Management and Reduction of Hazardous Chemical Substances

Environmental Action Plan Achievements for Fiscal Year 2025 [Summary] ▶ p.038
Environmental Action Plan Targets for Fiscal Year 2026 [Summary] ▶ p.039

Basic Approach

While chemical substances enrich lives, highly hazardous substances can cause serious damage to human health and the environment when used and disposed of improperly. Countries around the world develop laws and regulations on the proper management of chemical substances aiming to prevent health hazards and negative environmental impact. These laws and regulations continue to tighten with every passing year. Companies are required to establish a system for the proper management of chemical substances and to develop, manufacture, and sell products while complying with laws and regulations. The Nikon Group stipulates the management of chemicals and compliance with laws and regulations, environmental consideration, and pollution prevention in the Nikon Environmental Policy, establishing Realizing a Healthy and Environmentally Safe Society as one of the pillars of the Nikon Long-Term Environmental Vision for the year 2050.

Web ▶ Nikon Environmental Policy

Strategy

Risk

If products are improperly disposed of or incinerated, any hazardous chemical substances released may pose a risk of environmental contamination and health hazards to humans and other living organisms. As regulatory requirements become stricter, potential consequences include the costs associated with violations (product recalls, compensation for damages, etc.), penalties (suspension of operations, etc.), loss of public trust, and withdrawal of investment. Avoiding the use of newly regulated hazardous chemical substances could make it impossible to manufacture products that meet the performance requirements of the market. Other risks include product manufacturing delays due to difficulties in obtaining alternate materials and sub-materials, as well as delays in technological development relying on alternate materials.

Leakage of hazardous chemical substances from business facilities can contaminate soil, groundwater, and public waters, posing a threat not only to human health, but also a risk of adverse effects on the surrounding ecosystem.

Opportunities

Managing and reducing chemical substances in a proper manner to comply with increasingly tightening laws and regulations enables us to reduce our impact on climate change and biodiversity, as well as reduce health, safety, and environmental risks to society. These efforts also help strengthen our competitiveness through taking preemptive measures to avoid the use of chemical substances facing potential stricter regulations. We expect our continued implementation of these activities to maintain the trust of stakeholders.

Strategy

To safeguard human health and reduce environmental risks, the Nikon Group strives to implement rigorous chemical substance management that adheres to international regulatory frameworks. As part of our efforts to manage chemical substances, we established and operate unique Nikon Group standards under the Hazardous Chemical Substances Guideline that are stricter than laws and regulations for chemical substances used in production processes, safety and health, and chemical substances contained in products. We may make special exceptions to use restricted chemical substances only within the scope of laws and regulations when replacing or discontinuing use is technically difficult. At the same time, we pursue activities to eliminate such substances.

Chemical Substances Contained in Products

We comply with the EU RoHS Directive*1, REACH Regulation*2, and other laws and regulations on chemical substances contained in products around the world. To this end, we manage regulated substances in two categories: *Prohibited and Control*. We require that procurement partners comply with Nikon Group management standards (Nikon Green Procurement Standards).

We follow the latest trends in chemical substance regulations and prohibit relevant substances in our procured items to control and reduce said substances before regulations are enforced. We also track trends in each country in advance of the enforcement of laws and regulations to share information and develop alternative technologies.

*1 EU RoHS Directive: RoHS stands for "Restriction of Hazardous Substances." This directive restricts use of specified hazardous substances in electrical and electronic equipment.
*2 REACH Regulation: An EU regulation on chemical substances that came into effect in 2007. REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. Under this regulation, manufacturers, and importers of chemical substances are required to register information on the safety and use of these substances.

Chemicals Used in Production Processes

We manage substances, categorized according to environmental and health risk: *Prohibited, Reduce, Control, and Other*.

We not only comply with laws, regulations, ordinances, and other rules to prevent air, water, and soil contamination from hazardous chemical substance emissions, we also enter into agreements with local organizations, set voluntary standard values in said areas, and engage in other initiatives.

Nikon Long-Term Environmental Vision and Medium-Term Environmental Goals ▶ p.030

Governance

In the Nikon Group, each business unit and office has established targets for chemical substance management under Nikon Environmental Action Plan.

Meetings related to the product environment, organized under the Products Subcommittee, confirm progress toward targets, examining and determining policies for dealing with chemical substances contained in products. The secretariats of these meetings gather the latest information on relevant laws, regulations, and industry trends, sharing information with relevant business units. Further, we instruct our business units to manage and reduce hazardous chemical substances based on the latest information and check the status of their response.

The person in charge of EMS at each production site and Group company collects environmental data on chemical substances, air, water, etc., used at each business facility, reporting to the Local Environmental Subcommittee secretariat (under the Environmental Subcommittee) twice a year.

In addition, the Chemical Substance Risk Control Team, organized under the Local Environmental Subcommittee, confirms the management and reduction of hazardous chemical substances at each production site.

Environmental Management Promotion System ▶ p.032

Risk Management

Chemical Substances Contained in Products

Since Nikon products consist of a very large number of materials and parts, we conduct surveys using chemSHERPA[*1], a tool for communicating information on chemical substances in products. We conduct surveys with the cooperation of our partners. We obtain survey results from chemSHERPA before the start of production for new products. For existing products, we obtain survey results periodically—about once a year. Based on information gathered from these surveys, each business unit confirms whether Nikon products comply with Nikon Green Procurement Standards, striving to manage and reduce hazardous chemical substances in our supply chain.

*1 chemSHERPA: A shared scheme for communicating information on chemical substances contained in products in the supply chain.

Main Measures for Chemical Substance Management

1. Researching recent global trends in related laws and regulations
   - Collecting information from external committees, etc.
2. Implementing surveys of hazardous chemical substances in products
   - Conducting surveys throughout the supply chain
   - Making effective use of IT to realize efficient data management
   - Implementing chemical analysis, etc.
3. Discussing countermeasures of the Nikon Group
   - Utilizing the relevant internal environment-related systems (committees, etc.)
4. Communicating countermeasures, both internally and externally, in a timely manner
   - Reduction of hazardous chemical substances, alternative instructions, etc.
   - Formulating and updating the Nikon Green Procurement Standards
5. Confirming compliance with laws and regulations
   - Implementing product/packaging assessments
6. Confirming how procurement partners manage chemicals and helping to upgrade their processes
   - Implementing CMS (Chemical Substances Management System)[*2] assessments for procurement partners
   - Providing support to procurement partners for building CMS (Chemical Substances Management System)

*2 CMS: Chemical Substances Management System (management system for chemical substances in products)

Chemicals Used in Production Processes

The Nikon Group strives to reduce the risk of environmental pollution to as close to zero as possible by implementing environmentally friendly management of chemical substances, from purchase to use to disposal. When purchasing a new chemical substance, a system has been established whereby a safety data sheet (SDS)[*3] is obtained and a risk assessment is conducted. Measures based on the results of the assessment are then checked and confirmed by the departments in charge of environment, health and safety, construction, and administration from an expert's point of view. Further, emergency drills are conducted annually in each region. In the event of an environmental accident, we report it to the relevant parties under a predetermined management system according to the level of accident.

*3 Safety data sheet (SDS): To promote improvements in the appropriate management of chemical substances by business enterprises, when a chemical substance specified by the PRTR Law (Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof), or a product containing such a substance, is transferred or supplied from one enterprise to another, the transferring or supplying enterprise is required to provide, in advance, a safety data sheet (SDS) noting information about the characteristics of the chemical substance and how it should be handled.

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Main Initiatives

Total Abolition of All Ozone-Depleting Substances and Reduction of CFC Use

As of fiscal year 2008, the Nikon Group has abolished the use of substances that contribute to the depletion of the ozone layer (HCFCs). These substances had previously been used as refrigerants needed to regulate the temperature in FPD lithography systems and semiconductor lithography systems. For devices previously sold that used HCFCs as their refrigerant, the Nikon Group is developing new types of air-cooling units that do not use HCFCs, and which can be installed in these older devices. With this modification, the Nikon Group is helping to not only reduce the use of HCFCs, but also to

extend the product lifespan of older devices.

In 2024, the EU revised regulations (F-gas regulation) on hydrofluorocarbons (HFCs) and other greenhouse gases, making regulations more stringent than ever. Currently, the Nikon Group strives to reduce HFCs used in equipment or used as cleaning agents in the production process, or to switch from these HFCs to substances with lower global warming potential.

Technology Without Hazardous Substances

The Nikon Group works to develop technologies that do not employ hazardous substances.

Use of Lead- and Arsenic-Free Technology

In the 1990s the Nikon Group adopted the use of lead- and arsenic-free glass[*1], in the recognition that the lead and arsenic used in most optical glass at that time had a serious environmental impact. We are also thoroughly utilizing lead-free solder. Today, with the exception of certain products with special specifications for industrial use, the utilization rate of lead-free solder in new designs is 100%.

*1 Lead- and arsenic-free glass: Nikon has developed a new type of glass that contains absolutely no lead or arsenic for the optical glass used in the lenses and prisms built into optical instruments. Nikon uses lead- and arsenic-free glass for optics in most products, with certain exceptions for special applications.

Hexavalent Chromium-Free Technology for Surface Treatment Processes

Nikon has formulated rigorous technical standards in order to discontinue the use of heavy metals (hexavalent chromium, lead, cadmium, and mercury) in all surface treatment processes, including plating. We provide separate technical support to the procurement partners to which we outsource surface treatment processes, and use chemical analysis to check actual products delivered.

Reduction of Organofluorine Compounds

Organofluorine compounds (PFAS), a general term for organic substances that contain fluorine, are extremely stable compounds that we use in numerous products. The stability of PFAS reversely makes it difficult to decompose in nature or in the body, causing countries to review the safety of the substance and expand product content restrictions. PFOS, PFOA, PFHxS, and related substances are a type of PFAS already designated as substances to be eliminated under the Stockholm Convention. PFHxA is another type of PFAS, regulated under EU REACH and added to the list of restricted substances. The Nikon Green Procurement Standards have prohibited these substances ahead of the effective regulation date, and we have replaced components that contain these substances.

The State of California in the U.S. banned the use of PFAS in textile products effective January 1, 2025. The Nikon Group designated PFAS as a prohibited substance for relevant items in 2023 and substituted out components containing PFAS.

In May 2025, long-chain perfluorocarboxylic acid (LC-PFCA) was designated as a substance to be eliminated under the Stockholm Convention. Regulations are expected to be enforced in various countries in 2026. In anticipation, Nikon prohibited the use of this substance in procured products beginning in May 2026, and we are working on replacing parts containing the substance.

Management and Reduction of Chemical Substances in Manufacturing

The Nikon Group has completely eliminated the use of ozone-depleting substances, including HCFCs and other substances classified as *prohibited*. We also categorized dichloromethane (a possible carcinogen) as a prohibited rank substance, and have replaced the substance in certain processes.

However, we permit special certification and continued use for prohibited substances that are technically and cost-prohibitively difficult to abolish entirely. We permit said use only within the scope of legal regulations and provided that the impact is reduced as much as possible. Although the emission of dichloromethane into the atmosphere is of concern, as the substance is a VOC, we permit the use of the chemical in certain cleaning processes where the substance is technically difficult to replace. In these situations, we install detoxification equipment that absorbs, collects, and reuses most of the volatile dichloromethane, thereby reducing its release into the atmosphere.

Our target for fiscal year 2025 was to reduce certain hazardous chemical substances, including dichloromethane, by 50% or more compared to fiscal year 2023. However, issues with the installation specifications of detoxification equipment resulted in an actual reduction of only 16%, falling short of the target. We formed a working group to begin studying measures to address this issue.

Our progress in reducing HFCs, a prohibited rank substance, is proceeding substantially ahead of the Kigali Amendment to the Montreal Protocol, which targets a reduction of 85% or more by 2036. We expect to achieve this target by the end of fiscal year 2026.

Nikon Group PRTR and VOCs

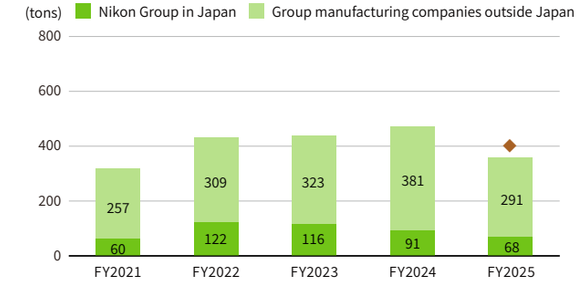
At the Nikon Group in Japan and Group manufacturing companies outside Japan, we use the unique Hazardous Chemical Substances Guideline to reduce the use of and manage chemical substances subject to inclusion in a pollutant release and transfer register (PRTR)[*1], and also carry out safety controls on the handling and disposal of these substances based on the safety data sheets (SDS). In addition, the Nikon Group carries out environmental information surveys related to substances falling under PRTR Class I Designated Chemical Substances or Specific Class I Designated Chemical Substances, twice a year to compile data on uses, disposals, transfers, recycling, etc. We conduct the surveys for substances of which 100 grams or more are handled per year, implementing internal management that is more rigorous than the PRTR in Japan, which only requires reporting for substances of which 0.5 tons (Specific Class I Designated Chemical Substances) or 1 ton or more (Class I Designated Chemical Substances) are handled per year.

We established reduction targets for our efforts to reduce the amount of volatile organic compounds (VOC)[*2] emitted into the atmosphere, and conduct surveys twice every year to monitor status. We implement measures to make cleaning equipment more airtight, improve the rate of reuse, and otherwise reduce atmospheric emissions. For fiscal year 2025, VOC emissions totaled 68 tons from the Nikon Group in Japan and 291 tons from Group manufacturing

companies outside Japan. These figures represent a 24% reduction compared with the previous fiscal year.

*1 PRTR: A system for issuing a notice of the release and transfer of chemical substances under the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
*2 VOC: The Nikon Group addresses the 100 major VOCs listed by the Ministry of the Environment.

● VOC Emissions of the Nikon Group in Japan and Group Manufacturing Companies Outside Japan



◆:Values in Data Index assured by a third party
Note: VOCs mentioned here mean the 100 major VOCs as indicated by the Ministry of the Environment

Control and Disposal of Polychlorinated Biphenyl (PCB) Waste

With regard to waste and in-use electrical equipment containing polychlorinated biphenyl (PCB), which can be harmful to living organisms and the environment, the Nikon Group conducts surveys of all Group companies to confirm whether they possess any such equipment, observes stringent safekeeping practices in compliance with relevant laws and regulations, and submits all required notifications to the relevant governmental authorities.

Nikon has completed the treatment of all high-density PCB waste in the Nikon Group. We intended to dispose of any electrical components that may be contaminated with low-density PCBs by the end of fiscal year 2025. However, we discovered additional low-density PCBs, and we plan to take measures during fiscal year 2026 in accordance with the Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes[*3].

*3 The Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes: A special measures law aimed at promoting the appropriate processing of polychlorinated biphenyl (PCB) waste. The disposal deadline is the end of March 2027.

Prevention of Air, Water, and Soil Pollution

Nikon and one Group manufacturing company in Japan reported two cases of a minimal excess of levels allowed by sewer water quality standards (BOD[*4] and SS[*5]).

We follow the government's administrative guidance in response to cases of exceeding allowed levels, including increasing the frequency of cleaning and conducting more water discharge analyses as we endeavor to maintain stable water quality below the maximum standard.

*4 BOD: Biochemical oxygen demand. The amount of oxygen required for microorganisms to decompose organic matter
*5 SS: Suspended solids, suspended particulates. An indicator of water turbidity.