is necessary to provide information in accordance

with the flow of materials. For each stage of development, manufacturing, sales, and disposal, TOK has created procedures for complying with laws and regulations and managing risks.

Flow of Chemical Substance Risk Management in the Supply Chain



(1) Development stage

For raw materials used in newly developed products, the Company has put in place a system for complying with legal requirements and ascertaining the existence of regulated substances under laws and regulations and treaties including chemical substance management laws and regulations in each country, the REACH regulation^{*1} or other laws governing conflict minerals^{*2}, etc. Moreover, the Company has created the TOK Group Standards on Chemical Substances Management, which define the chemical substances that are prohibited or should be managed, and works to reduce their use if standard thresholds are exceeded by proposing alternative plans.

(2) 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 their risk level, and then takes action to lower the risk. In this way, TOK maintains a proper work environment for its employees.

(3) 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 chemical substances transferred. With this framework, TOK is able to 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.

(4) Disposal stage

Waste from each site is thoroughly sorted by type and recycled, and properly disposed when necessary. For waste disposal companies contracted to dispose the waste, TOK provides information about the type of waste handling precautions through Waste Data Sheet (WDS). The Company periodically visits the waste disposal companies to perform on-site audits and ensure waste is being disposed properly in accordance with contractual agreements.

*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, with the aim of ensuring complete fulfillment of responsibility on the producers' part, as well as thorough compliance with preventive principles.

*2 Conflict minerals: Refer to four types of minerals including 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, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

TOK Group Standards on Chemical Substances Management

To promote initiatives related to reducing environmental impact, we are focusing on managing chemical substances during the raw material procurement stage. In January 2005, we formulated the TOK Standards on Chemical Substances Management, which specifies chemical substances to be prohibited or managed. Since then, we have revised the Standards multiple times to comply with the most recent laws, ordinances, and regulations, including the EU REACH regulation and conflict minerals regulated under and the U.S. Dodd-Frank Act (financial regulatory reform act).

In the seventh edition the Company issued in May 2017, we renamed it the TOK Group Standards on Chemical Substances Management, and clarified regulations for chemical substances at Group sites and customer requirements for the environmental management of substances, as well as completely reviewed the chemical substances subject to management. The TOK Group Standards on Chemical Substances Management are used as a tool for obtaining data on chemical substances from suppliers, and by sharing information through the supply chain, we will continue to properly manage chemical substances within the context of risk management.

Future Issues and Initiatives

In countries that have registration systems for new chemical substances, companies are often required to file information about the application of these substances and the importer/exporter. Customers for the Company's products have shifted overseas, making it more complex and complicated to keep track of distribution channels for chemical substances, and this has turned into a burdensome workload. By automating work that had been done manually, we aim to lighten workloads while examining ways to improve accuracy and speed at the same time. TOK plans to develop and start testing this system in 2019 with the aim of deploying it in 2020.

TOK's Human Resource



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Building Stronger Relationships with Overseas Subsidiaries, Endeavoring to Reliably Supply Products

The Chemical Substance Management Office must constantly stay abreast of the latest requirements in laws and regulations to fulfill its mission of rapidly and accurately conveying information about chemical substances to stakeholders. Around the world, chemical substance management is being strengthened. In South Korea and Taiwan, laws and regulations are scheduled for revision by 2020. To avoid

any interference with product deliveries after these laws are revised, TOK is making preparations in advance, and obtaining the latest information through its subsidiaries in both countries. This is also one outcome of the Group Management System (GMS) that has been promoted since 2016. We are endeavoring to stably supply products by continuing to build even stronger relationships with overseas subsidiaries.