

Basic Concept

The UACJ Group is thankful for the earth and the abundance of life it supports. That feeling underlies our basic stance on the environment, and we have publicly declared our aim to reduce our environmental burden in all aspects of our business activities.

The economic activities of humankind are now of such a scale that they are having enormous impacts on the global environment and giving rise to various problems, including extreme weather, imbalances in ecosystems, and depletion of natural resources. These are sustainability risks for the UACJ Group and ultimately for the earth. Our basic stance on the environment, therefore, is to ascertain what we can do to lower our environmental burden and then work steadily to achieve what is possible.

Key Objectives and Results

	Fiscal 2017 Objective	Fiscal 2017 Performance	Assessment	Fiscal 2018 Objective
Elimination of Serious Environmental Accidents	Zero accidents	1 accident	×	Zero serious accidents
Measures to Fight Global Warming	Reduction of energy used per unit of production	0.4% decrease per unit of production	○	Reduction of energy used per unit of production
Realization of a Recycling-Oriented Society	Reduction of waste generated per unit of production	2.7% decrease per unit of production	○	Reduction of waste generated per unit of production
	Continuation of zero emissions*	Maintained zero-emissions performance	○	Continuation of zero emissions*
Chemical Substance Control	Reduction of controlled chemical substances	Identified controlled chemical substances at all business locations	○	Reduction of controlled chemical substances

* Within the UACJ Group, "zero emissions" is defined as direct landfill disposal of less than 1% of all industrial waste generated.

Looking to the Future

In fiscal 2017, the final year of the Mid-term Management Plan, we came very close to completing the transfer of products among manufacturing facilities to optimize production and saw benefits from our energy-saving initiatives. We, therefore, were able to achieve our per-unit-production objective for energy usage, even with a decline in production volume.

In fiscal 2018, we will take additional steps and try new approaches to achieve progress toward our objective.

Comment by the Executive in Charge

Aluminum is regarded as an environmentally friendly metal because it is easy to recycle and, in recent years, increasingly expected to be a useful material for reducing vehicle weight as automakers comply with stricter environmental regulations. With demand for aluminum on the rise, the UACJ Group is focusing on supplying a wide range of aluminum materials and products by leveraging its entire group-wide network of operations, including R&D facilities. These activities have been designated as priority measures under our mid-term management plan launched in April 2018.

Over the past few years, we have initiated various environmental measures in our manufacturing operations. For example, a group company in the United States recently began operating a new furnace for melting scrap aluminum at its factory, enabling it to increase the ratio of recycled aluminum in the overall raw materials it uses.

As a world-class aluminum manufacturer, the UACJ Group intends to continue making the most of aluminum's diverse properties to help reduce environmental burden and contribute to society through its manufacturing processes and products.



Hiroyuki Fukui
Managing Executive
Officer

UACJ Group Basic Environmental Policies

Corporate Philosophy

The UACJ Group is thankful for the earth and the abundance of life it supports, and recognizes that the fate of all living things hangs on the condition of the earth's environment. Therefore, we see protection of the global environment and the promotion of a recycling-oriented society as one of our highest priorities and are committed to reducing environmental impact in all aspects of our business activities.

Guidelines

1. We will make the necessary organizational arrangements and allocate the required management resources to advance activities that are cognizant of the need to protect the global environment.
2. We will work to continuously improve the quality of our environmental protection activities by assessing the environmental impacts of our present and future business activities and using the results to establish technologically and economically practical environmental improvement measures and specific objectives.
3. We will abide by environmental laws, regulations, and agreements, and formulate our own standards in actively working to protect the environment. At the same time, we will advance activities cognizant of the need to improve work environments, as well.
4. We will work to reduce our resource and energy usage, promote recycling, reduce waste, and properly manage chemical substances in all aspects of our business activities, which extend to the environmental impacts of the products we handle.
5. We will work to maintain or improve the environment by conducting environmental audits and constantly revising environmental management items and standards.
6. We will work to raise environmental awareness among all of our employees by using internal Group-wide communications activities and other measures to promote understanding of our basic stance on the environment.
7. We will contribute to and develop ties with local communities.

Given our basic stance on the environment, as set forth above, we are pursuing the following activities.

1. Measures to fight global warming and reduce CO₂
 - (1) Advancement of energy-saving measures
 - (2) Advancement of fuel conversion
2. Development of a recycling-oriented society
 - (1) Advancement of the 3R^(*1) resource conservation measures
 - (2) Increasing our scrap usage ratio
 - (3) Reduction of industrial waste generated

- (4) Reduction of landfill waste generated
- 3. Proper control of chemical substances
 - (1) Proper control of chemical substances in products
 - (2) Reduction of volatile organic compounds (VOCs)
 - (3) Reduction of PRTR^(*2) substances
 - (4) Establishment of an environmental quality management system that is trusted by customers
- 4. Compliance with laws and ordinances
 - Compliance with domestic and overseas laws and ordinances
- 5. Establishment of an environmental management system
 - Continuous improvement and enhancement of our environmental stewardship through the application of an environmental management system.
- 6. Promotion of environmental education
 - Steps to enlighten all employees and raise their awareness on environmental matters.
- 7. Improvement of the environmental performance of aluminum products
 - Contributions to the improvement of the environmental performance of our customers' products by developing and providing materials that make the most of aluminum's beauty and its environmentally harmonious characteristics of being light-weight and rustproof
- 8. Contributions to and ties with local communities.

*1 3Rs: Reduce, Reuse, Recycle

*2 The PRTR (Pollutant Release and Transfer Register) Law promotes improvement in the determination and control of amounts of designated chemical substances released into the environment.

UACJ Group Environmental Management Direction

Fiscal 2017 UACJ Group Environmental Management Direction

Area	Objective
Elimination of environmental accidents	Zero accidents
Advancement of measures to fight global warming	Per-unit-production reduction of energy consumption
Building of a recycling-oriented society	Per-unit-production reduction of industrial waste volume
	Objective Continuation of zero emissions
Proper control of chemical substances	Per-unit-production reduction of controlled chemical substances

Environmental Management Direction for Fiscal 2018

Item	Objective
Elimination of environmental accidents	Zero accidents
Advancement of measures to stop global warming	Reduction of energy usage per unit production
Creation of a recycling-oriented society	Reduction of industrial waste per unit production
	Continuation of zero emissions
Proper management of chemical substances	Reduction of controlled chemical substance usage

* Efforts will focus on chemical substances with the largest environmental impacts on a production-site basis.

Approach to Environmental Management

To advance environmental activities and raise the environmental awareness of employees, the UACJ Group has established the Environmental Committee as a body that represents the entirety of the Group.

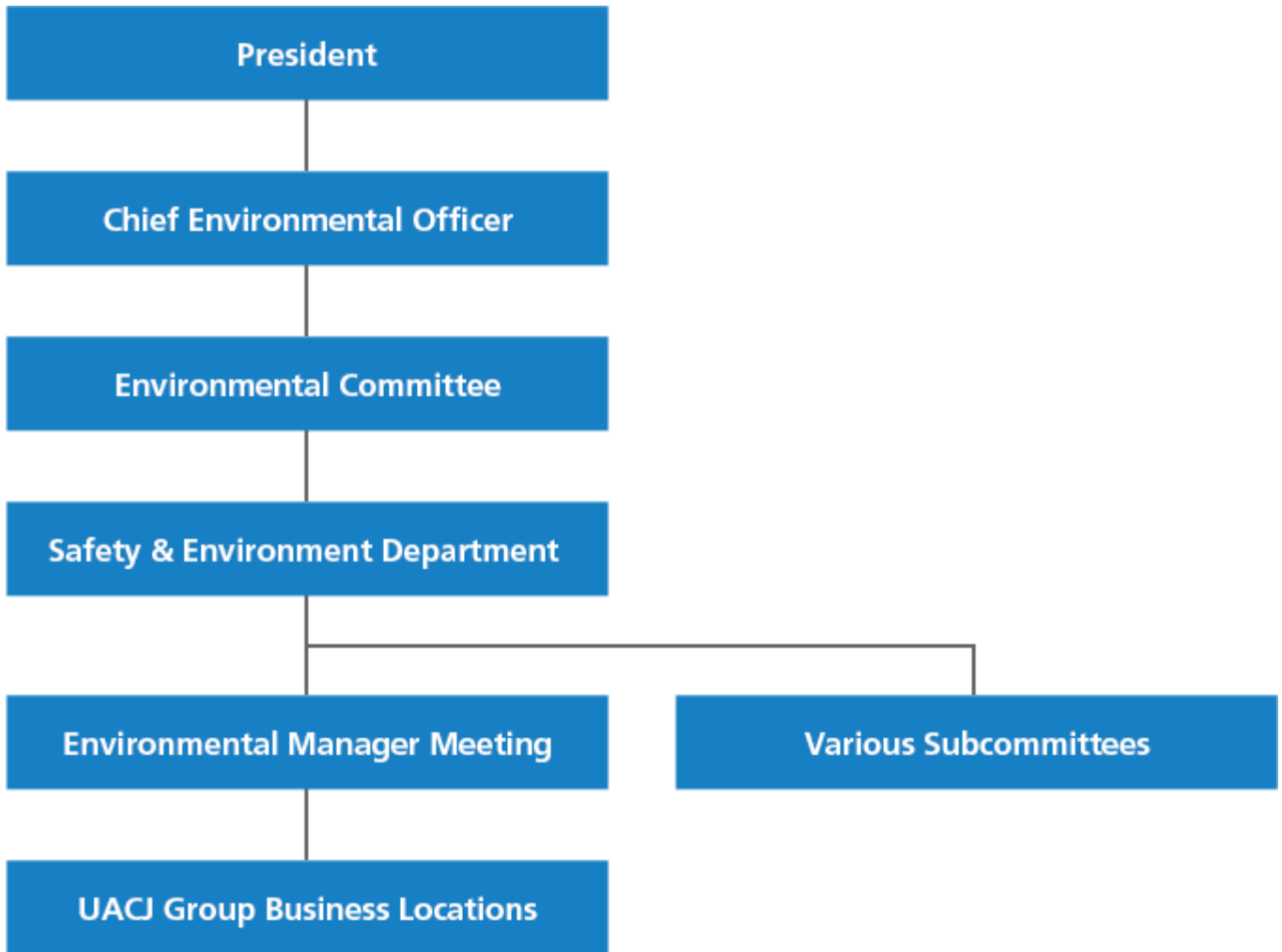
The Environmental Committee, chaired by the Chief Environmental Officer, has a membership consisting of UACJ executives, plant managers, and presidents of principal Group companies. The committee meets once a year, in principle, to be updated on the status of environmental activities, and discuss aims and objectives for the following fiscal year's environmental activities.

To link environmental activity objectives with business activities and reliably work for their achievement, we have established the Safety & Environment Department as a unit responsible for implementation. The Safety & Environment Department holds meetings for Environmental Managers, conducts Executive Environmental Inspections, and organizes subcommittees on topics such as industrial waste and energy saving in performing the function of implementing and refining environmental activities.

Environmental Manager Meetings

The Environmental Managers of UACJ's four main works, and principal extrusion, foil manufacturing, copper tube, and precision-machined components plants come together in meetings where they review progress in achieving the UACJ Group's environmental objectives, and share information on matters like changes in relevant laws.

Environmental Management Organization



Environmental Management System

Environmental management systems are in place at each of the UACJ Group's business locations, and nearly all of our plants have obtained the ISO14001 certification. Some of our smaller business locations have obtained the Eco-Action 21 certification by following the guidelines formulated by Japan's Ministry of the Environment.

Following the September 2015 issuance of the updated ISO14001 standard, each business location worked to achieve compliance with the new standard. All locations successfully updated their certifications as of the July 2018 deadline for doing so.

ISO14001 Certifications (as of July 31, 2018)

Business Location	Certifying Institution	Certification Number	Date Obtained
Nagoya Works	JIC Quality Assurance Ltd. (JICQA)	E440	2002.4
Fukui Works	Det Norske Veritas (DNV)	00484-2002-AE-KOB-RvA	2002.4
Fukaya Works	Japan Standards Association	00484-2002-AE-KOB-RvA	2002.7
Nikko Works	Det Norske Veritas (DNV)	1851-2002-AE-KOB-RvA/JAB	2002.3
UACJ Color Aluminum Corporation	Det Norske Veritas (DNV)	00789-2003-AE-KOB-RvA	2003.5
UACJ Extrusion Oyama Corporation	Det Norske Veritas (DNV)	00583-2002-AE-KOB-RvA	2002.9
UACJ Extrusion Nagoya Corporation, Nagoya Works, Anjo Works	JIC Quality Assurance Ltd. (JICQA)	E440	2002.4
UACJ Extrusion Shiga Corporation	Det Norske Veritas (DNV)	00583-2002-AE-KOB-RvA	2002.9
UACJ Extrusion Gunma Corporation	JIC Quality Assurance Ltd. (JICQA)	E773	2004.1
UACJ Foil Corporation, Isesaki Works, Shiga Works, Nogi Works)	JIC Quality Assurance Ltd. (JICQA)	E2442	2017.3
Nikkin Co., Ltd.	JIC Quality Assurance Ltd. (JICQA)	E2442	2018.6
UACJ Foundry & Forging Corporation	Det Norske Veritas (DNV)	00583-2002-AE-KOB-RvA	2002.9
HIGASHI NIHON TANZO CO., LTD.	Det Norske Veritas (DNV)	00583-2002-AE-KOB-RvA	2002.9
UACJ Copper Tube Corporation	JIC Quality Assurance Ltd. (JICQA)	E281	2001.5
Toyo Fitting Co., Ltd.	JIC Quality Assurance Ltd. (JICQA)	E1610	2006.3

Business Location	Certifying Institution	Certification Number	Date Obtained
UACJ Metal Components Corporation, Sendai Works, Osaka Works, Hiroshima Works	Japan Quality Assurance Organization	JQA-EM3314	2003.8
UACJ Metal Components Corporation, Ena Works	The High Pressure Gas Safety Institute of Japan	04ER-420	2004.3
UACJ Metal Components Corporation, Shiga Works	Japan Quality Assurance Organization	JQA-EM6018	2007.12
NALCO Koriyama Co., Ltd.	JIC Quality Assurance Ltd. (JICQA)	E1711	2007.2

Eco-Action 21 (as of July 31, 2018)

Business Location	Certifying Institution	Certification Number	Date Obtained
UACJ Metal Components Corporation, Narita Works	Chibaken Kankyo Zaidan	0000341	2005.5
UACJ Color Aluminum Corporation	Institute for Promoting Sustainable Societies	12021	2017.10

Executive Environmental Inspections

Executive Environmental Inspections are carried out at Group business locations in Japan to prevent environmental problems, propose and advance implementation of measures for eliminating or mitigating risk, and ensure thorough compliance with environmental laws and regulations.

The inspection team, consisting of the Chief Environmental Officer and representatives from the Safety & Environment Department, visits business locations, receives reports on local environmental management, and checks local conditions in gathering information on matters such as legal and regulatory compliance, and the status of improvement activities. When matters requiring improvement are identified, the Safety & Environment Department provides guidance and support in taking the necessary corrective action. Through this approach, the quality of environmental management throughout the Group is being raised from the bottom up.

In fiscal 2017, Executive Environmental Inspections were conducted at a total of 14 business locations.

| Status of Compliance with Environmental Laws and Regulations

In fiscal 2017, there was one accident in which an environmental wastewater standard was violated. On September 17, 2017, a release of wastewater with a pH (the standard for hydrogen ion concentration) of 8.7 occurred at UACJ Copper Tube Corporation's plant. The standard calls for a pH of 5.8 to 8.6, and the release was into a river. The accident was caused by the growth of algae in a pond on the plant grounds and the consumption of CO₂ as a result of photosynthesis. This was a natural phenomenon that occurred during a brief period of time and there were no impacts on the river. To prevent a recurrence, measures are being developed to control the growth of algae.

Environment-Related Investment

The UACJ Group's fiscal 2017 environment-related investments totaled approximately 1.1 billion yen. These funds were used for purposes such as updating electrical equipment for hot-rolling facilities and adding electrostatic precipitators at the Nagoya Works, updating the wastewater treatment facility at the Fukaya Works, and switching to LED lighting fixtures at various business locations.

Environmental Education

We conduct environmental education for all employees as another measure for fulfilling our social responsibility to protect the global environment.

The Safety & Environment Department and the environment units of individual business locations lead environmental education initiatives. The Safety & Environment Department conducts fundamental environmental education activities, the purposes of which are to enlighten and raise awareness of environmental protection, and promote understanding of the UACJ Group's Basic Stance on the Environment. Meanwhile, the environment units of individual business locations carry out environmental education initiatives to foster the skills and numbers of internal auditors needed to ensure that each business location conducts its daily activities with sensitivity toward the environment. In fiscal 2016, internal auditor training also included content on changes included in the 2015 edition of the ISO14001 standard.

We encourage employees to obtain public qualifications in environmental fields and are developing a workforce that is capable of appropriately responding to trends in environmental regulation. Individual business locations conduct general environmental education programs and special education programs for employees engaged in work that could have significant environmental impacts.

Numbers of Employees with Environmental Management Qualifications (As of March 31, 2018)

Qualification	Qualified Employees
Pollution Control Manager - Air	46
Pollution Control Manager - Water	63
Pollution Control Manager - Noise	22
Pollution Control Manager - Vibration	28
Pollution Control Manager – Noise & Vibration	16
Pollution Control Manager – Dioxins	25
Energy Manager	67
Certified Environmental Measurer	3
Manager Responsible for Industrial Waste Requiring Special Controls	81
ISO14001 Internal Auditor	414

* Data are for UACJ and Group companies in Japan.

Biodiversity Initiatives

The UACJ Group views the protection of biodiversity as one of the most important global environmental challenges, and we treat it as such within the UACJ Group Code of Conduct. Though the UACJ Group's business model does not have a significant direct impact on biodiversity, we engage in actions we believe will help protect it. Examples of these actions, taken at individual business locations, are given below.

- Reduction of lumber usage in shipping material
- Addition of greenery

| Supply Chain

The UACJ Group's customer base includes a significant number of manufacturers who export products to destinations outside Japan. This is one reason why we are keenly aware of the importance of supply-chain management.

We take steps to ensure that the raw metals we use include no conflict mineral*¹. And we exercise stringent measures to comply with the European Union's REACH*² regulation and RoHS*³ directive, and ensure that our products contain no controlled substances. Furthermore, we make a point of responding appropriately when customers request us to complete a green procurement survey.

*1 Conflict minerals are minerals subject to conflict mineral disclosure regulations under the US Dodd-Frank Act. These minerals include tin, tantalum, tungsten, and gold mined in the Democratic Republic of the Congo or neighboring countries.

*2 The EU's REACH regulation requires the "Registration, Evaluation, Authorization and Restriction of Chemicals."

*3 The EU's RoHS directive requires the "Restriction of Hazardous Substances" and was issued by the European Parliament and the European Council to restrict the use of certain hazardous substances in electrical and electronic devices.

Fiscal 2017 Material Balance

To support efforts to reduce industrial waste and substances of environmental concern, the UACJ Group works to accurately determine conditions with regard to the environmental impacts of its business activities. For fiscal 2017, data on substances of environmental concern and industrial waste were collected for the principal business locations, which comprise more than 95% of the UACJ Group's total energy usage.

Fiscal 2017 Material Balance

INPUT		OUTPUT	
Energy	401,000 kℓ^{*1}	Products	
Kerosene	5,000 kℓ	Al	741,000 t
Fuel oil A	0 kℓ	Cu	48,000 t
Fuel oil C	15,000 kℓ		
Liquefied petroleum gas	26,000 kℓ	Atmosphere	
Liquefied natural gas	34,000 kℓ	CO ₂	759,000 t-CO ₂ ^{*3}
City gas	132,000 kℓ	SOX	56 t
Electricity	188,000 kℓ	NOX	683 t
		Soot and dust	59 t
Raw materials			
Al	750,000 t ^{*2}	Waste	
Cu	48,000 t	Industrial waste	2,988 t ^{*4}
Mn	3,000 t	Direct landfill waste	9 t
Mg	9,000 t	Recycled materials	17,315 t
Si	1,000 t		
Water	13,906,000 t	Wastewater	
Water for industrial use	6,680,000 t		12,063,000 t
River water	3,301,000 t		
Groundwater	3,444,000 t	Chemical substances	
Tap water	482,000 t	Releases	378 t
		Transfers	180 t
PRTR substances			
	4,502 t		

Measurement Scope: 15 locations, including UACJ (Nagoya, Fukui, Fukaya, Nikko), UACJ Color Aluminum Corporation, UACJ Extrusion Nagoya Corporation (Nagoya, Anjo), UACJ Extrusion Oyama Corporation, UACJ Extrusion Gunma Corporation, UACJ Extrusion Shiga Corporation, UACJ Foil Corporation (Isesaki, Shiga, Nogi), UACJ Foundry & Forging Corporation, and UACJ Copper Tube Corporation

*1 Crude oil equivalent

*2 Total of new and recycled metal, scrap, ingots, etc.

*3 Based on an electric power generation CO₂ emissions factor of 0.378kg-CO₂/kWh

*4 The amount of industrial waste consigned to outside parties for processing, less the amount recycled.

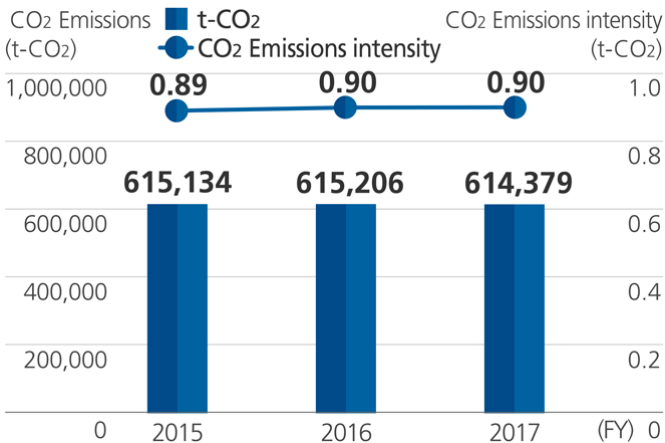
Basic Stance

In light of the need to fight global warming, the pursuit of energy-saving activities is one of the UACJ Group's most important management concerns. Accordingly, we are steadily taking action on this front, focusing on what we can do in the present.

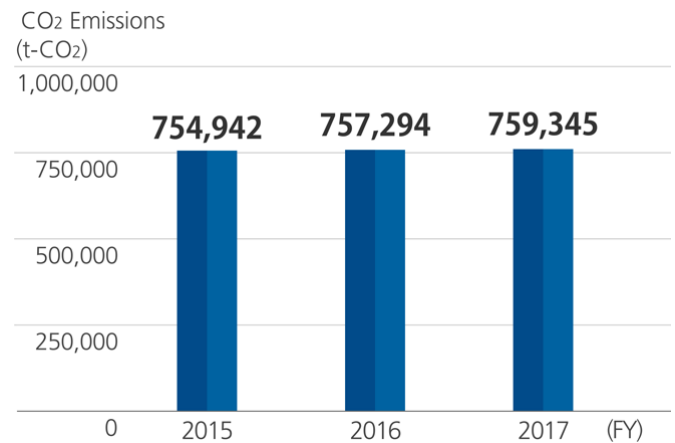
Fiscal 2017 Results

Fiscal 2017, the fifth fiscal year following the merger that created UACJ, was the final year of the Mid-term Management Plan and by the end of the year we had nearly completed our efforts to optimize production by transferring the manufacturing of various products among our works. Domestic production declined slightly, but energy consumption increased marginally compared to the fiscal 2016 level. CO₂ emissions declined slightly compared to fiscal 2016 results for the total and per-unit production (assuming a fixed emissions factor for electric power).

UACJ CO₂Emissions



UACJ Group CO₂Emissions



*1 The CO₂ emissions factor is the one used for electricity generation, 0.378kg-CO₂/kWh.

*2 Measurement Scope: UACJ (Nagoya, Fukui, Fukaya, Nikko), UACJ Color Aluminum Corporation, UACJ Extrusion Nagoya Corporation (Nagoya, Anjo), UACJ Extrusion Oyama Corporation, UACJ Extrusion Gunma Corporation, UACJ Extrusion Shiga Corporation, UACJ Foil Corporation (Isezaki, Shiga, Nogi), UACJ Foundry & Forging Corporation, UACJ Copper Tube Corporation

Main Initiatives in Production Processes

Switching to LNG as a Heat Source for Production Processes

LNG results in 30% lower CO₂ emissions than does heavy oil to generate the same amount of heat. UACJ, therefore, is systematically switching to LNG to provide heat for its production processes.

As of fiscal 2017, LNG (including city gas) accounted for approximately 79% of fuel usage at UACJ's four works, in terms of heat generated.

Energy Saving Subcommittee

At the UACJ Group, meetings of the Energy Saving Subcommittee are held on a regular basis. These meetings serve as opportunities for key participants - representatives of the facilities departments at multiple business locations - to share information, consider differences in facility performance, and hear case presentations, all to achieve further improvements in energy saving endeavors.

Examples of Energy-Saving Activities

The UACJ Group's principal energy-saving activities for fiscal 2017 are given in the table below. In addition to those initiatives, we made adjustments to combustion facilities, updated compressors, replaced deteriorated insulation, applied insulating coatings to reduce heat losses, fixed steam and air leaks, and installed solar panels on plant roofs to save energy at business locations throughout the Group.

Examples of CO₂ Emissions Reductions (New for fiscal 2017)

Business Location	Theme	CO ₂ Emissions Reduction Impact (t-CO ₂ /yr.)
All business locations	Conversion to LED ceiling light fixtures	400
Nagoya Works	Reduction of electricity consumption by updating electrical equipment for rolling facilities	400
Fukaya Works	Reduction of DX gas usage in the annealing furnace	200
Nagoya Works	Reduction of electricity usage by updating electric room air-conditioning facilities	200
Fukaya Works	Reduction of the number of boilers used	200

Main Initiatives in Logistics

UACJ is working to save energy in its logistics processes. Considered a Specified Consignor (*2) under the Energy Saving Law (*1), UACJ has established the goal of a 1% improvement in the 5-year average amount of energy used per ton-kilometer of shipments and is taking steps toward achieving it.

In fiscal 2017, the impacts of measures such as loading factor improvements and use of ship transport reduced the amount of energy used for shipping, per unit of sales, to a level below that for fiscal 2016.

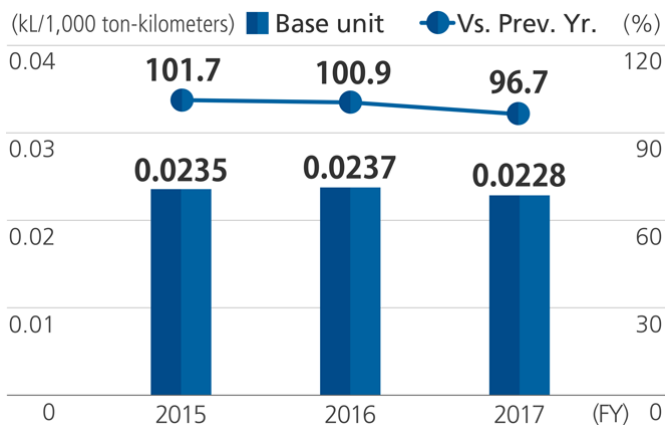
To address another concern, CO₂ emissions, we and business partners in the same industry have been cooperating since 2001 to improve shipping efficiency by jointly transporting certain extruded aluminum products.

*1 Energy Saving Law : Under an ordinance established by the Ministry of Economy, Trade and Industry under the Act on the Rational Use of Energy, a consignor, who is in the position of requesting services from a freight carrier, is required to develop an energy-saving plan, and work to reduce energy consumption.

*2 Specified Consignor :

A consignor whose annual shipments of its own freight equals or exceeds 30 million ton-kilometers

Amount of Energy Used for Shipping, per Unit of Sales



* Figure submitted in regular reports

Main Initiatives in Offices

Energy-Saving Activities in Offices

UACJ's offices are actively working to cut electricity usage by implementing the Japanese government's "cool biz" and "super-cool biz" hot-weather measures, raising thermostats in the summer and lowering them in the winter, and systematically turning off lighting, electronic devices, and other electricity-consuming items when not in use.

| Office-Based Environmental Protection Measures

As environmental protection initiatives, individual UACJ offices separate waste into paper and plastic, and recyclables into newsprint, copy paper, magazines, and cardboard.

For office supplies, items complying with the Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities and eco-mark items are purchased to the extent possible.

Basic Stance

The UACJ Group believes it would be ideal if products could be made without giving rise to any substances negatively impacting the environment, anywhere within the supply chain. That ideal is at the root of our constant efforts to prevent contamination by chemical substances.

Fiscal 2017 Results

For discharges of environmental pollutants accompanying its production activities, the UACJ Group has set and abides by pollutant discharge standards that are stricter than those of Japan's Air Pollution Control Law, Water Pollution Control Law, local government ordinances, and conventions.

In fiscal 2017, there was one accident in which an environmental wastewater standard was violated. On September 17, a release of wastewater with a pH (the standard for hydrogen ion concentration) of 8.7 occurred at UACJ Copper Tube Corporation's plant. The standard calls for a pH of 5.8 to 8.6, and the release was into a river. The accident was caused by the growth of algae in a pond on the plant grounds and the consumption of CO₂ as a result of photosynthesis. This was a natural phenomenon and occurred over a short period of time, so there were no impacts on the river. Measures for controlling the growth of algae are being developed to prevent a recurrence.

Pollutant Control at Individual UACJ Works (Fiscal 2017)

○: Measurements fall within standards

	Measurement Item	Nagoya Works	Fukui Works	Fukaya Works	Nikko Works
Air	NOx, SOx, soot and dust	○	○	○	○
Water	pH, BOD	○	○	○	○
	n-H (mineral oil) , SS	○	○	○	○

Control of PRTR Substances

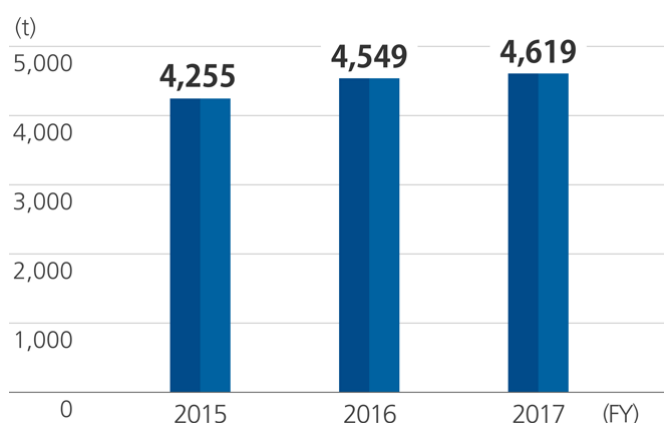
The UACJ Group, in accordance with the PRTR Law, identifies amounts of targeted substances handled, released, and transferred, and reports them as required. We also work to reduce these volumes.

In fiscal 2017, factors such as progress in converting to a detergent containing lower amounts of controlled substances reduced overall releases of targeted substances by the Group as a whole by 11.3% compared to fiscal 2016.

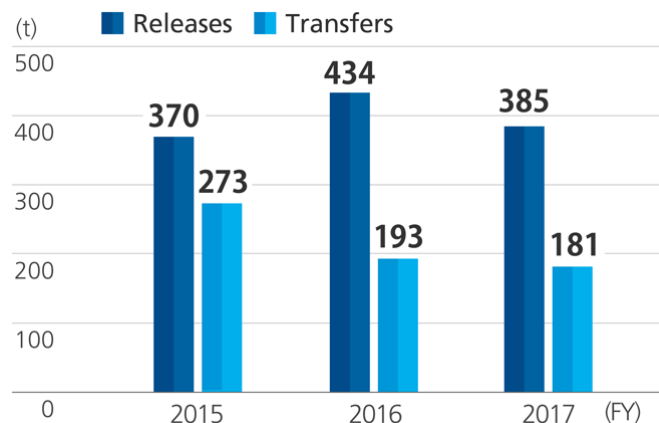
* PRTR Law : Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Amounts of PRTR Substances Handled

(Contain manganese, chromium, nickel, and lead as alloy substances)



Amounts of PRTR Substances Released or Transferred



*Measurement Scope: UACJ (Nagoya, Fukui, Fukaya, Nikko), UACJ Color Aluminum Corporation, UACJ Extrusion Nagoya Corporation (Nagoya, Anjo), UACJ Extrusion Oyama Corporation, UACJ Extrusion Gunma Corporation, UACJ Extrusion Shiga Corporation, UACJ Foil Corporation (Isezaki, Shiga, Nogi), UACJ Foundry & Forging Corporation, UACJ Copper Tube Corporation.

Handling, Releases, and Transfers of PRTR Substances (Fiscal 2017)

No.	Substance	Amount Used (kg)	Amount Released (kg)	Amount Transferred (kg)
412	Manganese and its inorganic compounds	2,648,330	0	21,412
300	Toluene	784,345	180,502	46,190
80	Xylene	211,075	9,839	2,489
87	Chromium and chromium(III) compounds	195,746	0	28,502
296	1,2,4-trimethyl benzene	172,732	74,248	6,779

No.	Substance	Amount Used (kg)	Amount Released (kg)	Amount Transferred (kg)
273	1-dodecanol	155,046	79,203	49,758
53	Ethyl benzene	76,199	4,004	629
374	Hydrogen fluoride and its water-soluble salts	61,983	1,702	15,372
71	Ferric chlorides	48,222	0	0
308	Nickel	39,023	0	0
297	1,3,5-trimethylbenzene	34,093	22,129	1,711
88	Hexavalent chromium and its compounds	27,947	0	61
302	Naphthalin	8,283	203	44
304	Lead	5,996	0	0
407	Polyoxyethylene = alkylether	5,040	4,990	0
438	Methylnaphthalene	4,699	23	0
133	Ethylene glycol monoethyl ether acetate	4,140	67	9
321	Vanadium compounds	3,813	0	0
392	n-hexane	2,914	416	290
245	Thiourea	2,750	0	2,750
207	2,6-Di-tert-butyl-4-cresol	2,362	644	1,718
83	Cumene	1,050	24	4
	Total	4,495,789	377,995	177,719

Measurement Scope : UACJ (Nagoya, Fukui, Fukaya, Nikko), UACJ Color Aluminum Corporation, UACJ Extrusion Nagoya Corporation (Nagoya, Anjo), UACJ Extrusion Oyama Corporation, UACJ Extrusion Gunma Corporation, UACJ Extrusion Shiga Corporation, UACJ Foil Corporation (Isezaki,Shiga,Nogi), UACJ Foundry & Forging Corporation, UACJ Copper Tube Corporation.

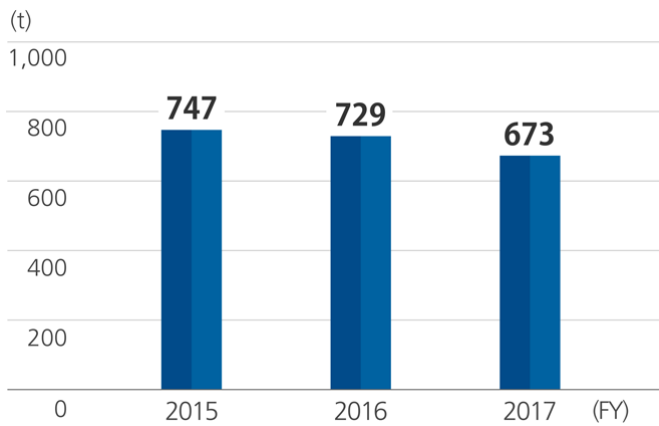
Reducing VOC Releases

Having targeted for reduction substances such as toluene, xylene, ethyl benzene, and 1,3,5-trimethylbenzene, the UACJ Group is cutting releases of these VOCs (Volatile Organic Compounds) into the air. As one example, the cleaning solution we use for the finishing of sheet products is being replaced with one that has very low levels of the VOCs targeted for reduction.

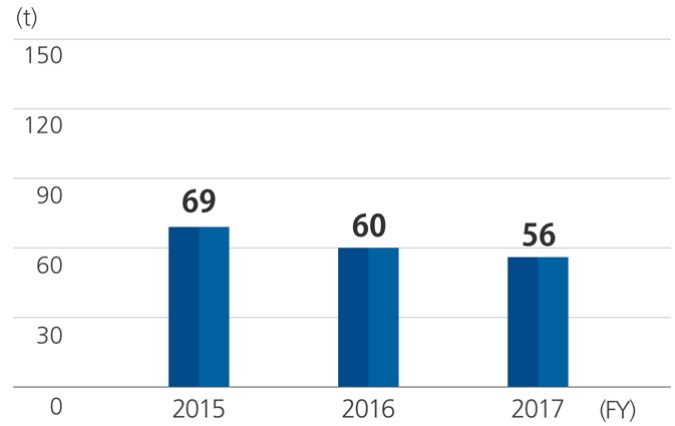
Prevention of Air Pollution

The UACJ Group is working to reduce its emissions of air pollutants by keeping plant facilities in top working condition and converting from heavy oil to LNG as a fuel. At present, our efforts are succeeding in keeping SOx and NOx emissions at low levels.

NOx Emissions



SOx Emissions



Measurement Scope: UACJ (Nagoya, Fukui, Fukaya, Nikko), UACJ Extrusion Oyama Corporation.

Control of PCBs

The UACJ Group, in accordance with the Law Concerning Special Measures Against PCB (Polychlorinated biphenyl) Waste, accounts for PCB-containing equipment for each of its plants, submits reports to supervisory authorities, and properly stores and manages these items. We also conduct surveys of fluorescent lamp ballasts and other small electrical devices and electrical devices suspected of containing small amounts of PCBs, and properly manage those exceeding standards.

To steadily and properly render PCB-containing equipment harmless, we have commissioned the Japan Environmental Safety Corporation to perform this work. We use certified processors as necessary to handle small amounts of PCB-contaminated oil. And we are working to complete the proper disposal of items with high concentrations of PCBs ahead of the deadline established by the amended Law Concerning Special Measures Against PCB Waste, which took effect in August 2016.

Addressing the Problem of Asbestos

The UACJ Group has carried out a study of its historical and current usage of asbestos in products, plant buildings, equipment and fixtures. At present, we are not using asbestos in products and have never sold products containing asbestos.

As for our plant buildings, to a very limited extent, we have used spray-on asbestos, which entails a high risk of dispersion into the air, and have been working to remove it since fiscal 2004. For spray-on asbestos that was used at UACJ Foil Corporation's Nogi Mill and at UACJ Copper Tube Corporation and is still in place, we have completed containment work and confirmed that no asbestos is being dispersed into the air.

Regarding equipment and fixtures, we have already completed the replacement of items for which there was a risk of asbestos dispersion. Equipment and fixtures with a small risk of asbestos dispersion are being replaced when regular inspections are due and on other occasions, as well.

Measures to Control Dioxins

For its aluminum melting furnaces that qualify as designated dioxin-emitting facilities under the Law concerning Special Measures against Dioxins, the UACJ Group has implemented management that lowers dioxin concentrations in exhaust gases to levels below the regulatory standard.

More specifically, we prevent the development of dioxins by strictly managing the volume of combustion air for the subject aluminum melting furnaces and closely controlling the materials put into them.

In addition, we annually measure levels of dioxins for subject aluminum melting furnaces, as required by law, and report results to the government. All of our measurements of dioxins for fiscal 2017 came in below regulatory standards for the 24 facilities covered by air pollution regulations and the 2 facilities covered by water pollution regulations.

Prevention of Water Pollution

With the partial revision of the Water Pollution Prevention Act, promulgated in June 2012, reporting of information on storage facilities, piping, etc. used for harmful substances and compliance with standards set for structures became mandatory.

At the UACJ Group, all necessary reports were prepared at individual business locations by the May 31, 2015 end of the deferment period.

Prevention of Soil and Groundwater Contamination

UACJ Extrusion Oyama Corporation and UACJ Color Aluminum Corporation, as responses to past incidents of soil and groundwater contamination, have implemented continuous purification of contaminated groundwater. Regular confirmations of the effectiveness of these measures have determined that contamination levels are falling.

Measures to Deal with Soil and Groundwater Contamination

Business Location	Period	Contaminant	Response
UACJ Extrusion Oyama Corporation	Since fiscal 1999	Tetrachloroethylene	Soil replacement, water extraction and purification
UACJ Color Aluminum Corporation	Since fiscal 2004	hexavalent chromium, fluorine	Soil replacement, water extraction and purification

For information on the management of chemical substances included in products, please refer to the section titled, "Environmental Consideration in Products."

Basic Approach

The recoverable reserves of aluminum, the primary raw material used by the UACJ Group, are in greater abundance, and will be recoverable for a longer period, than those of other metals. We still believe, however, that promoting recycling and reuse is important for passing resources on to future generations. In addition to conventional waste recycling, therefore, we are also vigorously supporting closed recycling* for items such as aluminum cans and printing plates, and striving to reduce waste. In pursuit of our environmental objective of realizing a recycling-oriented society, we will work continuously to reduce our generation of industrial waste per unit of production and achieve zero emissions.

* Closed recycling is the recycling of aluminum used in a specific type of product into raw material to produce the same type of product.

Fiscal 2017 Results

The UACJ Group is moving forward with efforts to reduce industrial waste and pursuing activities aimed at achieving zero emissions.

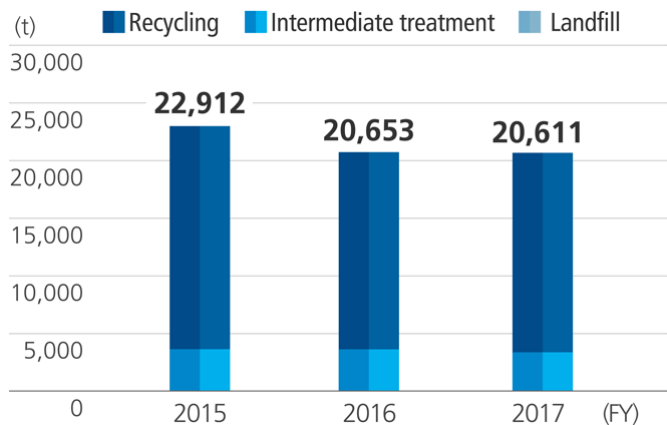
For us, “zero emissions” means that direct landfill waste comprises less than 1% of all industrial waste generated. For fiscal 2017, we achieved zero emissions with a direct landfill waste ratio of 0.07%. Going forward, we will work to maintain zero emissions by separating industrial waste and recycling.

In fiscal 2017, the total amount of industrial waste generated at our principal business locations fell by 4.1% compared to fiscal 2016. Going forward, we will continue to reduce industrial waste, recycle, and turn waste into substances of value.

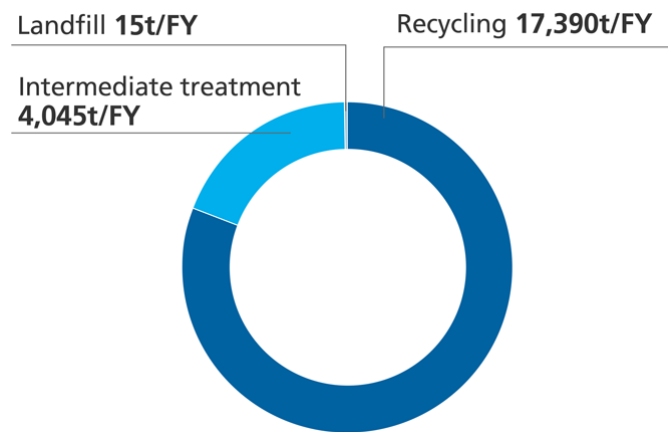
Industrial Waste Subcommittee

At UACJ, the Industrial Waste Subcommittee has been established mainly with representatives of business locations generating significant amounts of industrial waste. The subcommittee meets regularly to promote reductions and proper processing of industrial waste by establishing a common understanding of separation and processing information, and by examining and promoting improvements in separation practices, and establishing a common understanding of reduction measures, at individual business locations.

Amounts of Industrial Waste Generated



Breakdown of Waste by Handling Approach (FY 2017)



Measurement Scope: UACJ Group business locations in Japan

Waste Amounts by Type and Main Post-Recycling Application (FY 2017)

Waste Type	Amount Generated (t)	Recycling Rate (%)	Main Post-Recycling Application
Sludge	9,833	89	Raw material for cement
Waste oil	2,375	94	Fuel
Wood waste	2,525	95	Fuel, fertilizer
Slag	1,321	100	Roadbed material
Waste plastic	1,515	32	Fuel

Industrial Waste Reduction Examples (Fiscal 2017 Activities)

Business Location	Theme	reduction (t/yr.)
UACJ Foil Corporation, Iseaki Works	Use of recycled cardboard for the exterior frames of wooden boxes	86
UACJ Extrusion Oyama Corporation	Recycling of waste plastic	42
Fukui Works	Recycling of waste hydraulic fluid (oil)	24

Business Location	Theme	reduction (t/yr.)
Multiple business locations	Reuse of wooden pallets and skids	-
	Recycling of waste oil and waste ink	
	Recycling of metal waste	
	Recycling of wastepaper	
	Recycling of waste plastic	

Promoting Recycling of Aluminum Cans

Aluminum is light-weight, does not rust, conveys heat well, and is highly recyclable*1. Given the outstanding qualities of the metal from which they are made, aluminum cans are recycled at a rate*2 of 92% (fiscal 2017). By having each of its works purchase used aluminum cans, the UACJ Group is supporting aluminum can recycling activities and contributing to the creation of a recycling-oriented society.

*1 Recycling aluminum requires only about 3% of the amount of energy needed to produce new aluminum from bauxite.

*2 Aluminum cans collected and recycled in Japan (including for export purposes) as a percent of all aluminum cans purchased by consumers in Japan.

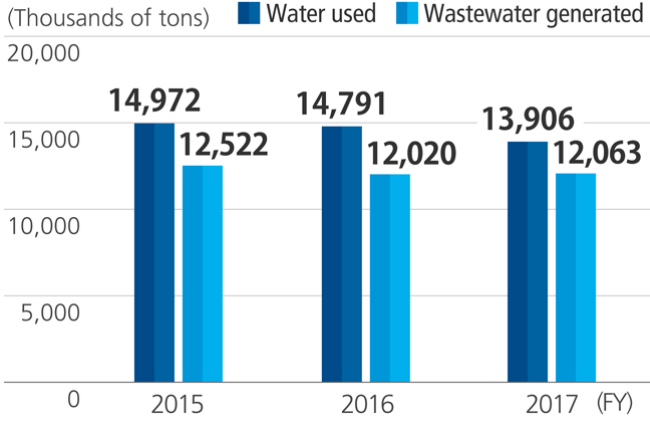
Effective Use of Water Resources

Approximately 70% of the earth's surface is covered by water, but only about 0.01% of all of the earth's water is fresh water - water that can be easily used by humans.

From a global perspective, these precious freshwater resources are recyclable. With uneven distribution, however, there are already countries and regions facing serious risks of water shortages.

The UACJ Group strives to use and manage water resources effectively based on its keen awareness of these circumstances. Each of our business locations tracks its water usage by water source, and manages wastewater discharges by the waterway into which the discharges are made. Data on our water usage has been tallied and is included in the material balance information presented in the Business Activities and Environmental Impacts section.

Volumes of Water Used and Wastewater Generated



Environmental Consideration in Products

Improvement Objectives

The UACJ Group, is contributing to the realization of a low-carbon, recycling-oriented society by working to improve the performance of aluminum materials.

To illustrate, when we develop, and a customer in the business of manufacturing transportation equipment adopts, an aluminum material that offers the same performance as previous materials but with less weight, we have contributed to improved fuel economy and, thereby, a reduction in carbon emissions.

The UACJ Group, in response to customers' desires, is developing or improving products in ways that emphasize environmental considerations.

Product Development and Improvement	Contributions that Benefit the Environment and Society
Development and application of aluminum can materials with outstanding recyclability	Making lighter-weight cans that save resources and reduce costs
Development and application of high-performance heat exchanger tubes	Improving performance of heat exchangers to reduce equipment sizes and save resources
Development and improvement of aluminum materials for car air conditioners compatible with the European requirement to use CO ₂ as a refrigerant	Making lighter-weight vehicle bodies that save resources and improve fuel economy Fighting global warming by adopting CO ₂ as a refrigerant
Development and improvement of aluminum materials for hybrid automobiles	Making lighter-weight vehicle bodies that save resources and improve fuel economy

Two-thirds of the materials used to make aluminum cans in Japan (in fiscal 2017, 21.9 billion cans weighing approximately 340,000 tons) are made by UACJ. As the top manufacturer, we believe it is our responsibility to promote the recycling of aluminum cans, and we do so actively.

Furthermore, we are rationalizing our use of packing materials for the delivery of products, and recovering and reusing them in conjunction with our rationalization of our logistics.

Control of Chemical Substances included in Products

The UACJ Group is strict in its exercise of proper controls over designated chemical substances included in products. In response to changes in domestic and overseas environmental laws (e.g. The addition of the EU's REACH*¹ regulation), we revise our chemical substance management standards and common procurement documentation, and take other necessary steps.

We also devote significant effort to the registration of SDSs (Safety Data Sheets*²) and to the improvement of our browsing cabinet.

*1 REACH regulation: Registration, Evaluation, Authorization and Restriction of CHemicals

*2 SDS: Safety Data Sheet: Products containing chemical substances designated by the Poisonous and Deleterious Substances Control Act, Industrial Safety and Health Law, and the Pollutant Release and Transfer Register Law at percentages greater than specified in these laws must be accompanied by a Safety Data Sheet with the required information when they are transferred or provided from one commercial party to another.

REACH Regulation Initiatives

The UACJ Group, though it is not required to be registered under the REACH regulation, examines all of its products to determine whether they include an SVHC (Substance of Very High Concern) specified in the REACH regulation and informs customers of any products that do.

If substances are newly designated as SVHCs, and we determine that they are included in our products, we will swiftly provide customers with the relevant information.

Environmental Quality Management System Certifications by Customers

At its business locations required to have specified supplier certifications, the UACJ Group emphasizes the practice of chemical substance management that satisfies customer standards, and undergoes environmental quality management system certifications by customers. Going forward, we will continue to practice management that enables proper responses to customer demands.

Communicating Information on Chemical Substances in Products

Raw material manufacturers provide UACJ with information on the chemical substance content of their products, and UACJ has established a management system that allows it to properly communicate this information to its own customers.

Information on chemical substances is provided, with the cooperation of the Quality Assurance and Environmental Management departments, in industry-specific formats, depending on the customer request.

[Examples of Information Provision Formats]

- SDS (Safety Data Sheet) * Provision of GHS (Globally Harmonized System of Classification and Labeling of Chemicals)-compliant content
- JAMP (Joint Article Management Promotion consortium) AIS (Article Information Sheet)
- JAMA (Japan Automobile Manufacturers Association) JAMA Sheet

UACJ also issues customer requested certifications that certain substances have not been used in production or are not contained in a product.

Conversion to Low-Environmental-Impact Raw Materials

The UACJ Group is striving to use low-environmental-impact raw materials. For the raw materials that, as in the case of free-cutting alloys, include lead or other metallic elements that are covered by EU directives, we are working with customers to switch to materials that do not include controlled substances. Switching to low-environmental-impact raw materials is important and we will continue with this effort going forward.

We have also taken action regarding cleaning solutions for the finishing of sheet and extruded products. In the past, we used chlorine-based organic solvents, which are designated substances under the PRTR Law. However, given multiple instances of groundwater contamination with these substances across Japan, we ceased using chlorine-based organic solvents in the final cleaning processes at all of our business locations.

The paints used on aluminum can materials and colored aluminum are another area in which we are taking action. Oil-based products had been the most commonly used paints for these products, but have now been largely replaced with water-based paints, which are said to have low environmental impact. The Group is promoting the use of water-based paints by recommending them to customers and working with customers to test their use.