

> Nikon Environmental Management > Environmental Management Promotion System > Realizing a Low-carbon Society > Realizing a Resource-circulating Society > [Realizing a Healthy and Environmentally-safe Society](#)

Realizing a Healthy and Environmentally-safe Society

The Nikon Group sets environmental targets addressing products and business facilities, relating to chemical substance management tailored to the provision of healthy and environmentally-safe products, as well as making a positive contribution towards maintaining the natural environment in the local community. We work steadily towards the realization of these targets.

Reducing the Use of Hazardous Substances in Products

The Nikon Group has formulated a range of measures for all of our products, to reduce the use of hazardous substances and ensure compliance with international regulations governing hazardous substances.

■ Responding to Regulations on Hazardous Chemical Substances

To safeguard human health and reduce environmental risks, the Nikon Group strives to implement rigorous chemical management that adheres to international regulatory frameworks. We have also responded proactively to the introduction of environmental laws and regulations worldwide, including the EU's RoHS directive*¹ and REACH regulation*².

As Nikon products are made from a very large number of materials and components, we work closely with our procurement partners to reduce the use and discharge of hazardous substances in the supply chain.

*1 RoHS directive
See P30

*2 REACH regulation

A regulation on chemical substances issued by the EU 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.

Main Measures for Chemical Substance Management

1. Researching on 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 via 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
 - Providing instructions regarding reduction or switching over to alternatives to hazardous chemical substances, etc.
 - Formulating and updating the Nikon Green Procurement Standards
5. Confirming appropriate response to laws and regulations
 - Implementing assessments
6. Confirming the chemical management implementation status of procurement partners, and helping them to upgrade it
 - Auditing procurement partners' chemical substance management systems
 - Providing support to help procurement partners establish chemical substance management systems

▶ REACH Compliance

http://www.nikon.com/about/sustainability/environment/Nikon_REACH.pdf

■ Discontinuing the Use of All Ozone-layer-depleting Substances

The Nikon Group gradually decreased the use of ozone-layer-depleting hydrochlorofluorocarbons (HCFCs), which were used as refrigerants needed to regulate the temperature in semiconductor and flat-panel display (FPD) lithography systems, and finally discontinued their use in all Nikon products for equipment shipped

in and after the year ended March 31, 2009.

■ Adoption of Technology that Does Not Use Hazardous Substances

The Nikon Group has worked to develop technology that does not use hazardous substances.

Development of lead- and arsenic-free glass

In the 1990s the Nikon Group developed lead- and arsenic-free glass*, as we recognized that the lead and arsenic used in most optical glass at that time had a serious environmental impact.

Across-the-board adoption of lead-free solder technology

The Nikon Group has adopted a thorough-going approach to the adoption of lead-free solder. Today, the ratio of lead- and arsenic-free glass, and lead-free solder, in new designs is 100%, with the exception of certain products with special specifications for industrial use.

Adoption of hexavalent chromium-free technology for surface treatment processes

We have 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, and we ensure that these standards are followed by providing individual technical support for our procurement partners contracted to perform surface treatment processes, and by implementing chemical analysis of finished products.

* Lead- and arsenic-free glass

For the optical glass used in the lenses and prisms of optical instruments, Nikon has developed a new type of glass that contains absolutely no lead or arsenic.

The ratio of lead- and arsenic-free glass is 100% used now in almost all Nikon product lines.

Promoting Green Procurement

Working in collaboration with our procurement partners, the Nikon Group works to realize Green Procurement in the supply chain.

■ Approach to Green Procurement

The Nikon Group’s fundamental approach to Green Procurement, based on the Nikon Basic Green Procurement Policy, is to give priority to the purchase of items produced while taking environmental issues into consideration and suppliers who are proactive in caring for and conserving the environment. In concrete terms, when signing contracts with procurement partners, we require them to implement environmental management equivalent to that specified by the Nikon Green Procurement Standards, to follow the provisions of the Standards when implementing management of chemical substances in their products, and to put in place the relevant systems. With regard to management of chemical substances in products, the “Separate Volume – Corresponding Chemical Substance List” compiled as an annex to the Nikon Green Procurement Standards specifies which chemical substances are prohibited and which must be specially managed, and procurement partners are expected to follow these requirements. Both the Standards and the List are revised and updated regularly in line with domestic and international laws and regulations.

[Nikon Green Procurement Standards](http://www.nikon.com/about/corporate/procurement/green/)
<http://www.nikon.com/about/corporate/procurement/green/>

■ Green Procurement Promotion System

To ensure thorough implementation of Green Procurement activities, besides formulating relevant rules and

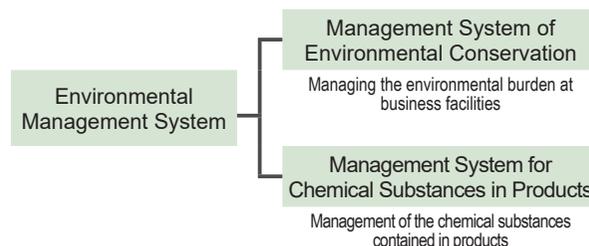
procedures, the Nikon Group has also established the Green Procurement Promotion Conference, under the Supply Chain Subcommittee. The Council discusses and implements specific activities and measures, and conducts management of Green Procurement promotion.

■ Building Environmental Management Systems through the Supply Chain

The Nikon Group’s procurement partners include approximately 1,700 companies engaged in the manufacturing of raw materials, components, etc. For these procurement partners involved in manufacturing, the Nikon Group holds presentations about the surveys of chemical substances in products, and Nikon Group requires them to comply with chemical substance regulations in accordance with the Nikon Green Procurement Standards, and to put in place and utilize environmental management systems that meet the requirements of the Standards.

The Nikon Group’s environmental management system comprises the management system of environmental conservation and the management system for chemical substances in products. With regard to the management system for environmental conservation, many of the Nikon Group’s procurement partners have been awarded ISO 14001 or Eco-Action certification, and in the year ended March 31, 2017, there were no reports of any procurement partners being involved in violations of environment-related laws.

Environmental Management System



■ Environmental Management System Audit and Nikon Environmental Partner Certification

The Nikon Group selects roughly 550 manufacturing-related procurement partners to be the targets of environmental management system audits, taking into account the risk of the procurement partner being involved in a violation of environmental-related laws or regulations; audits are then implemented sequentially, targeting these companies. If the audit results show any deficiencies in environmental management systems, the procurement partner in question will be required to remedy the situation. In the case of procurement partners that have not yet put an environmental management system in place, depending on the circumstances the Nikon Group may provide support to help them establish their own system. Those procurement partners that meet the environmental management system requirements specified by the Nikon Green Procurement Standards are certified as Nikon Environmental Partners. This certification must be renewed, through a further audit, once every three years. Every year, a target is set for the cumulative total number of procurement partners that have been certified. In the year ended March 31, 2017, the target of 375 companies was met; the target for the year ending March 31, 2018 is 415 companies. Internal audits are also implemented targeting business divisions within the Nikon Group itself, to verify the status of management system for chemical substances in products establishment.

Nikon Group Audit and Certification Performance

(Unit: companies)

Category	Performance in the year ended March 31, 2017	Cumulative total
Audits	First audits: 59	439
	Repeat audits: 86	
Environmental Partner certification	New certifications: 58	407
	Certification renewals: 86	

Contents / Editorial Policy	Message from the President	Nikon Group Profile	Nikon CSR	Product Responsibility	Environmental Management	Respect for Human Rights	Labor Practices	Supply Chain Management	Community Contribution Activities	Foundations of Management	Data Index etc.
-----------------------------	----------------------------	---------------------	-----------	------------------------	---------------------------------	--------------------------	-----------------	-------------------------	-----------------------------------	---------------------------	-----------------

> Nikon Environmental Management > Environmental Management Promotion System > Realizing a Low-carbon Society > Realizing a Resource-circulating Society > [Realizing a Healthy and Environmentally-safe Society](#)

■ Cultivation of Environmental Management System Auditors

To ensure that we are able to implement environmental management system audits to a high standard both in and outside Japan, the Nikon Group cultivates auditing personnel.

Personnel working in the quality assurance departments and procurement departments of individual business units undergo training relating to procurement partner environmental audits, and are tested; those who pass the tests are registered as environmental management system auditors.

To support the cultivation of audit team leaders, who play a particularly important role in auditing work, an Environmental Management System Audit Team Leader Requirements Checklist (Version 2) has been drawn up. Besides using this checklist to drive improvements in audit content, efficiency is being enhanced by shifting the main focus of auditing activities to the business unit level.

Status of Environmental Management System Auditors (Year Ended March 31, 2017)

	Personnel undergoing training	Auditors
In Japan	17	111
Outside Japan	0	19

■ Procurement-related Employee Education

In Nikon Group in Japan, Green Procurement training is included as part of the Buyer Training undergone by all employees newly assigned to procurement roles.

In Group companies outside Japan, also, presentations are arranged for employees.

> Nikon Environmental Management > Environmental Management Promotion System > Realizing a Low-carbon Society > Realizing a Resource-circulating Society > [Realizing a Healthy and Environmentally-safe Society](#)

Management and Reduction of Hazardous Chemical Substances

The Nikon Group properly manages and works to reduce chemical substances in each business facility and Group manufacturing company. We also report and disclose information in line with relevant laws and guidelines.

In addition, to prevent air pollution, water pollution and soil contamination caused by the emission of hazardous chemical substances, besides complying with relevant laws and regulations, we also implement various other measures, including the signing of agreements between business facilities and local civic organizations, and the adoption of voluntary standards.

Control and Reduction of Chemical Substances in Manufacturing

The Nikon Group continues to strive to reduce the risk of environmental pollution as close as possible to zero, by implementing environmentally-friendly management of chemical substances from purchase and use through to disposal, so as to prevent environmental pollution.

When any new chemical substance is purchased for the first time, the Nikon Group always obtains a safety data sheet (SDS)*, and the workplace where the substance will be used conducts a prior assessment of the risks associated with that substance. The measures implemented based on the assessment are then checked and confirmed by the environment, safety and health department from an expert's perspective.

With regard to chemical substances with a high environmental impact that are specified as such in laws and ordinances, the local Environmental Subcommittee etc. implements thorough management aimed at reducing use of the substance in question, and research into alternative

substances that can be used instead. For example, in the year ended March 31, 2016, a Countermeasures Working Group was established to consider possible alternative substances and the adoption of recycling equipment, etc., with the aim of reducing the quantity of volatile organic compounds (VOCs) released during cleaning processes.

* Safety Data Sheet (SDS)

To promote improvements in the appropriate management of chemical substances by business enterprises, when a chemical substance specified by the Chemical Substances Control Law (CSCL), 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.

The Nikon Group's PRTR

Nikon Group in Japan implement appropriate management of the chemical substances used in each business facility in accordance with the Nikon PRTR Guide which was compiled in March 2000. The Guide content covers quantitative management at every stage from purchase through use to disposal, handling in accordance with safety data sheets (SDSs), and safe management of waste. The Guide is revised as necessary to reflect recent changes in relevant laws and regulations.

PRTR Survey Results (Year Ended March 31, 2017)

(Unit: kg)

Business facility		Nikon					Group manufacturing companies in Japan			
Substance no.	20	71	185	384	392	53	66	80	185	
Substance name	2-amino ethanol	Ferric chloride	Dichloro penta fluoro propane	1-bromo propane	Normal hexane	Ethyl benzene	1,2-Epoxy butane	Xylene	Dichloro penta fluoro propane	
Volume handled	2,051	714	45	17,713	2	78	3	98	1,605	
Amount released	Air	0	0	45	17,712	2	70	3	88	1,605
	Public water	0	0	0	0	0	0	0	0	0
	Amount in on-site landfill	0	0	0	0	0	0	0	0	0
	Soil	0	0	0	0	0	0	0	0	0
Amount transferred	Sewage	0	0	0	0	0	0	0	0	0
	Waste	2,051	714	0	1	0	8	0	10	0
Business facility		Group manufacturing companies in Japan							Total	
Substance no.	300	305	359	384	392	405	411	420		
Substance name	Toluene	Lead compounds	N-butyl-2,3-epoxy propyl ether	1-bromo propane	Normal hexane	Boron compounds	Form aldehyde	Methyl methacrylate		
Volume handled	2,392	8,839	0	24,944	38	6,619	0	0	65,141	
Amount released	Air	2,287	10	0	24,882	38	30	0	0	46,773
	Public water	0	0	0	0	0	2	0	0	2
	Amount in on-site landfill	0	0	0	0	0	0	0	0	0
	Soil	0	0	0	0	0	0	0	0	0
Amount transferred	Sewage	0	0	0	0	0	0	0	0	0
	Waste	104	8,829	0	62	0	6,587	0	0	18,367

* Nikon: The Head Office, Oi Plant, Shonan Branch and Mito Plant do not handle substances that are subject to reporting.

* Main Group companies in Japan: Nikon Instech Co., Ltd., Nikon Systems Inc., and Nikon Vision Co., Ltd. do not handle substances that are subject to reporting.

* The figures given for total volume handled may vary slightly from the subtotals due to rounding.

* PRTR: In Japan, the Pollutant Release and Transfer Register (PRTR) system is a system used by government to collect, tabulate and disclose data on chemical substances that might have harmful effects on human health and ecosystems. PRTR data are compiled by companies and reported to the government on an annual basis for collation and publication.

Contents / Editorial Policy	Message from the President	Nikon Group Profile	Nikon CSR	Product Responsibility	Environmental Management	Respect for Human Rights	Labor Practices	Supply Chain Management	Community Contribution Activities	Foundations of Management	Data Index etc.
-----------------------------	----------------------------	---------------------	-----------	------------------------	---------------------------------	--------------------------	-----------------	-------------------------	-----------------------------------	---------------------------	-----------------

> Nikon Environmental Management > Environmental Management Promotion System > Realizing a Low-carbon Society > Realizing a Resource-circulating Society > [Realizing a Healthy and Environmentally-safe Society](#)

■ Control and Disposal of Polychlorinated Biphenyl (PCB) Waste

The Nikon Group observes stringent safekeeping and notification practices for waste and in-use electrical equipment containing polychlorinated biphenyl (PCB), which can be harmful to the environment, in compliance with relevant laws and regulations.

The business facilities that use the types of equipment in question include three Nikon plants and three Group manufacturing companies in Japan. The main types of equipment involved are capacitors (creating high-density PCB waste) and transformers (creating low-density PCB waste).

Besides the high-density PCB waste that has already been disposed of properly, we also plan to dispose of the remaining PCB-containing waste and electrical equipment in use. This will be carried out so as to meet the deadline specified in the Act on Special Measures Concerning Promotion of Proper Treatment of PCB Wastes (PCB Special Measures Law)*, in cooperation with Japan Environmental Storage & Safety Corporation (JESCO) for high-density PCB waste and with a government-certified waste disposal operator for low-density PCB waste.

* Low Concerning Special Measures for Promotion of Proper Treatment of PCB Wastes
The Low Concerning Special Measures for Promotion of Proper Treatment of PCB Wastes (PCB Special Measures Law) is a special measures law aimed at promoting the appropriate processing of polychlorinated biphenyl (PCB) waste. Under this law, business operators that had PCBs in storage were required to properly dispose of them by July 2016; following a partial revision of the Act in December 2012, this deadline was extended to March 2027.

■ Prevention of Air, Water and Soil Pollution

Neither Nikon nor any Group manufacturing company in Japan emitted regulated substances into the air at levels exceeding those permitted by the relevant standards in the year ended March 31, 2017. There was one case of wastewater quality not meeting the legally-mandated standards; however, appropriate measures were taken, and the situation had been remedied by the following month.

More detailed information, and data for each business facility, are available in the environmental data sheets for business facilities.

Community Contribution Activities in the Environmental Field

Recognizing that the need to resolve environmental problems is a pressing issue that is shared by all countries throughout the world, the Nikon Group provides support for environmental conservation activities undertaken by NPOs and NGOs, and implements activities aimed at spreading environmental awareness among the next generation. We are also undertaking environmental conservation activities rooted in local communities at business facilities and Group companies.

■ Supporting the AKAYA Project in Japan

Since 2005, the Nikon Group in Japan has been supporting the AKAYA Project, which aims to restore biodiversity and build a sustainable regional community. The focus of this project is the Akaya Forest, a 10,000-hectare National Forest that is located mainly within Minakami Township in Gunma prefecture, but extends into Niigata prefecture. This project involves a range of activities being implemented jointly by the government, local residents and The Nature Conservation Society of Japan (NACS-J), using scientific, empirical forest-restoration techniques to restore biodiversity. As part of the AKAYA Project, starting in 2014 measures have been implemented to improve the habitat of the critically-endangered Japanese Golden Eagle; the Nikon Group has donated binoculars and digital cameras that have been used for monitoring the Golden Eagle behavior.



Full view of the Akaya Forest

■ Supporting the Children's Forest Program in Thailand

Since 2012, Nikon has been supporting the Children's Forest Program in Thailand—an international program organized by The Organization for Industrial, Spiritual and Cultural Advancement - International (OISCA). The Children's Forest Program is a global project that seeks to expand the world's forests through awareness-raising activities aimed at children and through tree-planting activities.

In Thailand, the Children's Forest Program has focused mainly on northern Thailand, where there is an urgent need to strengthen forests' watershed protection function; activities are being implemented to raise awareness of the importance of forest conservation among local residents and their children, and to promote tree-planting near schools. Since 2015, tree-planting activities have been carried out in Maekpaklae Village in northern Thailand as a pilot project; in the year ended March 31, 2017, local residents and their children planted a total of around 2,500 trees on 2 hectares of land.



Tree planting in Chiang Kong (photo courtesy of OISCA Thailand)

■ Environmental Awareness-raising Activities for Children

The Nikon undertakes a range of environmental awareness-raising activities, including the holding of workshops and the distribution of booklets, aimed at enhancing children's awareness of the importance of forests and the need to safeguard biodiversity. At the "AKAYA Forest Castanets" workshop, held in collaboration with the Nature Conservation Society of Japan (NACS-J), children enjoy a Kamishibai performance (a traditional Japanese children's entertainment that combines storytelling with pictures that illustrate the stories) featuring animals such as

bears and Japanese Golden Eagles that live in the forest, and the children also have the opportunity to decorate wooden castanets that are made from timber sustainably harvested from beech trees and Yamazakura cherry trees planted to regenerate the Akaya Forest. In the year ended March 31, 2017, this workshop was held at the Nikon Mito Plant booth at the Mito City Environmental Fair, and at a Minato Eco-Conscious Consortium event held in the Minato District of Tokyo.

Nikon has also created the "AKAYA NOTE" booklet, a learning tool with the Akaya Forest as its topic that provides a fun way for children to learn about biodiversity; this brochure is distributed free of charge to schools etc. To date, a total of around 7,000 copies have been printed and distributed, and these brochures are now being extensively used by schools and at nature study sessions, etc.



A workshop being held at the Mito City Environmental Fair

■ Community Contribution Activities

As part of our efforts to make a positive contribution towards preserving the natural environment in the local communities where we operate, in addition to everyday activities such as cleaning and cutting grass in the areas around our business facilities, Nikon and Group manufacturing companies in Japan are also participating actively in, and providing support for, local environmental conservation activities and regional revitalization activities.

In the year ended March 31, 2017, a total of around 1,200 employees of Nikon business facilities participated in these types of activities.



Clean-up activity in the area around a Nikon manufacturing facility (Mito Plant)