



ADEKA

CSR REPORT 2016

CORPORATE SOCIAL RESPONSIBILITY

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ADEKA CORPORATION

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## Editorial Policy

We publishes the ADEKA Group CSR Report every year with the aim of communicating information to our diverse group of stakeholders about our corporate activities and future direction, as we strive toward a sustainable future hand-in-hand with society. The ADEKA Group CSR Report 2016 provides a focused report on matters of particular significance from amongst the numerous initiatives that we undertook in fiscal 2015.

Details about environment-related initiatives are also available on the CSR section of our website. Going forward, in order to draw up reports that are easy to understand for all our stakeholders, we would like to seek your candid feedback and opinions using the questionnaire enclosed at the end of this report.

## Scope Covered by This Report

This Report covers the whole ADEKA Group. Where necessary, "ADEKA Group" and "the Group" refer to the entire ADEKA Group, while "ADEKA" and "the Company" refer to ADEKA Corporation.

## Period Covered by This Report

2015 Fiscal Year ended March 31, 2016

\*Some parts of this report refer to recent activities taking place in fiscal 2016.

## Reference Guidelines

*Environmental Reporting Guidelines (Fiscal Year 2012 Version) of the Japan Ministry of the Environment*  
*Japanese Standards Association ISO 26000:2010 Guidance on social responsibility*  
*This report contains information on the standard disclosure items from the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI).*

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Please refer to the ADEKA Group PC site (The following information)  
 CSR : <http://www.adeka.co.jp/csr/en/index.html>  
 IR : <http://www.adeka.co.jp/en/ir/index.html>

## Corporate Profile (as of March 31, 2016)

Name: ADEKA CORPORATION

Established: January 27, 1917

Representative Director and President: Akio Kohri

Head Office: 7-2-35 Higashi-ogu, Arakawa-ku, Tokyo, Japan

Capital Stock: 22.899 billion yen

Shares Issued: 103,651,442

Number of Employees : 3,241 (consolidated)

Business: Chemicals, Foods, and Other business



ADEKA CORP. Head Office (Tokyo, Japan)

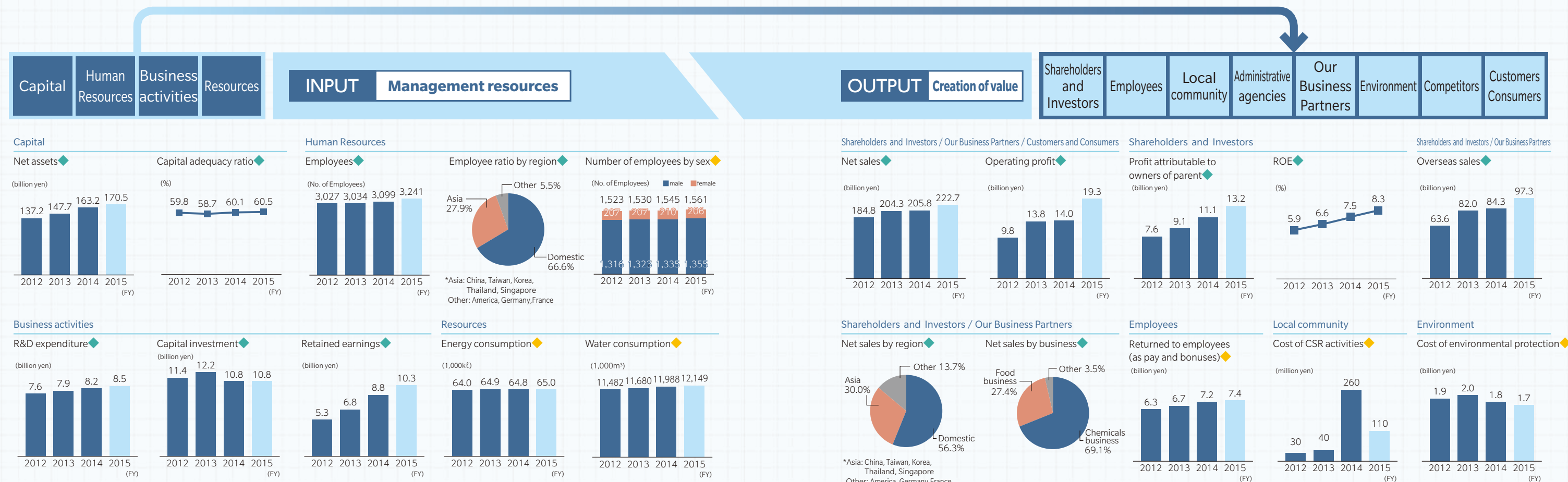
## CONTENTS

<b>Commitment of Our Top Management</b> .....	3
<b>ADEKA in Our Lifestyles</b> .....	5
<b>ADEKA Overseas Network</b> .....	7
<b>100 years of history</b> .....	9
<b>Management Policies and CSR of the ADEKA Group</b> .....	11
<b>Progress of STEP 3000 – II</b> .....	13
Special Feature	
<b>ADEKA's Polymer additive business and intumescent flame retardants</b> ...	15
The three-in-one value chain making use of ADEKA rashisa in development, manufacturing and sales	
<b>CSR Management</b> .....	19
<b>Product Safety Initiatives</b> .....	21
Special Feature	
<b>To ensure safe operation of plants</b> .....	23
Overseas group companies: Environmental and safety & health activities	
<b>Environmental Conservation Initiatives</b> .....	25
<b>Creating a Pleasant Working Environment</b> .....	29
<b>Initiatives for Occupational Health and Safety</b> .....	33
<b>Together with Stakeholders</b> .....	35
Third Party Opinion Comments / Response to Third Party Opinion Comments	39
Results of the "ADEKA Group CSR Report 2015" Survey .....	40

## Financial Highlights

Value that ADEKA distributed in Fiscal 2015

◆ consolidated ◆ Non-consolidated



## Commitment of Our Top Management



**Aiming to be “a global Good Company” through constructive communication with stakeholders and a challenging spirit cultivated over the years.**

Akio Kohri, Representative Director and President

Our heartfelt condolences go out to the victims of the recent Kumamoto Earthquake.

### “ADEKA VISION 2025” Our aspirations as a company that has lasted 100 years

ADEKA, founded on January 27, 1917, will shortly be celebrating its 100th anniversary. There is a phrase in the prospectus from the time of the company’s founding stating, “In the interest of Japan and its citizens, caustic soda production in Japan should be achieved as soon as possible,” testifying to the company’s resolution to contribute to the country and its people.

Making a product that would be superior in quality to that of imported products was extremely challenging with the technology of the time, but after a lot of effort through trial and error, the company succeeded in making a high quality domestic product.

Companies are public institutions, and they must contribute to society. To do so, they must constantly take on new challenges. “Continuing to take on challenges with resolution” has been the driving power behind ADEKA’s 100-year history in manufacturing.

This founding spirit has been inherited by the ADEKA Group, and “ADEKA VISION 2025 (p13)” was laid down in FY2015 as ADEKA’s goal envisioned for 2025. It outlined the company’s new resolution to expand business fields through advanced technologies, while actively creating social value as a global company.

### Challenges that will lead to new growth and social contributions

Companies can only contribute to society by making effective use of its assets, such as the power of its technology and human resources. By providing advanced materials and solutions, the ADEKA Group realizes win-win relationships with customers and business partners in aiming to contribute to society through the simultaneous pursuit of greater social and economic value. We call this “co-creation” of common value with society, and the ADEKA Group strives in solidarity to achieve it.

The ADEKA Group laid down the midterm management plan, “STEP 3000-II.” The basic strategy behind this plan is to expand the group business focusing on overseas expansion, including the core businesses, and cultivate a third core business, as well as other new businesses to become a Good Company with 300 billion yen in net sales.

There was bad news in FY2015, including the slowdown in growth of the economies in China and emerging countries. However, our core businesses in polymer additives and food products were bullish, and we achieved record sales, operating profits, ordinary profits and net income. Moreover, sales of highly competitive unique products in the field of IT and electronics grew dramatically. R&D also began for the new material, graphene, and influenza vaccine adjuvants. ADEKA is currently making progress in taking on numerous challenges that will lead to new growth and social contributions.

### Aiming to create happiness through global “co-creation” with our group employees

A corporate governance code was adopted in FY2015 to encourage proactive governance among top management personnel. This will involve extensive co-creation with stakeholders beyond the bounds of our main businesses, to encourage the sustainable growth of the company and boost the mid-to-long-term corporate value through constructive communication and appropriate cooperation with stakeholders, including stockholders.

I believe that employees will find happiness by taking pride in their company and jobs, and working in solidarity for the growth of the company and the group, as well as for their own lifestyles and precious families. I believe that the sustainable growth of the company depends on realizing the co-creation of this kind of happiness with our employees.

ADEKA’s trade union celebrated its 70th anniversary in FY2015. The ratio of overseas sales reached 43.7%, and we are growing steadily with over 3,000 employees working for the group now, including those overseas.

The precondition for co-creation is “communication and a challenging spirit.” Business expansions come with risks, but we are aiming to become a global, Good Company by providing an environment that encourages communication among all employees, based on strict risk management. This will allow them to take on appropriate challenges for their personalities and skills



# ADEKA in Our Lifestyles

Throughout its history, ADEKA has been developing proven technologies, which are at work in diverse aspects of our everyday lives. The ADEKA Group is committed to assembling the best technologies in order to develop eco-friendly and socially responsible products and technologies for a healthy and enriched society.



**Used as paint for construction and civil engineering**  
 Epoxy resins, Urethane resins  
 Anticorrosive, dust-proof paint for metals and concrete



**Building infrastructure that is stronger and more robust**  
 Water swelling sealing materials  
 Sealing materials used in concrete structures, to prevent water leakage, etc.



**On the LCD screens of flat-screen television sets**  
 Flat panel display materials  
 Enhancing the performance of video equipment  
 Light curing resins  
 Innovation of manufacturing technology



**On your cherished cars**  
 Polymer additives  
 Reducing the weight of vehicles  
 Lubricant additives  
 Improving Fuel Efficiency and Reducing CO<sub>2</sub> Emissions



**On your favorite bread**  
 Margarine, shortenings, etc.  
 Making baked goods fluffy and moist



**On your beloved smartphones**  
 Semiconductor materials  
 Enhancing the performance of electronic equipment and reducing power consumption  
 Print circuit materials  
 Improving the quality of optical communication equipment



**In all corners of the office**  
 Polymer additives (flame retardants)  
 Improving the flame retardant property of plastics  
 Hydrogen peroxide  
 Bleaching of raw materials used in papermaking, etc.



**In delicious desserts too**  
 Whipping cream, etc.  
 Improves the milky flavor and melt-in-the-mouth texture  
 Makes desserts moist and delicious



**For healthy lives**  
 Surfactants  
 Creams, emulsions, lotions, etc.  
 Propylene glycols  
 Detergents, shampoos, pharmaceutical products, etc.



# ADEKA Overseas Network

As a company that coexists in harmony with the world community, we are working together with our domestic and overseas networks to expand our business areas and aggressively develop our overseas operations.

Chemicals Business

Foods Business

Other Business

\*As of 31 July, 2016

Europe

ADEKA Europe GmbH

ADEKA PALMAROLE SAS

Middle East

ADEKA AL GHURAIR ADDITIVES LLC

Asia

ADEKA (SHANGHAI) CO., LTD.

ADEKA FINE CHEMICAL (SHANGHAI) CO., LTD.

ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD.

ADEKA FOODS (CHANGSHU) CO., LTD.

KUKDO CHEMICAL (KUNSHAN) CO., LTD.

CHANG CHIANG CHEMICAL (SHANGHAI) CO., LTD.

CHANG CHIANG CHEMICAL CO., LTD.

ADEKA FINE CHEMICAL TAIWAN CORP.

ADEKA KOREA CORP.

ADEKA (SINGAPORE) PTE.LTD.

ADEKA (ASIA) PTE.LTD.

FELDA IFFCO OIL PRODUCTS SDN.BHD.

ADEKA FOODS (ASIA) SDN.BHD.

ADEKA FINE CHEMICAL (THAILAND) CO.,LTD.

ADEKA INDIA PVT.LTD.

Japan

Office

Head Office

Osaka Main Branch

Nagoya Branch

Fukuoka Branch

Sapporo Regional Office

Sendai Regional Office

Plants

Kashima Plant

Kashima Plant–West

Chiba Plant

Mie Plant

Fuji Plant

Akashi Plant

Soma Plant

R&D Laboratories

Ogu R&D Laboratory

Kuki R&D Laboratory

Urawa R&D Laboratory

Kansai Food Development Department

Domestic affiliated companies

ADEKA CHEMICAL SUPPLY CORP.

ADEKA CLEAN AID CORP.

ADEKA FINE FOODS CORP.

ADEKA ENGINEERING & CONSTRUCTION CORP.

OXIRANE CHEMICAL CORP

ADEKA FOODS SALES CORP

ADEKA LOGISTICS CORP

YONGO CO., LTD.

ADEKA LIFE-CREATE CORP

UEHARA FOODS INDUSTRY CO., LTD.

NIHON NOHYAKU CO., LTD.

CO-OP CLEAN CO., LTD.

ASAHI ARCHITECTS OFFICE CO., LTD.

KANTO SODIUM SILICATE GLASS CO.,LTD.

TOKYO ENVIRONMENTAL MEASUREMENT CENTER CO., LTD.

MIZUSHIMA PLASTICIZER CO., LTD.

America

AMFINE CHEMICAL CORP.

AM STABILIZERS CORP.

ADEKA USA CORP.

ADEKA BRASIL LTDA.

Chemicals

IT and electronic chemicals

The ADEKA Group provides products for various electronic devices such as LCD TVs, PCs, and smart phones, using cutting-edge technologies. Especially, quality of semiconductor materials manufactured at Kashima Plant is at the highest level in the world.

Functional chemicals

Polymer additives are essential for highly-functional plastic. As an all-round manufacturer for polymer additives, the ADEKA Group manufactures various kinds. The Group also provides additives for automobile engine oils, which were developed with ADEKA's unique technology, as well as highly-functional cosmetic materials developed taking into account safeness.

Commodity chemicals

From daily necessities such as soaps and detergents to IT electronics, the ADEKA Group provides products to a wide range of fields and contributes to the development of industries. We produced propylene glycols which are used for cosmetics for the first time in Japan.

Semiconductor materials

Light curing resins

Flat panel display materials

Circuit materials

Polymer additives

Surfactants

Lubricant additives

Epoxy resins,Urethane resins

Propylene glycol

Hydrogen peroxide

Water swelling sealing materials

Foods

Guided by our brand slogan, “The Delicious Taste You can Rely On,” ADEKA is engaged in the development of food ingredients that are constantly at the forefront of the industry. We provide processed oil and fats as well as processed foods to manufacturers of bread, confectionery, and pastry, and contribute to the realization of a safe and reassuring dietary life.

Other

Other Business mainly includes maintenance of the ADEKA Group's plants and facilities, design of various kinds of plants, logistics, and insurance agent business. The Group provides services to customers in various fields, on the basis of expertise related to those operations.

Margarine,Shortenings

Frying oils and fats

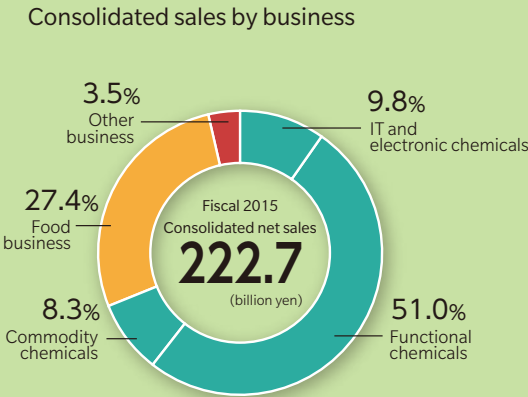
Whipping cream

Plant design / Construction management

Logistics

Real estate

Insurance agent





# 100 years of history

As the ADEKA Group heads toward its 100th anniversary in 2017, the founding spirit of “supporting the affluent lifestyles of our customers through our business” has been passed down through the generations to this day.



## 1917 ~ 1940's



Top: Overall view of Ogu Plant  
Bottom left: Caustic soda cauldron room  
Bottom right: Original caustic soda cauldron

### The foundation for developing a wide range of unique businesses

The company achieved its initial goal of domestically producing caustic soda, indispensable to industries in Japan at the time. And the by-products of hydrogen and chlorine were used to make soap, margarine, bleaching powder and a variety of other products used in everyday life. The company drew on its spirit of innovation, even in times of scarcity during World War II, to develop all kinds of organic chemicals. This propped up the restoration of the country after the war, and established the foundations for supplying both chemical and food products.

At the time ADEKA

1917

Capital

**1 million yen**

No. of employees

**115**

Net sales

**37,000 yen**

## 1950's ~ 1960's



Left: Circular laboratory at Ogu Plant  
Right: Propylene oxide hydrin tower

### Establishing the foundations for the chemical products and polymer additives business

At the time, Japan relied almost entirely on the West for petrochemical technology, but the company made use of organic chlorine technology cultivated over many years to begin selling polymer additives (plasticizer), for which research was already being carried out. The company also succeeded in domestic production of propylene glycol and epoxy resin. The company was able to meet the skyrocketing demand for plastics after the war, using unique technologies and knowhow. The R&D carried out at the time formed the foundations for the current chemical products and polymer additives business.

At the time ADEKA

FY 1959

Capital

**1 billion yen**

No. of employees

**1,171**

Net sales

**8.7 billion yen**

## 1970's ~ 1980's



Top left: The brand logo and catchphrase at the time  
Top right: In the laboratory  
Bottom: Margarine production line at Kashima Plant

### Resolution to develop “unique, niche products”

Since the 1970s, after the period of rapid growth, there has been demand in Japan for greater resource and energy savings, triggered by the oil crisis and other factors. Our company invested management resources into R&D, to produce water-expandable sealant materials, lubricants additives and a variety of other unique, niche products. Moreover, to contribute to the prosperity of more people, a major decision was made to limit our lineup of chemical and food products to those for industrial use.

At the time ADEKA

FY 1976

Capital

**2.2 billion yen**

No. of employees

**1,531**

Net sales

**53.5 billion yen**

## 1990's ~ To date



Top: ADEKA Head Office / Ogu R&D Laboratory  
Bottom: ADEKA FOODS (ASIA) SDN. BHD. Plant completion ceremony

### Becoming a global Good Company with the aim of realizing a sustainable society

Initiatives were launched to innovate management at the same time as the current management policies were laid down in 1996. Progress was made in making the business more profitable, while also expanding overseas. Since entering the 21st century, plants and sales offices have been established throughout Europe, the U.S. and Asia, turning the company into a multinational corporation. Now the company sells not only chemical and food products, but is also breaking into new fields in life sciences, the environment, and energy among environmental energy next-generation materials and eco-friendly products in an effort to create greater value through aiming to realize a sustainable society.

At the time ADEKA

FY 2015

Capital

**22.8 billion yen**

No. of employees (consolidated)

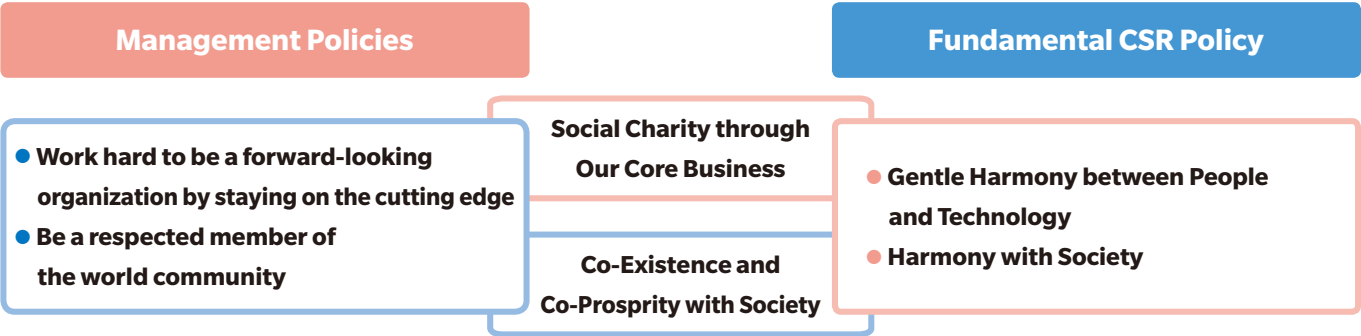
**3,241**

Net sales (consolidated)

**222.7 billion yen**



# Management Policies and CSR of the ADEKA Group



## ADEKA Group's CSR

The ADEKA Group is expanding its corporate activities globally through its unique, world-class technological prowess. In an intensely competitive environment with a demand for quality products and services that are more advanced than before, the operating environment surrounding the Group is constantly undergoing changes in trends, in addition to factors such as heightening global concern for environmental conservation and product safety as well as tighter regulations. In tandem with these changes, the boundaries of the social responsibility that we have to fulfill are also constantly and continuously changing and expanding.

The management policy of the Group is to maintain an aggressive stance, accurately grasp such changes, and respond to them in accordance with global standards. Corporate activities influence our stakeholders in various ways throughout the supply chain, from the upstream to the downstream. In light of this, we will strive to play a useful role in improving the lives of people by harnessing the technological prowess unique to ADEKA, while at the same time giving consideration to the Earth's environment (Gentle harmony between people and technology = Social contribution through our business).

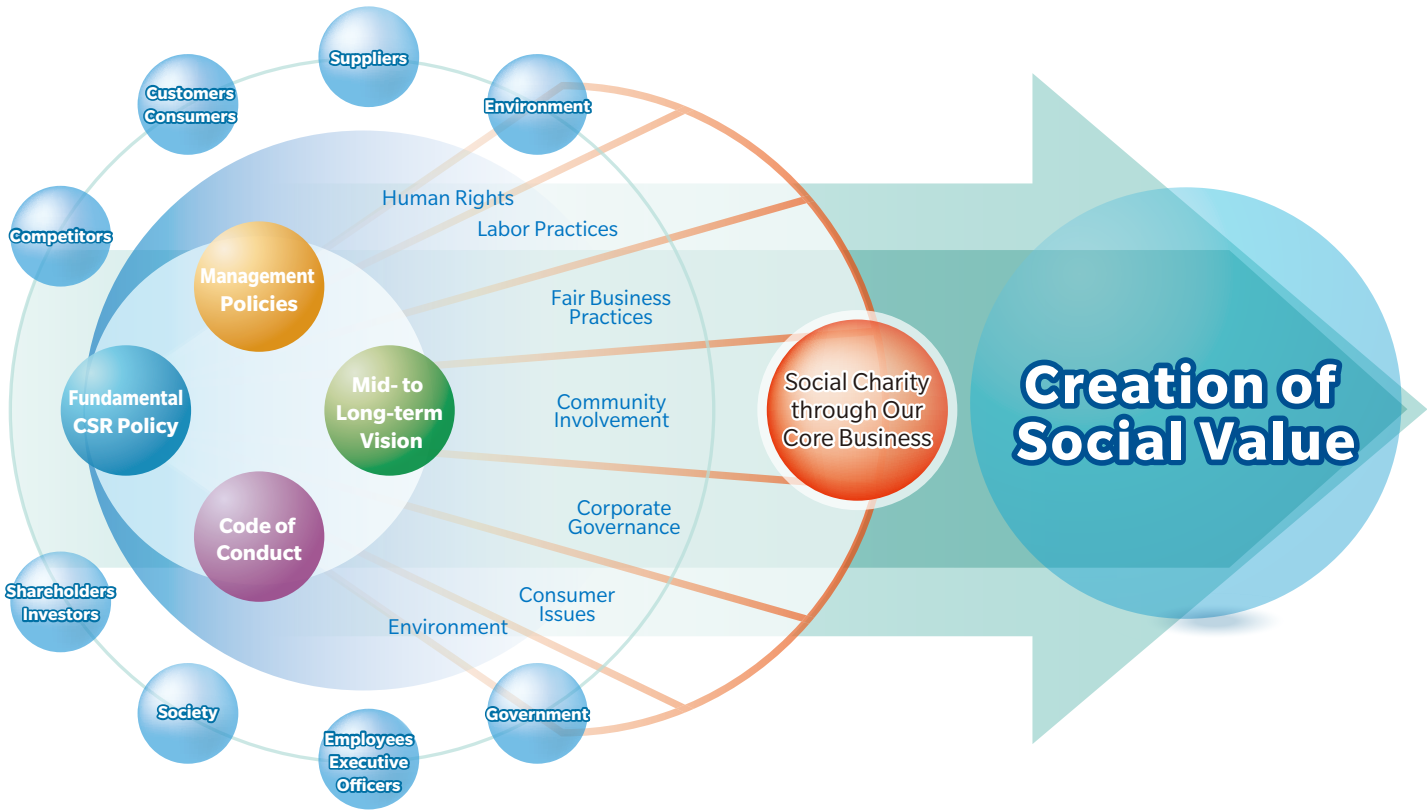
Furthermore, in cooperation with our various stakeholders (harmony with society), we seek to optimize (maximize) the social value created through our value chain\* by maintaining corporate activities that enhance positive impact and mitigate negative impact in addition to contributing to the creation of a sustainable society.

\*A supply chain that creates social value

ADEKA Group Code of Conduct  
<http://www.adeka.co.jp/en/company/action.html>

## Boundaries and Key Issues for CSR, Set Forth in the ADEKA Group Code of Conduct

The ADEKA Group seeks to optimize the social value created through our value chain, based on the ADEKA Group Code of Conduct.



ADEKA Group Code of Conduct	Value Chain and Stakeholders				
	Procurement of Raw Materials (Suppliers)	ADEKA Group	Logistics (Partner Companies)	Customers	End-Users <small>Local community/society, environment, etc.</small>
1. Abide by laws and regulations in all corporate activities and conduct fair business in an ethical manner	Establishment of Corporate Governance, Compliance Systems, and Risk Management (p19-20)				
2. Provide safe and high quality products and services	Developing New Business Areas and Expanding Business Scale and Domains (p13-14)/ Ensuring Traceability/ Quality Management (p21-22)				
3. Be serious about preserving the environment	Promoting Environmental Management (p25-28)				
4. Open and friendly communication and activities, to serve the interest of society and to maintain its trust	Fostering Future Generations, Social Welfare Activities, and Communication with Local Communities (p35-38)				
5. Foster corporate transparency by truthfully and accurately disclosing information regarding our business activities	Provision of Product Information (p21)/ IR Activities (p35)/ Enhancing Information Security (p20)				
6. Maintain a safe and healthy working environment for our employees	Promoting Diversity, Developing Global Human Resources, and Promoting Work-Life Balance (p29-32)/ Occupational Health and Safety (p33)				
7. Do not tolerate antisocial forces or behavior	Corporate Governance (p19)				
8. Strive to achieve sustainable growth and success for the benefit of our employees, shareholders, and society	Optimizing the Value Chain in Consideration of the Interests of the Stakeholders				



# Progress of STEP 3000 – II

In the midterm management plan, “STEP 3000 - II,” launched in FY2015, the company will aim to become “a Good Company” with 300 billion yen in net sales based on “ADEKA VISION 2025.” Initiatives will be implemented based on the company’s basic strategy and three fundamental policies.

Envisioned for 2025

## ADEKA VISION 2025

A global company that creates value for tomorrow and contributes to affluent lifestyles through innovative technologies

### STEP 3000 – II — Creating "a Good Company" —

Period	Fiscal 2015 – 2017 (three years)
Positioning	<ul style="list-style-type: none"><li>● A plan that will ensure we create a Good Company with annual sales of 300 billion yen</li><li>● The first three years toward achievement of ADEKA VISION 2025</li></ul>
Basic Strategy	<div><div><h4>1. Expand business with a special focus on core businesses</h4><p>“Polymer additives” “Food products”</p><h4>2. Develop a third core business</h4><p>“Information and electronics”</p><h4>3. Create new businesses and expand into other fields</h4><p>areas of particular focus “Life sciences” “Environmental energy”</p></div><div><h4>Three Fundamental Policies</h4><div><h5>1. Global Operations</h5><p>Expanding globalization and accelerating localization</p><h5>2. Technology</h5><p>Encouraging innovation by taking our fundamental and core technologies to higher levels of sophistication</p><h5>3. Human Resources</h5><p>Developing globally competitive and strategically-minded human resources</p></div></div></div>

## Progress towards Targets

Progress made in FY2015, the first year in the midterm management plan, “STEP 3000 - II,” announced in April 2015, is as shown in the table on the right.

	FY2014 Previous final year (actual results)	FY2015 First year (actual results)	FY2017 Final year (targeted results)
sales	205.8	222.7	300.0
operating profit	14.0	19.3	24.0
Operating margin	6.8%	8.7%	8.0%
overseas sales	84.3	97.3	150.0
overseas sales ratio	41.0%	43.7%	50.0%

\* Values for FY2014 show those after retroactive application due to changes in accounting practices.  
\* Amounts of less than 100 million yen have been rounded down

### Expand business with a special focus on core businesses

#### Polymer additives

- Production of condensed phosphate ester flame retardants was concentrated in China and Taiwan to improve competitiveness.
- The supply system for general-purpose antioxidants was further strengthened.
- The research system (experimental/product evaluation facilities) of ADEKA FINE CHEMICAL (THAILAND) CO.,LTD. was strengthened.



ADEKA FINE CHEMICAL(THAILAND) CO.,LTD.

#### Food products

- Akashi plant has acquired the international food safety management system “FSSC 22000” certification on April, 2015. Therefore, all domestic food plant were certified.
- At ADEKA FOODS (CHANGSHU) CO., LTD. in China, the development of products suited to local tastes is being promoted and the sales system was strengthened.
- At ADEKA FOODS (ASIA) SDN. BHD. in Malaysia, manufacturing facilities are in full operation and the sales of processed oils and fats products to Southeast Asia started.

### Develop a third core business

#### IT related chemicals

- As for Photoinitiators, new products that allow displays to achieve both a high level of sensitivity and brightness were developed to expand the product lineup.
- Production of black matrix resists was concentrated at ADEKA FINE CHEMICAL TAIWAN CORP. in Taiwan to improve cost competitiveness.

#### Electronic materials

- At the Kashima plant and ADEKA KOREA CORP. in Korea, investments are being made in equipment for high dielectric materials for which increase of demand is expected.
- At ADEKA KOREA CORP., research facilities and analytical instruments were improved and a research and development system that allows product development for rapid response to innovations was built.



ADEKA KOREA CORP.

### Create new businesses

#### Life sciences

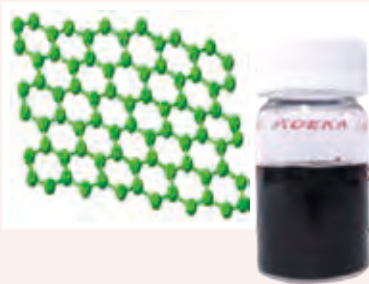
- Decellularized regenerative medicine materials, which are next-generation medical materials, and adjuvants for nasal absorbing vaccine were developed and efforts were made for commercialization.

#### Environmental energy

- An exclusive license of the patent on a production technique of graphene\*, which is expected to have applications in a wide variety of fields including field of next-generation electronics, was acquired from the University of Tokyo and sample began being distributed.

#### Graphene:

It has properties of being highly electrically conductive, light and strong, etc. and is expected to be material for fuel cells, semiconductors, touch panels, etc. in the future.



## Launch of the Global Management System

Bolstering the Global Management System (GMS) is one of the important goals of this mid-term management plan.

The group established new GMS as an IT platform for analyzing the management status of group companies, and began operating it in April 2015. GMS was deployed to allow group companies targeted for consolidation to manage administrative information at the same level.

It has enabled unified management of administrative information on the overall group (regarding production, sales, inventory, profits, etc.), and ascertainment of information needed to make business judgments. Then we could has speed up the process of administrative decision making.



Special Feature: **ADEKA's polymer additives business and intumescent flame retardants**

# The three-in-one value chain making use of **ADEKA rashisa** in development, manufacturing and sales

**ADEKA rashisa**  
It means the essence of ADEKA Group.  
We spreading it to all employees of the ADEKA group.

## ADEKA and polymer additives

Plastics are synthetic resins made from natural resources, which can be used for a variety of purposes after processing. They are cheaper than other materials, and can be given functional properties. Due to advances in technology, work is underway to develop plastics that are harder than steel.

Polymer additives, forming ADEKA's core business, are what give plastics functional properties. ADEKA is a pioneer in this field, engaging in extensive business fields as a world-class top brand.

### Ideas making use of advanced technologies and knowhow

The company develops a variety of additives (see table on right). Whether the full potential of the additives can be drawn out or not depends on the temperature, processing method, and other materials used in combination. ADEKA has an extensive lineup of products developed based on technologies and knowhow cultivated over many years. There are also developmental engineers who can provide technical support by communicating with customers to propose polymer additives that are optimized to their needs.

### The main types of polymer additives and their functions

Stabilizers	Improves the workability of resins and prevents time degradation of products
Plasticizers	Adds flexibility
Antioxidants	Prevents degradation from heat and acid
Light stabilizers	Renders UV light harmless →Prevents degradation and discoloring
Nucleators	Improves mechanical properties Promotes mold cycling during manufacturing →Boosts productivity
Clarifiers	Improves transparency
Heavy metal inactivators	Prevents degradation of metals through catalysis
Flame retardants	Adds fire-resistance



### ADEKA-style ideas

**To provide functional, high-quality products that meet the needs of customers**

General manager, Polymer Additives Sales Department  
Polymer Additives Division

**Tomoyuki Funamizu**

ADEKA continues to hold the world's largest market share in condensed phosphoric ester-based flame retardants.

Flame retardants for polyolefin have many drawbacks. They give off toxic gases while burning, and they must be added in large quantities, raising the specific weight and

weakening the physical properties of the resin. The ADEKA Group's intumescent flame retardants address all of these demerits for which they have been steadily winning higher appraisal. The expansion in use of polyolefin has also increased and diversified the need for its flame retardation.

The company has established a system to cater meticulously to the needs of customers. At the same time, ADEKA hopes to contribute to society by making full use of its technological and human resources assets to provide cutting-edge materials that offer safety and security in everyday life.



### ADEKA-style sales

**To continue being indispensable to customers all over the world**

ADEKA (SHANGHAI) CO., LTD.  
**Kouzou Tachibana**

The ADEKA Group transferred the production and sales of intumescent flame retardants to bases in China to set up an optimized global production and supply system.

Plant engineers from Japan were dispatched to ensure strict quality control and operational training of local employees, maintaining quality at the same high level as in

Japan. ADEKA (SHANGHAI) CO., LTD. functions as the global sales hub, creating a customer service system that is able to respond globally and quickly in coordination with all the subsidiaries of the ADEKA Group.

The ADEKA Group's strengths lie in the lineup of technologically superior products, and the group's ability to provide technological solutions to customers throughout the world. Technical discussions are held repeatedly with domestic and international sales, research and production bases to boost the value of final products and meet the diverse range of needs of customers throughout the world.

### The global network of the polymer additive business

Intumescent flame retardants R&D,  
production and sales bases

**Sales:** ADEKA (SHANGHAI) CO., LTD.

**Production:** ADEKA FINE CHEMICAL (SHANGHAI) CO., LTD.

**Research and development:** Polymer Additive R&D Laboratory







## ADEKA-style mass production

## Complete localization of production and sales

Manager, Technology Group  
Technology & Engineering Department  
**Takafumi Fujii**

It was decided that intumescent-type flame retardants would be produced in China, because the country is a global producer of phosphorus and it is also a promising potential market.

The development project began with experiments on trial products at the company's Fuji Plant. Steady progress was made before the project was transferred to the plant of ADEKA Fine Chemical (SHANGHAI) Co., Ltd.

Success in this project requires complete localization of everything, including maintenance work, so manufacturing equipment made in China was installed in this new plant. A system was laid down in preparation for mass production, including suppliers of raw materials and manufacturing

equipment, and local employees, resulting in the first shipment of products in 2012.

Because intumescent flame retardants will be shipped all over the world from China, the sales base was moved to ADEKA (SHANGHAI) Co., Ltd., and a BCM system was established to ensure the stable supplying of products.

## Participation in conferences

The company actively takes part in conferences, exhibitions, seminars, and more, to raise awareness for the ADEKA brand.



Holding of technology exchange events  
(ADEKA AL GHURAIR ADDITIVES LLC)



## ADEKA-style R&amp;D

## Focusing on halogen-free flame retardants

General manager, Modifier Solution Department  
Polymer Additive R&D Laboratory  
**Naoko Dai**

Some halogen flame retardants, made mainly from bromine-based compounds, emit large amounts of carbon monoxide and black smoke when extinguishing fire. Many fire victims die as the result of suffocation or carbon monoxide poisoning from the smoke emitted by construction materials, furniture, etc. This prompted ADEKA to develop a "halogen-free flame retardant that also limits the generation of smoke and carbon monoxide." This led to the launch of a condensed phosphoric ester-based flame retardant (ADK STAB FP-600) for use in household electrical appliance housings and engineering plastics for construction materials, in 2000. Furthermore,

intumescent flame retardants (ADK STAB FP-2000 series) for polyolefin were launched in 2007.

There has been an increasing demand for safer flame retardants that do not hinder the evacuation of people not only from public facilities where many people gather, but also from modern, airtight houses.

The FP-2000 series developed by ADEKA forms a frothy char layer known as an intumescent on the surface of materials while burning. This layer insulates the inside of the material from the heat, which not only flame proofs the combustible polyolefin, but also suppresses the generation of smoke.

They can be used as covering material for electrical wires and cables, as well as in internal parts of household electrical appliances that are combustible or prone to heating. They are expected to be used more extensively in parts around rechargeable batteries, which are prone to heating, with the spread of hybrid and electric vehicles.

## Laying down a three-in-one value chain with a global perspective

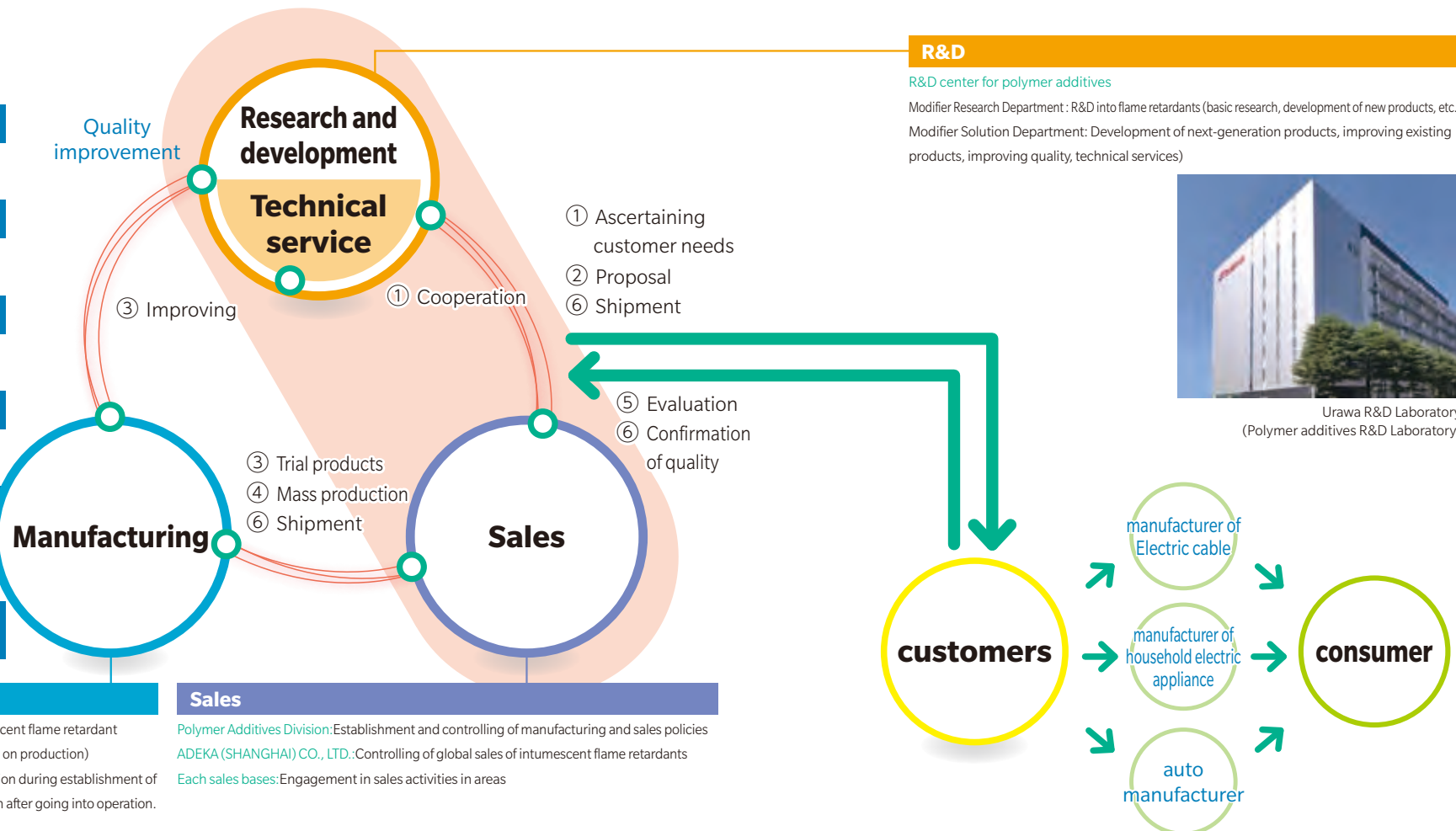
- ① Ascertaining customer needs
- ② Proposing solutions customized to customer needs
- ③ Improving existing products
- ④ Mass production of trial products
- ⑤ Trial production and evaluation at the customer factory
- ⑥ Shipment upon confirmation of quality by the customer

## Manufacturing

ADEKA FINE CHEMICAL (SHANGHAI) CO., LTD.: Main plant of intumescent flame retardant  
Mie Plant: Mother plant of polymer additives (giving supervision and advice on production)  
ADEKA Technology Engineering Department: In charge of mass production during establishment of plants, or of new or improved products. Provides quality control supervision after going into operation.

## Sales

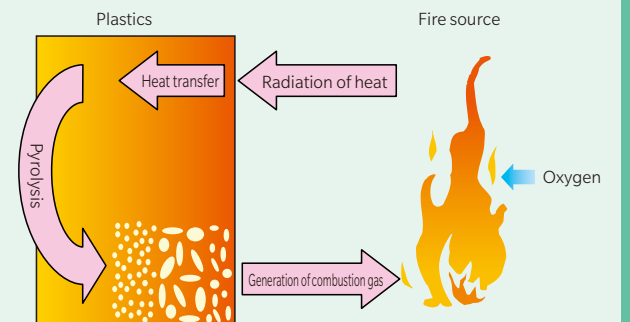
Polymer Additives Division: Establishment and controlling of manufacturing and sales policies  
ADEKA (SHANGHAI) CO., LTD.: Controlling of global sales of intumescent flame retardants  
Each sales bases: Engagement in sales activities in areas



## Schematic diagram of burning cycle

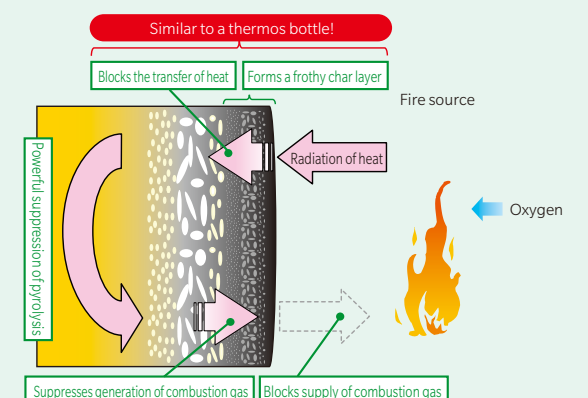
## Plastic with no flame retardant

Radiation of heat causes pyrolysis of the plastic, generating gas, which turns into fuel feeding the fire, creating a cycle that sustains combustion.



## Plastic with intumescent-type flame retardant

It catches fire at the start, but immediately forms a frothy, homogenous char layer with a heat and combustion gas insulating effect, known as an intumescent, preventing continued combustion, and resulting in the fire being extinguished.





# CSR Management

The ADEKA Group strives to achieve the company mission through management policies based on the ideas of “Contributing to society through our business” and “Realizing harmony and co-prosperity with society.” The group will further bolster corporate governance and strive to ensure compliance management in order to fulfill social expectations and demands.

## Corporate Governance

### Basic Stance on Corporate Governance

The company reorganized the management organization by introducing new systems including executive officer system and management conference, optimizing the number of board members and shortening their term of office, in an effort to dramatically boost administrative efficiency.

By appointing an additional outside director in June 2015, the company now has two independent outside directors, ensuring the board of directors bolster its supervisory function and greater administrative transparency.

### Compliance with Corporate Governance Code

In consideration of the intent and purpose of the Corporate Governance Code adopted on June 1, 2015, the ADEKA Group Corporate Governance Guidelines were laid down and publicized with the aim of raising the level of the overall group governance, ensuring executives and employees fulfil their own roles and coordinate to improve the corporate governance system.

The company will aim for sustainable growth through the practical application of these guidelines to realize transparent, fair, speedy and bold management.

## Compliance

### Basic Stance on Compliance

The management policies of the ADEKA Group allow responding sensitively to changes in the social and managerial environment. They aim to realize soundness of management and harmony with international society by ensuring ample protection of the interests of stakeholders. Such management policies and corporate missions are the essence and origin of compliance.

The ADEKA Group’s “compliance management” aims to fulfill the expectations and demands of society through the provision of new value that is useful in resolving social issues by providing high quality products and services created using ADEKA’s unique technologies, and through active communication with stakeholders, and social contribution activities as well.

### Strengthening the Group Compliance

In FY2015, video training materials (in Japanese, English and Chinese) on competition laws, and Anti-corruption regulations were distributed to every group company, and training programs were implemented. An ADEKA’s trainer visited group companies in China in September to run a training program using these materials.

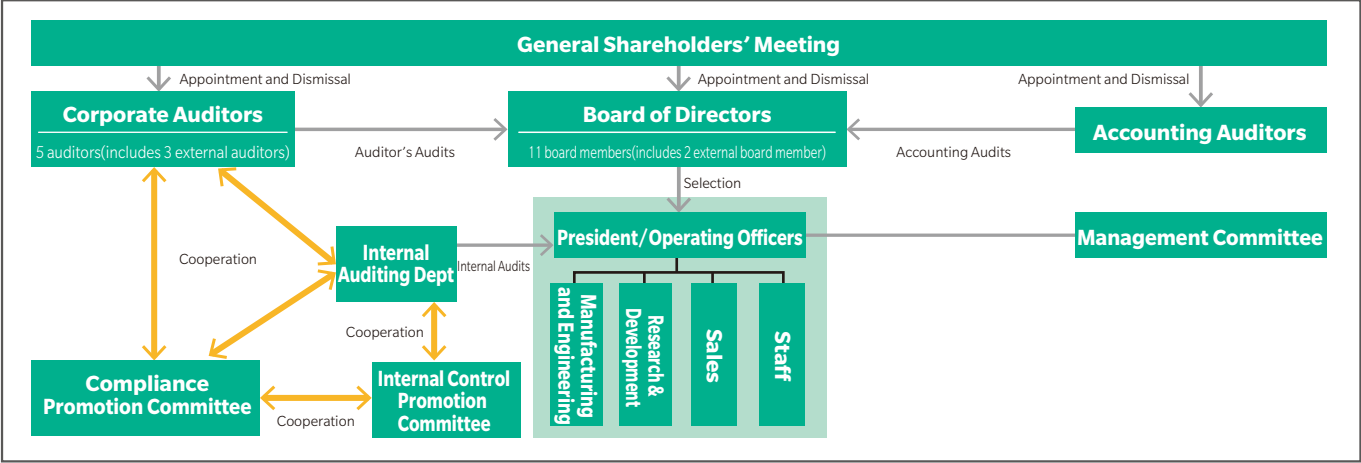
Moreover, revised versions of posters, cards and booklets of group management policies and the code of conduct were printed in multiple languages\* and distributed to overseas affiliates in an effort to promote greater awareness.

\* Japanese, English, French, Chinese (simplified and traditional characters), Korean, Thai and Malaysian



Posters of group management policies and the code of conduct

### Overview of Corporate Governance



### Monitoring of compliance functions

Every two years, the company carries out a survey on compliance awareness targeting all executives and employees.

The survey carried out in 2015 revealed a rise in awareness since the previous survey, across all levels of management and positions. The results of the survey are being used to make improvements in activities, and training and educational activities will continue moving forward.

### Overview of compliance awareness survey

Duration of survey: May to June 2015  
Target: Directors and employees of ADEKA (including part-time and contract employees):  
Total 1,777  
Response rate: 95.0%  
Company score: 4.1 out of 5 (rise in 0.1 point since the survey in 2013)

Principle Consulting Inc.  
Representative Director  
**Susumu Akiyama**



- ☐ Compliance awareness is high among employees. There is little scattering between departments and different levels of management, and there are no areas of weakness, testifying to stability in organizational management.
- ☐ Scores indicating the level of understanding for corporate philosophy and the code of conduct are high, testifying to people's deep understanding of them.
- ☐ Although the rating is the same as the average for other companies, the management of important information is relatively weak compared to other areas.
- ☐ There is a need to improve the reliability of the whistleblowing desk.

### Operational status of system for reporting compliance issues

ADEKA operates a system for reporting compliance issues.

Efforts are being made through PR in booklets and by protecting the anonymity of whistleblowers through the use of external services to improve the reliability of the system for reporting compliance issues.

Fiscal year	2012	2013	2014	2015
Number of cases	1	7	3	4

### Strengthening Information Management and Information Security

Upon revision of the Unfair Competition Prevention Act and the Act on the Protection of Personal Information, and the start of the Social Security and Tax Number System, the Company's Internal Information Management Regulations were revised and a “Corporate Non-Disclosure Manual” was drawn up in October 2015.

Moreover, with the series of cyberattacks on companies and other organizations in recent years, leading to incidents and accidents of leaked information, Mr. Tatsushi Yamada of NTT DATA Corporation was invited to give a seminar on information security in April 2016, which was attended by a total of 542 employees of ADEKA and other affiliated companies.





# Product Safety Initiatives

## Product Safety Initiatives

### Message from the Representative

In terms of product safety, efforts were made to actively promote management of chemical products, promote food safety and security, and bolster activities to eliminate complaints. By establishing the basis for managing the supply chain, the company provides products that are trusted by customers, safe and high quality throughout the world.

As for chemical products in FY2015, the company took measures in response to laws and regulations laid down overseas in 2015, and looked into a system for creating domestic and overseas SDSs \*<sup>1</sup>. A new system for gathering information on raw materials was also deployed to bolster the traceability of food. Furthermore, the company carries out “quality and PL inspections \*<sup>2</sup>” to ensure the deployment of quality and safety measures, and the inspections were carried out at 35 departments in FY2015.



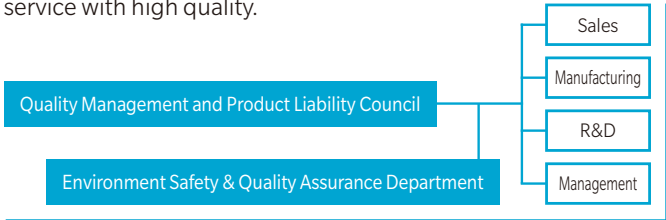
Operating Officer and General Manager,  
Environmental Protection Division  
Environment Safety & Quality Assurance Department  
**Koji Shishido**

### Quality Safety Policy for Fiscal 2015

1. Promoting activities to eliminate complaints and in-process defects thorough risk management and prevention of recurrence
2. Preparing standards documentation for raw materials and products and strengthening the management of chemical substances
3. Strengthening food safety with an eye toward food defense, and strengthening countermeasures against acts of sabotage

### Quality Management

The ADEKA Group is committed to providing safe products and service with high quality.



### Targets and Actual Results for Fiscal 2015

Item	Targets	Actual results
Full compliance with PL	Inspection and creation of SDSs for different countries on systems made to comply with overseas regulations	Inspection of SDSs for different countries using automatic SDS creation system
	Food traceability management system	Completion of compliance with countries with GHS* <sup>3</sup> in FY2015 (E.U., U.S., Singapore, Vietnam, etc.)
Management of chemicals		Bolstering of information management through the introduction of a new system for gathering information on raw materials
	Continued compliance with domestic and international regulations	Japanese Chemical Substances Control Law: Completion of reports on amount of existing substances and handling of priority assessment of chemical substances
	Stabilization of operations in making new applications under Korea REACH* <sup>4</sup> and the Taiwan Toxic Chemical Substance Control Law	Completion of additional registration in line with official announcement of China's inventory of hazardous chemicals
Safety and assurance for food products		Handling of substances already registered under Korea REACH
	Keep up efforts to provide information to customers	Completion of report on actual quantities in Taiwan
	Compliance with related laws and regulations in Japan	Submission of written reply, etc. pertaining to the management of the quality of product information supplied through product standards documentation
	Complete compliance with food labeling standards	Sharing of information upon compiling details of labeling changes based on food labeling standards and other related notifications

\*1 SDS: Safety Data Sheets: Sheets that contain information such as the name of the chemical substance and its properties, hazards, necessary precautions in its handling, etc.

\*2 Quality and PL inspections: An initiative unique to ADEKA to check for thorough deployment of measures regarding quality and safety

\*3 GHS: Globally Harmonized System of Classification and Labelling of Chemicals

\*4 Korean REACH: The Act on Registration and Evaluation of Chemicals of Korea, enforced in Korea on January 1, 2015

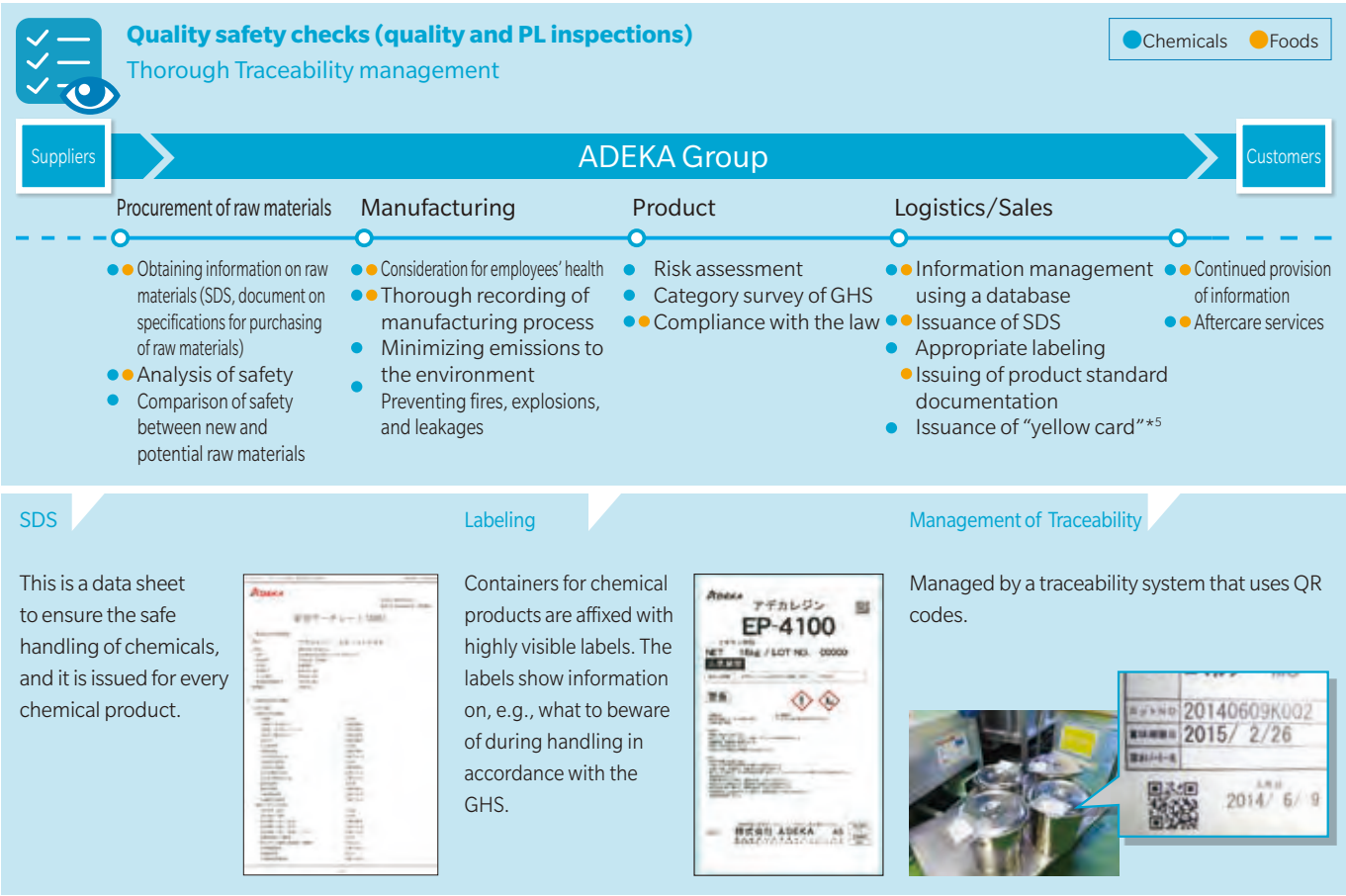
### Initiatives for Fiscal 2015

#### Initiatives of Quality Safety

As a general rule, information on product quality is gathered at the plant, and managed according to a PDCA cycle of the ISO quality management system. Important information on product quality is checked by the Environmental safety and Quality Assurance Department for measures and their effectiveness, and information is shared with other departments on the measures deployed at the Conference for Measures against Complaints held twice annually to make sure similar problems are never repeated.

#### Thorough management of the supply chain

The ADEKA Group implements thorough and appropriate management of all raw materials associated with the supply chain. Regarding chemicals, measures are implemented quickly to ensure compliance with domestic and international regulations relating to management of chemical substances. With food, plants are targeted for checks on the status of hygiene management, quality control, compliance with laws and product traceability, in an effort to raise the management level of food defense.



### Targets for Fiscal 2016

Item	Targets
Full compliance with PL	Issuing and operating of SDSs using an automatic SDS creation system that complies with overseas regulations
	Introduction of an automatic SDS creation system that is compliant with overseas laws and regulations
Comprehensive management of chemical substances	Compliance with related laws and regulations in Japan and abroad
	Ensuring reporting on actual quantities Korea REACH (June 2016), U.S. TSCA* <sup>6</sup> (September 2016)
Safety and assurance for food products	Ensuring continued provision of product information to customers
	Gathering of information on laws related to food labeling standards and ensuring continued compliance

\*5 Yellow card: An emergency contact card that describes the measures that should be taken by the person-in-charge in the delivery of dangerous substances

\*6 TSCA: Toxic Substances Control Act



## Special Feature

## To ensure safe operation of plants

Overseas group companies: Environmental and safety &amp; health activities



## Safety comes first: Rising tide of public opinion in Korea

There have been numerous accidents and disasters at companies in Korea in recent years, and there was a serious accident at the plants of ADEKA's customers, too. There has also been a rising tide of public opinion in the country that "safety comes first," and the government has bolstered laws relating to environmental safety.

ADEKA KOREA CORP. has decided to bolster EHS activities\*<sup>1</sup> to ensure the continuation of stable business activities and hope for the happiness of employees and their families by reconfirming the importance of safety management.

\*1 EHS activities: Activities in the fields of Environment, Health and Safety.

## Cultivating a corporate culture that strives in pursuit of safety

Before the company began EHS activities, around 30% of *Hiyari-hatto*\*<sup>2</sup> incidents were the result of carelessness, and there were hidden dangers that were like accidents waiting to happen. So the company first aimed to cultivate a corporate culture in which all employees would proactively pursue greater safety.

The employees already had a heightened awareness of safety, but the initiative further enhanced this, encouraging them to eliminate risks of accidents due to lapses in safety.

\*2 *Hiyari-hatto*: Incidents that did not result in serious accidents or disasters, but may have directly led to them.

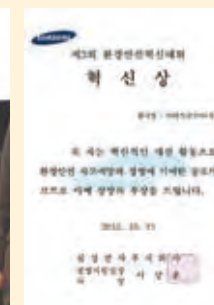
## We won high appraisal from our stakeholders



Awarded the Environment Minister's prize of the Ministry of Environment (Republic of Korea)



Awarded the Innovation Prize in the Samsung Electronics Co., LTD. Safety Innovation Contest



## Main examples of basic EHS activities

**Activities to improve the culture of safety**  
Cultivating a corporate culture of pursuing safety and striving to enhance employee awareness of safety



Saying the safety slogans out loud before commencing work or meetings

**Activities to redress unsafe factors**  
Eliminating potential causes of accidents by making improvements to unsafe areas on equipment and devices



Installing a static electricity removal sheet in front of dangerous goods warehouses to eliminate the risk of ignition accidents

**Activities to improve visibility of notices**  
Posting of safety notices all around the plant to share awareness for safety among all employees



Displaying of wiring path and procedures on power receiver panels allowing anyone to restore power during blackouts



Holding of EHS executive meetings every week to ensure internal sharing of improvements between departments



Stairs are given slip resistant surfaces to prevent slipping, and a fence is erected along the side to prevent secondary accidents



Reflective tape is stuck on forklifts, and speed limits are imposed on them to improve their visibility while working at night

Through these activities, employees dramatically raised their awareness for the environment, health and work safety, and we have been winning high appraisal from customers who visit the company. However, there is no endpoint to our efforts to ensure safety. We will continue to strive in pursuit of safety

so that we may not only fulfill our responsibilities in supplying products, but also contribute to the realization of a society which will ensure greater prosperity and happiness for our customers, as well as stakeholders.



# Environmental Conservation Initiatives

## Message from the Representative

The ADEKA Group seeks to understand the impact that our business have on the environment, and undertakes initiatives to prevent pollution of the air, water, and soil as well as to reduce the burden on the environment.

In terms of energy-saving activities, the company launched an initiative in FY2015 to reduce consumption with a focus on bound energy. The company is also striving to cut greenhouse gas emissions in response to the Freon Emissions Control Law. As for waste, the company executes planned disposal of PCB contaminated waste, and given the incidents of illegal reselling of discarded food, the company has bolstered management to ensure proper handling of all industrial waste disposed of by our company. Moving forward, the company will strive to become an eco-friendly company to ensure the continued growth of society.



Operating Officer and General Manager,  
Environmental Protection Division  
Environment Safety & Quality Assurance Department  
**Koji Shishido**

## Basic Environmental Policy

1. Strive to conserve resources and energy, recycle resources, and reduce the generation of waste, in order to prevent environmental pollution
2. Comply with domestic and foreign laws and regulations related to the environment, and at the same time strive to strengthen voluntary management and achieve further environmental conservation
3. Be aware that corporate activities are dependent upon the blessings produced through biodiversity, and seek to protect biodiversity
4. Take a proactive stance in procuring raw materials that impose a low burden on the environment, and contribute to the realization of a recycling-oriented society
5. Disclose the results of environmental conservation activities to society
6. Communicate with stakeholders and provide support to society and local communities in environmental conservation activities

## Environmental Initiatives System



## Targets and Actual Results for Fiscal 2015

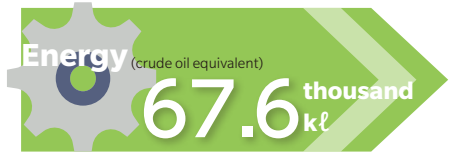
Detailed data that could not be included in this Report are available on our website(starting September 2016).  
<http://www.adeka.co.jp/csr/en/index.html>

Item	Scope	Targets	Actual results	Self-evaluation
Promote energy conservation	Production division	Reduce energy intensity by 1% or more year on year	Achieved energy intensity of 0.1846kiloliters per tonne (0.6% reduction from previous year)	△
		Reduce CO <sub>2</sub> emissions by 1% or more year on year	Generated 141,290tonnes of CO <sub>2</sub> emissions (0.8% reduction from previous year)	△
Reduce industrial waste generated	All ADEKA Offices	Reduce industrial waste output by 1% or more year on year	Generated 40,508t (2.6% reduction compared to previous fiscal year)	◎
		Achieve 100% recycling rate for outsourced volumes by fiscal 2020	Achieved a 39.8% recycling rate (Recycled 5,180 tonnes out of 13,026 tonnes of externally processed waste)	△
		Continue to maintain zero emission rate	Continued achievement of zero emissions*7	○
		Achieve landfill disposal volume of zero by fiscal 2020	Landfill disposal volume of 18.9tonnes (0.047% of industrial waste generated), Achieve zero emissions	○
Promote green purchasing		Improve green purchasing rate by 80% or more for stationery and non-stationery items by fiscal 2020	78.2%(Number of items purchased: 6,370 items out of 8,141)	△

## Environmental Initiatives System

Survey target: ADEKA and 10 main affiliated companies in Japan

### INPUT



### Business Process

Procurement of materials

Research and development

Manufacturing

Logistics, Marketing and sales

### OUTPUT

- Air emissions
  - Greenhouse gas emission (CO<sub>2</sub> equivalent)\*1 ... 153thousand tonnes-CO<sub>2</sub>
  - Fluorocarbons (converted to CO<sub>2</sub>) ..... 0.9thousand tonnes-CO<sub>2</sub>
  - SOx\*2..... 1.0t
  - NOx\*3..... 85.3t
  - Dust/soot\*4..... 3.5t
- Drainage ..... 12,613thousand m<sup>3</sup>
  - COD\*5 ..... 24.8tonnes
  - BOD\*6..... 34.1tonnes
- Industrial waste
  - Industrial waste generated..... 45,893tonnes
  - Landfill disposal..... 23.3tonnes
- CO<sub>2</sub> emissions from logistics .. 13.1thousand tonnes-CO<sub>2</sub>

Products 352 thousand tonnes

\*1 Total emissions arising from energy sources, non-energy sources, and processes

\*2 Sulfur oxides that are generated during the use of fuels that contain sulfur

\*3 Nitrogen oxide that is generated during combustion in Plant boilers and incinerators

\*4 Fine particles that are generated during the combustion of fuels and other materials

\*5 Amount of oxygen that is consumed during the oxidation of organic substances

\*6 Amount of oxygen required during the mineralization and gasification of contaminants in river water and industrial wastewater by microorganisms

Internal grading: ◎ : Exceeded expectations ○ : Meet expectations △ : Below expectations

\*7 ADEKA defines "complete elimination" as landfill waste that amounts to less than 0.1% of the total volume of industrial waste output.



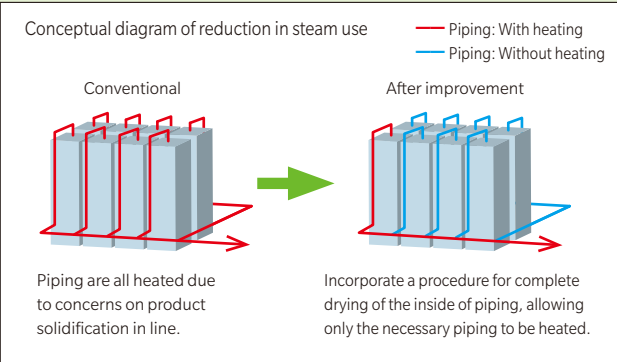
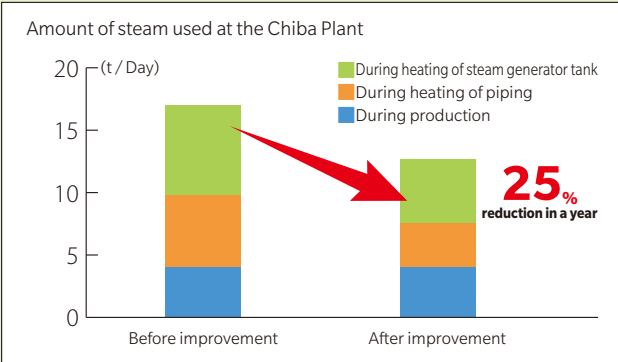
Initiatives for Fiscal 2015

energy conservationactivities

The ADEKA Group has bolstered the operational management of utility facilities\*<sup>1</sup>, and numerous meticulous measures have been implemented to, e.g., make equipment more energy efficient. Moving forward, we believe there is a need to shift the focus more to improving manufacturing processes and cutting reliance on bound energy.

We implemented a quantitative revision of the amount of steam used at the Chiba Plant in FY2015. In FY2016, steam flowmeters were installed at all plants, and efforts have been made to identify and reduce the amount of steam consumed as bound energy.

\*1 Utility facilities: Facilities that provide the source of power needed to operate plants, such as electricity and industrial water.



Working in solidarity at plants to “ensure eco-friendly manufacturing”

Assistant manager, Section-2, Production Department, Chiba Plant  
**Yoshihiro Suzuki**

At our plant, everyone works in solidarity to engage in four safety activities, as well as activities to cut costs, in order to contribute to our customers, society, the global environment and the growth of our company. The improvement measures implemented this time were just a part of these initiatives.

The conventional method of fluidizing highly viscous products is to use steam to heat the inside of tanks and pipes. But improvements were made to eliminate wasteful heating,

and waste heat from reactions was recycled resulting in a roughly 25% reduction in the steam used. The product tank in particular used to be heated at all times, but we stopped this practice, so we had difficulty bringing the temperature up to the predetermined level just prior to production.

In the future, we will maintain constant awareness of the global environment and engage in more energy saving activities.

Confirming the status of industrial food waste treatment

In recent years, a lot of attention has focused on the safety and security of food after news of illegal reselling of waste food by industrial waste disposers. The ADEKA Group made renewed efforts to confirm the status of treatment of industrial food waste at all group companies in Japan.

The investigation revealed problems with some of the

contracts, and insufficient on-site confirmation of disposal sites required of disposers, and steps were taken immediately to rectify the situation.

Moving forward, the group will adhere to guidelines set forth by the government to bolster the management of not only food, but all waste.

Promoting biodiversity



Based on the ADEKA Group Biodiversity Policy, the ADEKA Group will implement initiatives to promote the preservation of biodiversity and its sustainable use. A biotope has been maintained in the grounds of the Fuji Plant since FY2014. The second nature observation session was held there in April 2016, which was attended by a total of 43 people consisting of employees and their families.



The natural environment around the Fuji Plant

Fuji City Environmental Advisor **Takashi Yamada**

In the grounds of the Fuji Plant are 44 species of trees, 52 species of herbaceous plants, 9 species of ferns, 7 species of mosses and 13 other species of flora and fauna, making a total of 125 species. I work as an advisor in establishing the biotope, because I believe it is important for people to familiarize themselves with the nature found on the plant premises.

The nature observation sessions give many children and their parents a chance to experience the wealth of nature while engrossing themselves in interacting with it. I hope to continue holding these events in the hope that these experiences will motivate everyone to look after, protect and nurture nature.

The evergreen trees of the biotope must be pruned regularly, and a lot of work is required to maintain the soil. It will also become important to maintain the edges and depth of the pond so that it may be used effectively. I hope that efforts in the future will further boost biodiversity on the premises.

Consideration for the Environment During Production Survey target: ADEKA

Greenhouse gas emissions				(1,000t-CO <sub>2</sub> )
Fiscal year	Production Department	Non-production Departments	Total	
2011	144.5	3.9	148.3	
2012	150.6	4.7	155.3	
2013	145.2	5.4	150.6	
2014	142.5	5.6	148.1	
2015	141.3	5.5	146.8	

Water consumption				(1,000m <sup>3</sup> )
Fiscal year	Production Department	Non-production Departments <sup>*2</sup>	Total	
2011	11,116	61	11,177	
2012	11,425	57	11,482	
2013	11,625	55	11,680	
2014	11,935	52	11,988	
2015	12,095	54	12,149	

\*2 The values differ from those shown in last year's report as the result of revising the method of calculating the amount of water used in non-production departments.

Energy consumption				(1,000kℓ)
Fiscal year	Production Department	Non-production Departments	Total	
2011	60.3	2.5	62.9	
2012	61.5	2.6	64.0	
2013	62.2	2.6	64.9	
2014	62.0	2.7	64.8	
2015	62.3	2.7	65.0	

Amount of industrial waste generated				(1,000t)
Fiscal year	Production Department	Non-production Departments	Total	
2011	35.0	0.9	35.9	
2012	37.9	0.7	38.6	
2013	38.6	0.5	39.1	
2014	41.0	0.6	41.6	
2015	40.0	0.5	40.5	

Targets for fiscal 2016

Item	Scope	Targets
Promote energy conservation	Production division	Reduce energy intensity by 1% or more year-on-year in the production departments
		Continued efforts to aim for zero emissions through resource recovery and recycling
Reduce industrial waste generated		Promoting proper treatment of industrial waste (Check of contracts, inspections of contractors, measures to prevent reselling of food waste, etc.)
		Year-on-year increase of over 1 point in the rate of recycling food
Promote green purchasing		Achieved green procurement rate of above 80% for specific items of stationery



# Creating a Pleasant Working Environment

## Message from the Representative

The ADEKA Group concentrates on developing and bringing out the full potential of each and every employee, and strives to cultivate a corporate culture that makes it easy for employees to work by giving proper credit to acquired skills and the results achieved accordingly.

For the realization of a better quality of life, it was decided in FY2015 that employees would be given paid leave for child-care and a more comprehensive system to allow for the raising of children. In this way, effort was invested in promoting a better work-life balance and greater diversity.

The company will continue fostering the next generation of human resources based on the key phrase, “respecting diversity and individuality,” in promoting a safe and motivating work environment where employees will continue to grow.



Operating Officer and General Manager,  
Human Resources Department  
**Susumu Yasuda**

## ADEKA Human Resources Principles

- ▶ Respect the human and personal qualities of employees
- ▶ Develop human capital who have a positive social impact
- ▶ Support self-realization by employee
- ▶ Develop employees with initiative

## Human Resources Data Target: (1) Consolidated, (2) – (7) Non-consolidated

Item	Fiscal year					
	2013		2014		2015	
(1)No. of employees	3,034		3,099		3,241	
(2)No. of employees	1,530		1,545		1,561	
(3)Average age of employees	38.4	male :38.8	38.5	male :38.8	38.9	male :39.1
		female:36.3		female:36.6		female:37.7
(4)Average number of years of service	15.5	male :15.8	15.5	male :15.7	15.9	male :16.1
		female:13.6		female:13.8		female:14.7
(5)Ratio of female employees (%)	13.5		13.6		13.2	
(6)Ratio of female managers (%)	2.3		2.9		2.7	
(7)Number of newly graduated recruits	57	male :52	54	male :47	49	male :46
		female:5		female:7		female:3

## Targets and Actual Results for Fiscal 2015 [Support Plan for Nurturing the Next Generation (April 1, 2015 - March 31, 2018)]

Targets	Actual results
Enhancing childcare nursing leave, and promoting the involvement of male employees in childcare	Employees given some paid leave for child-care starting April FY2015 (introduction of system to allow for taking leave accumulated over said period)
	Improvement in convenience by allowing childcare leave to be taken half-a-day at a time, instead of whole days, starting April 2015
Enhance the relevant systems in order to promote work-life balance amongst employees	As the result of a labor-management initiative to promote the taking of five or more days of paid leave per year, the rate of achievement was 72.5% (an increase of 9.6 points over the previous year)

## Promoting Diversity

The ADEKA Group’s Code of Conduct clearly emphasizes respect for fundamental human rights, and all employees of the ADEKA Group are in compliance with this. Furthermore, in every aspect the processes of recruitment, hiring, and promotions we respect the value of diverse human resources, regardless of nationality, age, sex, race, or disability, and have developed a level playing field where each individual can exert his or her personality and play an active role. Work regulations, too, were laid down to respect the diversity and individuality of people, and prohibit any form of harassment thereof.

### Promoting Diversity:Initiatives for Fiscal 2015

Re-employment rate for retirees	<b>100%</b> 4 consecutive years since FY2012
The employment rate of people with disabilities	<b>2.2%</b>

Employees of overseas Group	<b>1,084</b> Increase of 120 people since FY2014
Seminar held to promote the active participation of women targeting female science students	

### Corporate activities rooted in local communities

Overseas, the ADEKA Group actively hires local people. ADEKA (SINGAPORE) PTE. LTD. engages in recruitment activities in neighboring countries, and in FY2015, two local people were recruited in Indonesia.

Moreover, to make sure that employees of all nationalities and opinions are able to coexist and give full play to their individuality, the company strives to establish a work environment based on the local culture.

However, many countries have a culture of job hopping, and companies run the risk of wasting time and resources on training employees. The ADEKA Group shares management policies and runs joint training programs with other bases to

promote solidarity within the group, and the number of local employees has been increasing by the year. The number of veteran local employees has also been increasing.



Recruitment activities in Indonesia

### Active participation of women

The ADEKA Group is open to recruitment and promotions regardless of gender, and supports the active participation of women.



Planning of seminar to promote the active participation of women

Recruitment & Development Group  
Human Resources Department

**Miyuki Tomioka** (Photo on right)  
**Makiko Kamiya** (Photo on left)



This seminar was planned and organized with the aim of contributing to the fostering of careers among female students who carry the future of Japan on their shoulders, prompted by the enactment of laws to promote women’s participation in society in April 2016. The seminar provided an opportunity for exchanges between women employees in a variety of positions and students. Feedback was received from students saying things like, “It helped clear up vague anxieties I had toward work” and “I found it very useful in thinking about work.” The company will continue implementing initiatives to support the active participation of women.



Work-Life Balance

Work-Life Balance:Initiatives for Fiscal 2015

Average number of overtime hours	<b>14.6 hours per month</b> 36-minute decrease compared to FY2014
Rates of returning to and remaining at work after taking child-care leave	(Both rates of returning to and remaining at work) <b>100%</b>

Regulating the Number of Working Hours

As part of establishing a corporate culture that allows employees to maintain their health, and work with vitality, initiatives are implemented to eliminate long work hours by, e.g., setting days when people must go home by a predetermined time, and ensuring appropriate work hours. As the result of these initiatives to date, the average number of overtime hours was 14.6 hours/month, realizing a 36-minute decrease compared to the previous year.



Weekly labor-management patrols to ensure workers do not stay past a set time

Main Systems Aimed at Providing Childcare/Nursing Care Support

\*The underlined sections are areas in which we have exceeded the legal requirements.

Maternity leave	6 weeks before birth (14 weeks in the case of twins) 8 weeks after birth
Spousal maternity leave	<u>Three days or less</u> in cases where the spouse has given birth
Childcare leave	Until the child reaches one year of age, in principle An extension of up to <u>one year</u> may be approved under special circumstances. *Calculating from the first day of childcare leave, special accumulated leave may be approved for up to <u>five consecutive days</u> . The period of special accumulated leave will be regarded as <u>paid leave</u> .
Childcare nursing leave	For employees who are raising children below <u>grade four of elementary school</u> , it is possible to take up to <u>10 days of leave per year</u> , regardless of the number of children, for situations in which they have to take care of an injured or sick child (including vaccinations and health screenings for the child, as well as suspension of classes.) *Childcare nursing leave may be taken in <u>half-day units</u>
Nursing care leave of absence	A total of up to <u>365 days</u> for each person requiring care
Nursing care leave	A total of up to <u>20 days per year</u> for each person needing care
Shortened working hours	Childcare: Until the end of the child's fourth year in elementary school Nursing care: A total of up to <u>365 days</u> , combined with nursing care leave of absence *Both may be reduced up to a maximum of 2 hours in 30-minute units.

Number of people taking advantage of child-care leave system	<b>12</b> Includes four men and 100% of women
Rate of anual leave usage	<b>72.5%*</b> Increase of 9.6 points over previous year


\* Average among union members. Calculated for the period between July 2015 to June 2016

Keeping a balance between work and childcare/nursing care

ADEKA has introduced a new system that supports employees in striking a balance between their work and childcare/nursing care duties at a level above legally stipulated requirements.

Initiatives were implemented in FY2015 to ease the conditions for taking partial paid leave for child-care and nursing children, and 12 employees took advantage of this system.

The system has also been bolstered for supporting people on child-care leave or after they return to work by offering, e.g., training assistance to acquire knowledge and skills (used by 16 people in FY2015) and a system for shorter work hours after returning to work (used by 22 people in FY2015). As a result, over FY2015, the rates of returning to and remaining at work after taking child-care leave were both 100%.



**Experiencing the difficulties of child-care through the child-care leave**

Purchasing Group  
Purchasing and Disteibution Department  
**Genki Ikeda**

When I had my first child, I took a week off as child-care leave after my wife came home from her parents' place with the baby.

Until then, a week seemed like a long time, but while taking care of the baby it was harder than I imagined and the week flew by. The child-care leave gave me a better understanding of the difficulties of child-care, and it made me more grateful toward my wife for taking care of the baby by herself on most days.

I would like to thank my boss, colleagues and other associates for their cooperation and support in taking the child-care leave. I plan to continue doing my best at both work and raising my baby.

Human Resource Development

The ADEKA Group recognizes that employees are an important management resource for a corporation. We regard human resources as assets, respect the motivation and aspirations of each individual, and put effort into developing human resources who can lead future generations.

Human Resource Development:Initiatives for Fiscal 2015

Countries dispatched to for overseas training	<b>Expanded to five countries</b> United States, China, and Singapore,England,Germany
Number of employees dispatched through the overseas training program	<b>5</b>
People who took advantage of the system for attending business school	<b>62</b>

Enhancing the System for Developing Global Human Resources

With the aim of acquiring language skills, international cultural literacy, and different business customs necessary for global human resources, the company has a system of dispatching mainly younger employees for six months overseas. The number of countries they are dispatched to was expanded from three to five countries in FY2015, in an effort to foster human resources capable of handling the variety of needs of domestic and overseas customers. Overseas language instructors were also invited to give lessons in English, Chinese and Korean at offices in Japan, and the system was used by 100 employees.



Presenting the results of overseas training

Targets for fiscal 2015 [Support Plan for Nurturing the Next Generation (April 1, 2015 - March 31, 2018)]

Targets	FY2016 Initiative Landmarks
Aim for more than two men and more than 80% take-up rate for women for the actual rate of childcare leave taken during the projected period	In-house bulletin boards, etc. are used in continuous efforts to disseminate information about the leave systems and to raise awareness about the use of childcare leave
Develop an environment to promote the involvement of men in childcare	Expansion of system for shorter work hours for child-care to encourage greater participation in raising children
Enhance the relevant systems in order to promote work-life balance amongst employees	Expansion of nursing leave to support nursing while working
Continuously implement initiatives to reduce the number of overtime hours	Conduct internal patrols during the day set aside for leaving work on time once a week, and ensure that it is strictly enforced

Advantage of the system for attending business school

The company is investing considerable effort into fostering the next generation of younger employees, who form the backbone of the company, through the system allowing them to attend business school. By learning the theories behind marketing and leadership, they train to think and act in a way that allows them to achieve their goals in a variety of positions and roles. By learning at an external school, they also acquire the ability to see the company more objectively, and it is hoped that the initiative will lead to the fostering of people who will breathe new life into the company.



**Taking advantage of the system for attending business school**

Legal Affairs Group  
Legal Affairs and Publicity Department  
**Shin Takeuchi**

From a desire to acquire knowledge on everything about managing companies, I took advantage of the system for attending business school to acquire extensive knowledge in everything from administrative strategies to accounting, marketing and finance.

At the school, I competed in friendly rivalry with people from other companies, which was stimulating, and something I would not have been able to experience within the company. I also learned to think rationally at all times, which I have found to be useful in preparing documents and negotiating within and outside the company. It has allowed me to carry out deeper analyses of the industry and companies.

Based on what I learned at business school, I will be afraid of making mistakes, and be more assertive in offering proposals, to engage more actively in my work.



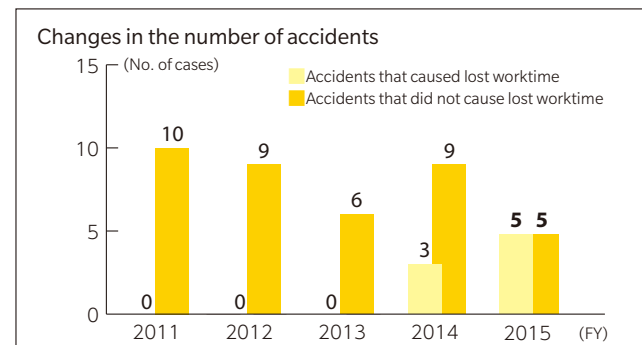
# Initiatives for Occupational Health and Safety

The ADEKA Group considers safety and security to be the most important issue to companies, and as such strives to establish a safe workplace by enhancing the safety awareness of all employees through the operation of OHSAS 18001, an occupational health and safety management system, the establishment of safety and health committees at every workplace, and the activities of the Zero Accident Committee.

## Occupational Safety

### Occupational Accidents

There were a total of 10 occupational accidents at the company in FY2015, including five accidents that required time off work, and five that didn't. The accidents that required time off work included four cases of broken bones and one case of heatstroke. When the accidents are differentiated by department, many of them occurred at companies cooperating with plants, highlighting the importance of closer communication, and sharing of safety best practices. On the other hand, when the accidents are differentiated by age, the number of accidents tends to increase beyond the age of 40. There is a need to take adequate care of deterioration in physical capabilities due to aging, and promote greater awareness of "know-why"\* and education on the dangers.



\*Know-why education: Rather than simply absorbing the contents of work manuals, etc., employees ask questions such as "Why will we do so?" in order to gain an understanding about the reasons, principles, and objectives behind the training.

### Various overseas group companies achieve continued zero-accident operation

The production bases of the ADEKA Group runs improvement activities based on the four areas of safety (occupational safety, quality safety, equipment safety and environmental safety). In FY2015, ADEKA FINE CHEMICAL TAIWAN CORP. achieved 500 thousand hours of continued zero-accident operation, while AMFINE CHEMICAL CORP. (U.S.) achieved 350 thousand hours of continued zero-accident operation.



Continued zero-accident operation  
(ADEKA FINE CHEMICAL TAIWAN CORP.)



Awarding of safety certificate in Kentucky  
(AMFINE CHEMICAL CORP.)

### Holding of the "Inter-Workplace 5S Contest"

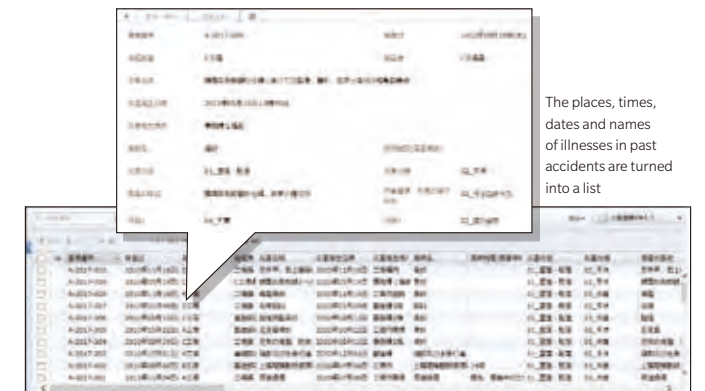
With the aim of promoting 5S activities (*seiri*, meaning sorting, *seiton*, meaning straightening, *seiso*, meaning cleaning up, *seiketsu*, meaning standardization, and *shitsuke*, meaning discipline) at the Kashima Plant, an Inter-Workplace 5S Contest is held once a year.

In this contest, each department at the plant promotes its 5S activities. The company will continue this tradition so that not only Kashima Plant, but the ADEKA Group as a whole will strive to further hone its 5S activities through friendly rivalry.



### Creating a database of accidents in the past

An online database was created to integrate and manage data on past accidents, and it began operating in FY2016. Moving forward, this database system will be used to prevent the recurrence of accidents by inputting the procedural standards and specifications at each workplace into the database. Efforts will be made to prepare more materials on safety and bolster safety education to prevent accidents and disasters through visualization of information on safety at each workplace.



Screenshot of database on past accidents

The places, times, dates and names of illnesses in past accidents are turned into a list

## Maintaining the Health of Employees

### Health care of Employees

The ADEKA Group conducts regular health screenings twice a year for all employees, and has enhanced the system by providing follow-up examinations, conducted by industrial specialists or nurses, for individual employees following the regular health screening.

### Introduction of healthy box lunches

Healthy box lunches were introduced at Urawa R&D Laboratory in FY2015. This lunch, which cuts the calorific value of conventional lunches in half, has been popular among employees concerned about their health. A low calorie menu was also introduced at the Chiba Plant.



### Mental healthcare initiatives

In accordance with the revision of the Industrial Safety and Health Act, ADEKA laid down a basic policy on a stress-check system in December 2015, and began running stress checks in FY2016, which are held every year in May.

### Basic policy on the stress-check system (excerpts)

1. Applies to all employees. All employees of small business bases with fewer than 50 staff members in Japan, including those dispatched overseas.
2. The person in charge of running checks and operating the system shall be the industrial physician at the workplace, who normally monitors the state of health of employees.
3. The system will be operated in coordination with external services to ensure employees at all workplaces are given supervision by their physicians through interviews.
4. Based on the results of group analyses, measures shall be considered as necessary at each workplace to improve the work environment.

## Security and Disaster Prevention

The ADEKA Group seeks to prevent accidents and disasters before they occur, and strives to prevent the spread of damage in the event of an accident or disaster.

For that reason, each of the offices puts efforts

into promoting risk assessment for security and disaster prevention, taking earthquake countermeasures for buildings and plants, and establishing security management systems for equipment.

### Running of regular emergency drills in Japan and overseas

The ADEKA Group runs regular integrated emergency drills to prepare for a variety of incidents, from natural disasters to fires caused by the leaking of chemicals. The results of training in emergency measures and the status of evacuation are fed back to all employees to share information and educate them, in an effort to train each and every employee to respond calmly in emergency situations.



Carrying out training in collaboration with affiliated companies  
(ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD.)

Carrying out fire drills  
(ADEKA FOODS (CHANGSHU) CO., LTD.)



# T

## Together with Stakeholders

# Together with Stakeholders

### Shareholders / Investors

Disclosure of appropriate information at the appropriate time  
ADEKA strives to disclose accurate corporate information in a fair and timely manner to all stakeholders, including our shareholders and investors, based on our disclosure policy. Our disclosure is not limited to the scope required under current laws and regulations. Rather, important information pertaining to company management is actively disclosed, including financial closing information and business plans.



154th Annual General Meeting of Shareholders

### Dividend Policy

ADEKA has internal reserves for investing in growth businesses based on mid-to-long-term goals, but the company also has a basic policy of stable and sustained redistribution of profits to stockholders. The annuity for FY2015 increased 4 yen from the previous year to 30 yen per stock/year.

### IR Activities

The company engages in active IR activities, including the holding of briefing sessions on financial results and issuing a tool for explaining the results for the benefit of institutional investors and analysts. In FY2015, briefings on financial results were held every half year, and 115 individual meetings were also held, in addition to the holding of plant tours.



Holding of a plant tour for institutional investors(Kashima Plant)

### Customers

The ADEKA Group takes active part in exhibitions and conferences to promote the products of the group in order to solve the problems of customers through unique technologies and solutions.

Moreover, technical training programs and seminars are held for customers to identify their daily issues, so that we can offer them solutions.



Participating in an overseas exhibition



### Holding a technology exchange event with customers

General manager, Department I  
Food Development Laboratory  
**Satoru Takeda**

Customers of ADEKA FOODS (ASIA) SDN. BHD. were invited to ADEKA's Head Office for a technology exchange event on bread and confectionary making. The objective was to deepen understanding for raw materials and improve the quality of products.

Holding technical training programs with overseas customers often offers us insights into differences in taste, making us realize that food is tied closely to the history, culture and climate of the local region.



Moving forward, we want the ADEKA Group to work in solidarity to spread products throughout the world that are a perfect match for what customers want in bread and confectionary, through these exchanges with customers around the world.

### Shareholders / Investors

### Our Business Partners

### Local community

### Customers

### Administrative agencies

### Children who carry the future on their shoulders

In the hope of the healthy growth of children as they head toward the future, the ADEKA Group engages in activities to support children through the power of science.



Accepting interns  
(ADEKA FOODS (CHANGSHU) CO., LTD.)



Visit to an elementary school  
(AMFINE CHEMICAL CORP.)



Chemistry experiment class held



Holding of the "ADEKA Cup," a judo and kendo tournament for elementary and junior high school students



Administrative agencies

The ADEKA Group will not only ensure adherence to laws and fulfillment of tax obligations, but the group will also collaborate with the government and NPOs as an upright corporate citizen to engage actively in advancing regional policies and public welfare.

Conclusion of an agreement to provide well water in a disaster

At the Mie Plant, the abundance of well water in the surrounding area is used in production as a coolant, and after use, it is recycled for agricultural use by the local community. We wanted to contribute more to the local community, and in January 2016, we concluded an agreement with Toin-cho on using the well water in a disaster. Moving forward, we will continue communicating with the local government and people so we can contribute more to the local community.



Our Business Partners

Stable and safe procurement of raw materials

In 2002, ADEKA laid down Procurement Management Standards to ensure fair and just procurement activities based on trust and cooperation with customers. In order to ensure a stable supply of products, it is necessary to not only hold a suitable amount of inventory, but efforts are also being made to secure inventory of raw materials used in our products by suppliers, and secure multiple channels of procurement. Moreover, the company is implementing thorough traceability management from procurement of raw materials to delivery of products by carrying out regular quality inspections at raw materials manufacturers and production contractors.

Initiatives in halal-compatible logistics

At ADEKA FOODS (AISA) SDN. BHD., talks and study meetings were held for the benefit of several logistics companies to deepen mutual understanding for halal. Of these participating companies, one company acquired halal certification. Other than logistics, the company has been invited by the government to give talks as an advanced halal company in Malaysia, testifying to the high level of expectations among stakeholders. Moving forward, the company will continue activities to promote halal in order to ensure the delivery of safe, secure products.



Strengthening the Partnerships with Our Business Partners

The ADEKA Group aims to grow and develop alongside its business partners. To that end, we create opportunities to provide business partners and retailers with information about business policies from top management every year, and put effort into strengthening the relationships and deepening mutual understanding by exchanging information and opinions on a regular basis. Furthermore, in the food business, “RisU University” is held for the salespeople of distributors and new recruits of the ADEKA Group to teach them the basics of fats and oils, and negotiation skills. The event offers an opportunity to learn about the importance of stepping beyond the bounds of companies and working in cooperation to offer customers proposals.



Holding of meeting for special agents for chemical products



Holding of Risu University

Administrative agencies

Our Business Partners

Customers

Children who carry the future on their shoulders

Shareholders / Investors

Local community

We believe that companies are able to continue existing because of the understanding and cooperation of the local people and community. The ADEKA Group will continue activities to contribute to local communities and societies by working hand in hand with them, and growing together.



Participating in Industry Festival (Soma plant)



Donation of Christmas cakes to orphanages in the neighborhood (Akashi plant)



Participating in a campaign to promote use of local market (ADEKA KOREA CORP.)

Support to disaster-stricken areas in the Kumamoto Earthquake

The ADEKA Group donated 10 million yen through the Japanese Red Cross Society to the victims of the Kumamoto Earthquake in 2016, and to restore the disaster-stricken area. The Group prays that the disaster-stricken area recover as soon as possible.



### Implementing CSR activities at a global level

Professor, Faculty of Economics Takasaki City University of Economics **Takeshi Mizuguchi**

Obtained a PhD from the School of Business Administration (Meiji University). Specializes in responsible investment and non-financial information disclosure. He arrived at his current position in 2008 after becoming a lecturer in the Faculty of Economics at Takasaki City University of Economics in 1997, then an Associate Professor of the same faculty. He worked in successive positions as Auditor and Director of the Society for Environmental Economics and Policy Studies, a member of the Central Environment Council's Expert Committee on Environment and Finance, and Chairman of The Japanese Institute of Certified Public Accountants' Expert Committee on Environmental Accounting. Books he has published include, "Responsible Investment – Changing the Future through the Flow of Capital" (Iwanami Shoten, Publishers) and "Stream of Environmental Finance and Responsible Investment" (edited and written by Chuokeizai-Sya, Inc.).



#### Creating social value through business

I would like to express my respect for your company, which has met the needs of the times while expanding the business over a hundred years, ever since it founding in 1917. The polymer additives, which appeared in the feature article this time, may not stand out, but it plays a vital role, contributing to society through the business. I think CSR activities have their roots in the creation of value through business.

On the other hand, the scope of a company's social responsibilities is directly proportional to its influence. Your vision for 2025 is to "Become a global company that creates value through innovative technologies." Aiming for such a goal, I believe, will also increase your social responsibility. I praise your company highly for your initiatives to date in environmental preservation and your sincere efforts to improve the workplace environment, but I don't think you can continue extrapolating these efforts into the future. To win recognition throughout the world as a truly global company, I believe you will need to establish a system for tackling wider issues shared by society. From this perspective, there are two things I would like to point out as described below.

#### Responding to the Paris Agreement

Two major CSR-related international agreements were concluded in 2015. One was the Sustainable Development Goals (SDGs) set by the United Nations. The other was the Paris Agreement adopted at COP21. Companies too, will be asked to contribute to the achievement of this international goal. The Paris Agreement in particular aims

to keep global warming well below 2°C, and achieve a balance between man-made emissions and absorption of greenhouse gases by the latter half of the century. This is a goal, which dramatically changes what until now had been taken for granted in business. I would like to ask if you have made sufficient preparations for this. For example, the CDP and Global Compact are jointly working on the setting of The Science Based Targets that is compatible with the 2-degree goal. I think that participation in a global initiative like this is one of the things that should be considered.

#### The ESG risks along the supply chain

In recent years, there has been a growing concern about the risks associated with the supply chain, which is the ESG (environmental, social and governance) issue. For example, at your company, palm oil is used as a raw material in the food business. However, there are fears that palm oil is one of the main products associated with tropical rain forest destruction, so care must be taken in choosing where it is procured. Or in the field of semiconductor materials, if you were to use mineral resources, you would need to make sure that biodiversity is not being destroyed in mining the minerals. Other examples include the use of forced labor along the supply chain. It may be best for the company to focus on individual issues that are generally perceived to be problematic, and explain the measures you implement to address them. Because your company has so far engaged in CSR with sincerity, I hope you will aim to advance these activities to the next level.

### Response to Third Party Opinion

**Koji Tajima** Director and Operating Officer

I would like to express my gratitude to you for your assessment of the ADEKA Group's CSR activities, and your valuable opinions.

We feel greatly encouraged by your words of appraisal regarding our CSR activities.

On the other hand, we feel that your views on "contributing to international goals" and "risks along the supply chain" are vital issues to our group in our engagement in CSR activities at a global level. We must

become aware of the effect our corporate activities have on society, and what society expects of companies, so that we may fulfill our responsibilities as a member of international society.

In order to continue living up to the expectations of our stakeholders, we will carry out CSR activities with the aim of boosting our corporate value and realizing a sustainable society.

## Results of the "ADEKA Group CSR Report 2015" Survey

ADEKA has conducted a questionnaire in order to obtain opinions from within and outside the company so as to further improve on our activities and reports in the future. Thank you for your valuable comments and feedback. The following is a report of the results of the survey

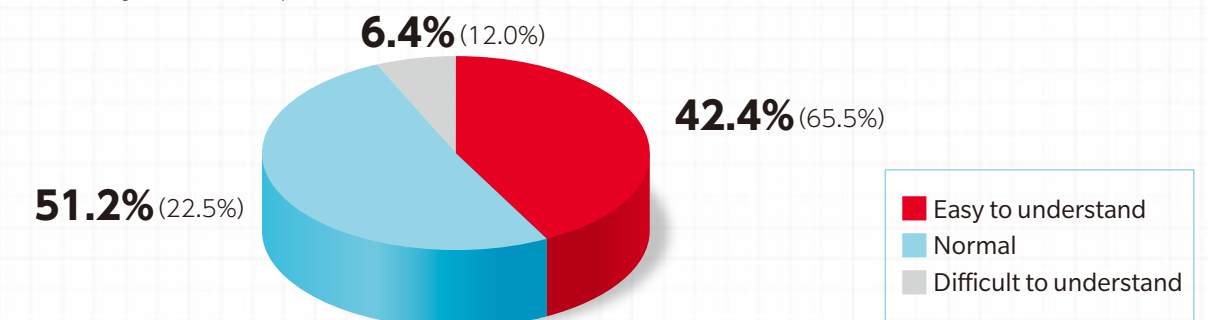
Effective responses: 450 (2014 Survey: 351)

including responses from affiliated members of ADEKA Group

Survey method: Questionnaire at the end of the report, external website questionnaire

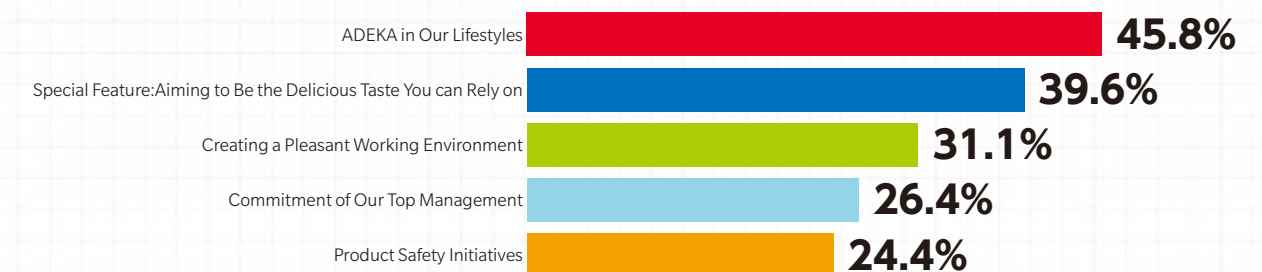
### Contents of the "ADEKA Group CSR Report 2015"

(Within the brackets are figures from a 2014 questionnaire)



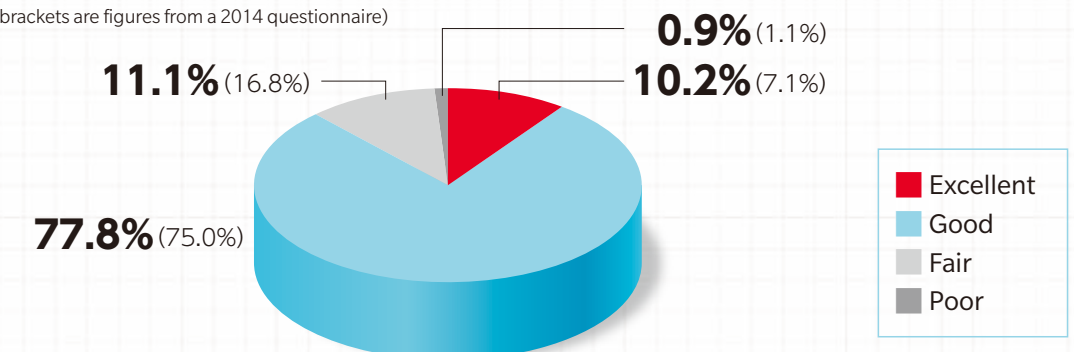
### Articles that I found interesting

(Multiple answers)



### ADEKA Group's CSR activities

(Within the brackets are figures from a 2014 questionnaire)



### Main feedback

Food safety is an issue that affects everyone, so it was good to see it as the focus of the feature article.

A lot of the information is based on data that has been gathered and reported formally, so I would like it to be made more accessible.

I expect to seeing the evaluation of △ (falling below the target) of environmental preservation activities become ○ (achieving the target) very soon.

ADEKA Group CSR Report Back Number

<http://www.adeka.co.jp/csr/en/report.html>



CORPORATE SOCIAL RESPONSIBILITY

**CSR** **2016**  
REPORT

**Environmental Data**





Contents

Basic Environmental Policy, Environmental Initiatives System ..... 2

Environmental Action Goals, Plans ..... 3 ~ 4

Environmental Accounting ..... 5

Material Flow ..... 6

Prevention of Global Warming/Prevention of Water Pollution/ Prevention of Air Pollution..... 7 ~ 8

Reducing Industrial Waste ..... 9 ~ 10

Reducing Emissions of Chemical Substances ..... 11

Acquisition of Management System Certification ..... 12

Environmental Data

Period Covered by This Report

2015 Fiscal Year ended March 31, 2016  
\*From January 1, 2015 to December 31, 2016 for overseas affiliated companies

Scope of This Report

Covers ADEKA and the major domestic and overseas companies in the ADEKA Group.

\*Included overseas Group companies are increasing, so there is fluctuation in the figures  
(nine companies were included from FY2011 to FY2012, ten from FY2013 to FY2014, and 11 in FY2015).

Domestic affiliated companies		Overseas affiliated companies	
● ADEKA CHEMICAL SUPPLY CORP.	● ADEKA LOGISTICS CORP.	● AMFINE CHEMICAL CORP.	● ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD.
● ADEKA CLEAN AID CORP.	● YONGO CO., LTD.	● ADEKA (SINGAPORE) PTE. LTD.	● ADEKA FINE CHEMICAL (THAILAND) CO., LTD.
● ADEKA FINE FOODS CORP.	● ADEKA LIFE-CREATE CORP.	● ADEKA KOREA CORP.	● ADEKA FOODS (CHANGSHU) CO., LTD.
● ADEKA ENGINEERING & CONSTRUCTION CORP.	● UEHARA FOODS INDUSTRY CO., LTD.	● ADEKA FINE CHEMICAL TAIWAN CORP.	● ADEKA AL GHURAIR ADDITIVES LLC
● OXIRANE CHEMICAL CORP.	● TOKYO ENVIRONMENTAL MEASUREMENT CENTER CO., LTD.	● ADEKA PALMAROLE SAS	● ADEKA FOODS (ASIA) SDN. BHD.
● ADEKA FOODS SALES CORP.		● ADEKA (SHANGHAI) CO., LTD.	

In this Environmental Data, “ADEKA Group” and “the Group” refer to the entire ADEKA Group, while “ADEKA” and “the Company” refer to ADEKA Corporation.

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Basic Environmental Policy

1. Strive to conserve resources and energy, recycle resources, and reduce the generation of waste, in order to prevent environmental pollution.
2. Comply with domestic and foreign laws and regulations related to the environment, and at the same time strive to strengthen voluntary management and achieve further environmental conservation.
3. Be aware that corporate activities are dependent upon the blessings produced through biodiversity, and seek to protect biodiversity.
4. Take a proactive stance in procuring raw materials that impose a low burden on the environment, and contribute to the realization of a recycling-oriented society.
5. Disclose the results of environmental conservation activities to society.
6. Communicate with stakeholders and provide support to society and local communities in environmental conservation activities.

Environmental Initiatives System

Under the policy set by Environmental Protection Division headed by an operating officer, each business office formulates an execution plan and makes efforts for continuous improvement of environmental management activities by implementing PDCA cycle.





Environmental Action Goals, Plans

ADEKA has established quantitative targets for important items related to environmental conservation, and we conduct our business activities toward achieving these targets.

Scope of quantitative assessment: ADEKA Corporation

Category	Scope	Medium- and Long-term Goals	FY2015 Goals	Performance in FY2015	Future Tasks
Promote energy conservation	Production division	Over 1% improvement in annual rate of energy consumption * <sup>1</sup>	Reduce energy intensity by 1% or more year on year	<ul style="list-style-type: none"><li>Achieved energy intensity of 0.1846 kiloliters per tonne (0.6% reduction from previous fiscal year)</li></ul>	<ul style="list-style-type: none"><li>Strengthen management toward reduction of fixed energy with a focus on electricity and steam</li><li>Energy conservation through improvements in manufacturing processes</li></ul>
Reduction of Greenhouse Gas Emissions	Production division	Over 1% reduction in annual rate of unit CO <sub>2</sub> emissions	Reduce CO <sub>2</sub> emissions by 1% or more year on year	<ul style="list-style-type: none"><li>Generated 141,290 tonnes of CO<sub>2</sub> emissions (0.8% reduction from previous fiscal year)</li></ul>	
Reduce industrial waste generated	All ADEKA Offices	Promotion of appropriate processing of industrial waste Sustained achievement of zero emissions* <sup>2</sup>	Reduce industrial waste output by 1% or more year on year	<ul style="list-style-type: none"><li>Generated 40,508 tonnes of industrial waste (2.6% reduction from previous fiscal year)</li></ul>	<ul style="list-style-type: none"><li>Curb generation of waste through improvement in production technology</li><li>Curb the generation of long-term stock-in-hand and surplus products through production planning and sales planning</li><li>Explore channels to convert things into valuable resources, and recycle waste</li><li>Bolstering of measures to prevent illegal resales (e.g., expanded usage of electronic manifests)</li><li>On-site inspections of industrial waste processing companies</li></ul>
			Sustained achievement of zero emissions	<ul style="list-style-type: none"><li>Landfill disposal volume: 18.9 t</li><li>Achievement of zero emissions (0.047%) for four years running</li></ul>	
Reduce Environmental Pollutant Emissions	Production division and R&D division	Reduce emission of PRTR* <sup>3</sup> substances by 20% compared by FY2020 with FY2010 level	Strive to reduce emissions of PRTR substances, while managing them	<ul style="list-style-type: none"><li>Air emissions: 5.0 t (152.6% compared with FY2010 levels. 26.4% increase from previous fiscal year)</li></ul>	<ul style="list-style-type: none"><li>Maintenance and continuation of management strengthening towards the reduction of PRTR substances</li></ul>
				<ul style="list-style-type: none"><li>Emissions into public water: 3.0 t (12.3% compared with FY2010 levels. 1.1% increase from previous fiscal year)</li></ul>	
				<ul style="list-style-type: none"><li>PRTR transferred amount: 152.3 t (61.6% compared with FY2010 levels. 5.1% increase from previous fiscal year)</li></ul>	
Promote green purchasing	All ADEKA Offices	Boosting the ratio of green procurement of designated stationary to over 80% by FY2020		<ul style="list-style-type: none"><li>Stationery items: 78.2% (6,370 items procured out of 8,141 items)</li></ul>	<ul style="list-style-type: none"><li>Promotion of continued green procurement</li></ul>

\*1 An objective indicator for production efficiency. Refers to the energy needed to produce a unit quantity of products (crude oil equivalent).

\*2 Defined as landfill waste that amounts to less than 0.1% of the volume of industrial waste output (as defined by ADEKA Corporation).

\*3 A system in which the Japanese government, together with business operators and other bodies, obtains, computes, and publishes data on the sources and amounts of toxic chemical substances released in the environment, and amounts externally transferred in waste.



Environmental Accounting

ADEKA Group calculates and verifies costs required for environmental conservation and its effect in order to facilitate environmental management.

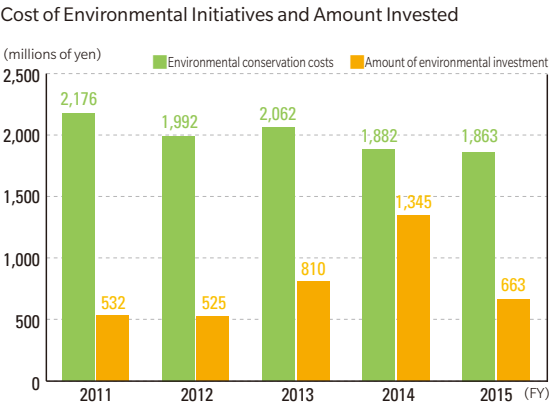
As tools to quantitatively assess the effects of environmental conservation activities, we have adopted “Environmental Accounting Guidelines 2005” and “Environmental Conservation Cost Category Handbook 2003” published by the Ministry of Environment, as well as “Environmental Accounting Guidelines for Chemical Companies” published by the Japan Chemical Industry Association. With these tools, we disclose environmental accounting information with a focus on reliability, comparability, and verifiability.

Survey target: ADEKA Corporation (production and R&D divisions), ADEKA Fine Foods Corp. , Oxirane Chemical Corp., UEHARA FOODS INDUSTRY CO., LTD.

Environmental Conservation Costs

(millions of yen)

Category		Description of Main Initiatives	Cost of Environmental Initiatives	Amount of Investment
1. Business area cost		All environmental conservation activities aimed at limiting environmental impact	1,614	653
	(1) Pollution prevention costs	Prevention of air, water, and soil pollution, and of noise, stench, and land subsidence	1,017	366
	(2) Global environmental conservation costs	Preventing global warming (conserving energy), preventing damage to the ozone layer	287	246
	(3) Resource recycling costs	Reducing and recycling resources, and minimizing the generation of waste material	309	41
2. Upstream/downstream cost		Green procurement, reducing the environmental burden imposed by containers and packaging, collecting and re-commercializing products	13	0
3. Administration cost		Environmental ISO, disclosure of environmental information, environmental impact monitoring, greening	84	0
4. R&D cost		R&D expenses for environmental conservation	148	10
5. Social activity cost		Greening and beautification of areas outside the offices and plants, donating and supporting environmental conservation organizations	3	0
6. Environmental remediation cost		Purification efforts to improve water quality and remove soil pollution, restoration of nature	2	0
		Total	1,863	663



Economic Effects with Environmental Conservation Measures

(millions of yen)

Details of effects	
Income earned by recycling, profits from the sale of valuable resources, etc.	162
Reduction in costs through introducing resources from the environment into business activities	202
Reduction in the burden imposed by business activities on the environment and costs related to the generation of waste material	54
Reduction in costs related to dealing with environmental damage	0
Reduction in distribution cost and other costs	11
Total	429

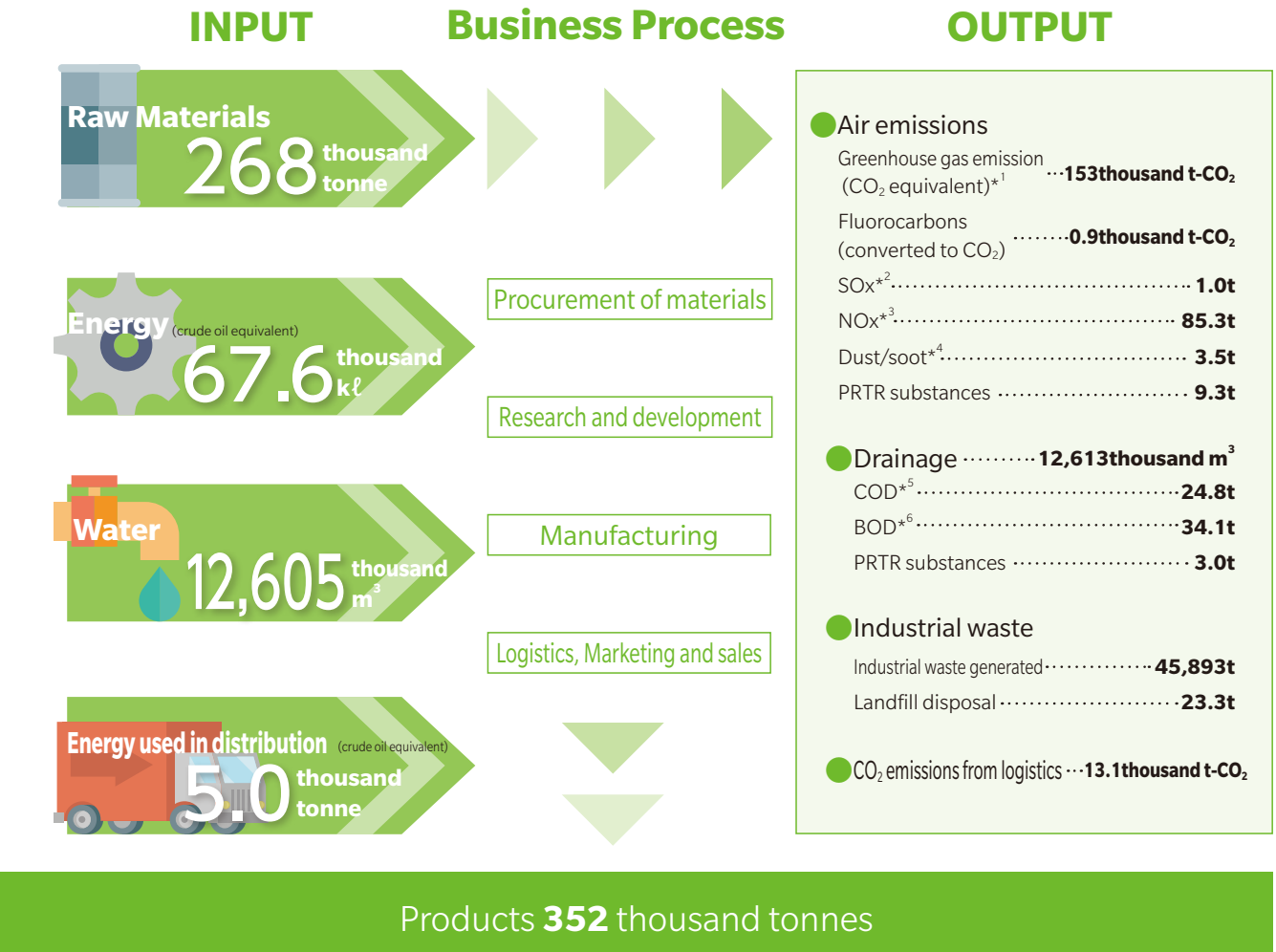
Environmental conservation effect

Environmental Performance Indicators	
Quantity of specific managed substances input	16,694t
Circulation and usage of used products, containers, and packaging	589t
Quantity of containers and packaging used	5,694t
Quantity of products transported	133,114thousandt•km

Material Flow

The ADEKA Group has put in place initiatives to reduce and recycle the volume of waste material generated through our production processes.

Survey target: ADEKA Corporation and the main 11 domestic affiliated companies



\*1 Total emissions arising from energy sources, non-energy sources, and processes

\*2 Sulfur oxides that are generated during the use of fuels that contain sulfur

\*3 Nitrogen oxide that is generated during combustion in Plant boilers and incinerators

\*4 Fine particles that are generated during the combustion of fuels and other materials

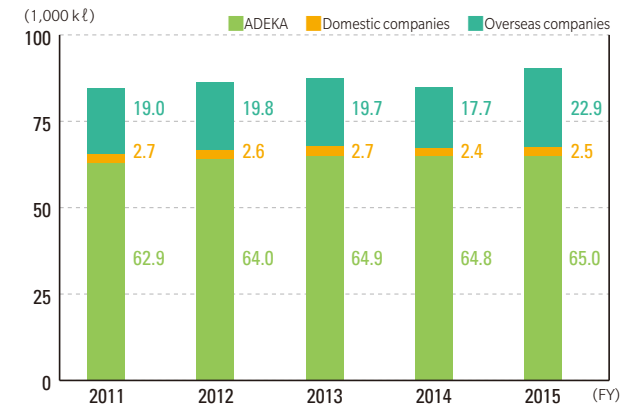
\*5 Amount of oxygen that is consumed during the oxidation of organic substances

\*6 Amount of oxygen required during the mineralization and gasification of contaminants in river water and industrial wastewater by microorganisms

## Prevention of Global Warming

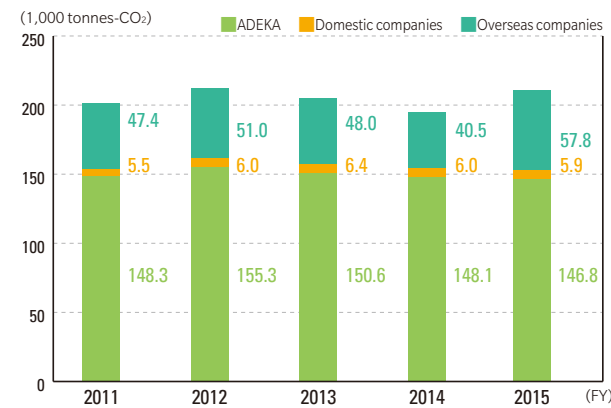
Aiming for the realization of a sustainable society through its business activities, the ADEKA Group is striving to promote energy conservation by improving processes, implementing systematic reductions in bound energy consumed by the sustained heating of steam pipes and tanks, and cutting the consumption of all kinds of energy used during production.

Energy Consumption by Crude Oil Equivalent\*

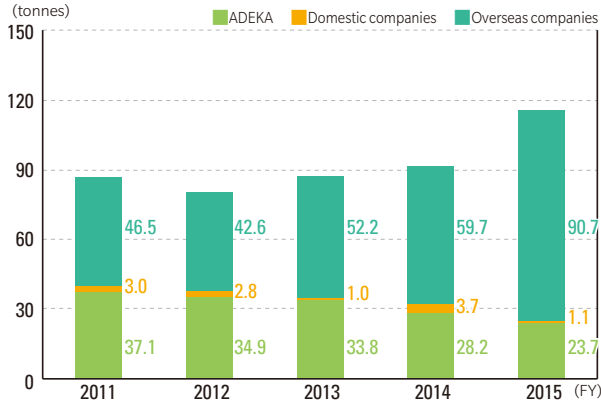


\*The values differ from those reported last year as the result of revising the scope of the aggregate.

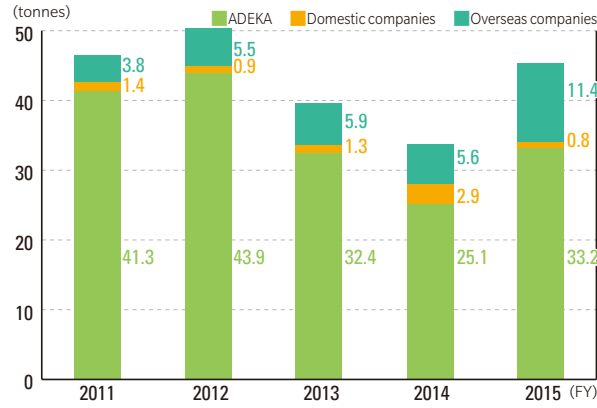
CO<sub>2</sub> Emissions\*



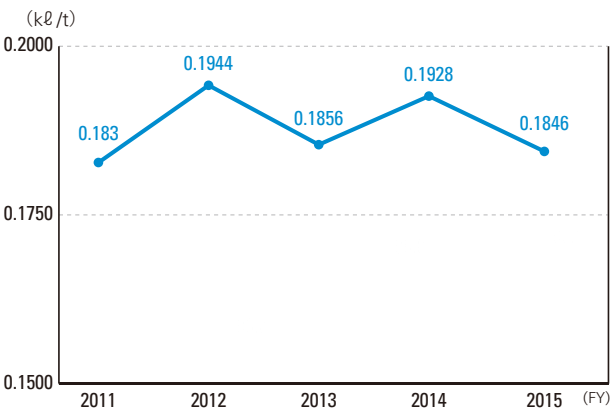
Chemical Oxygen Demand emissions



Biological Oxygen Demand emissions

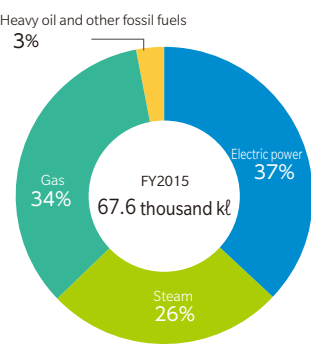


Energy Intensity Index from Manufacturing(ADEKA Corporation :production divisions)



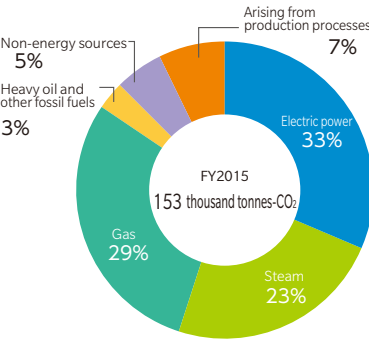
Breakdown of energy consumption

\*Excluding overseas group companies



Breakdown of greenhouse gas emissions

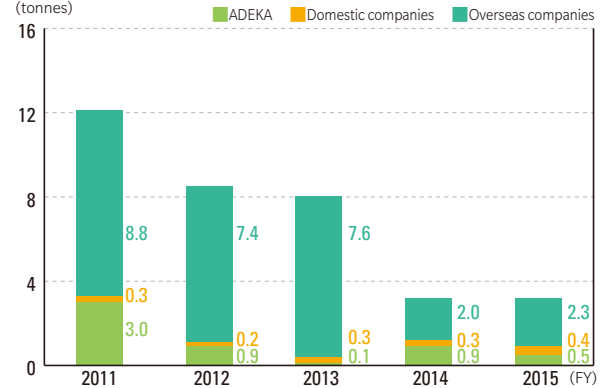
\*Excluding overseas group companies



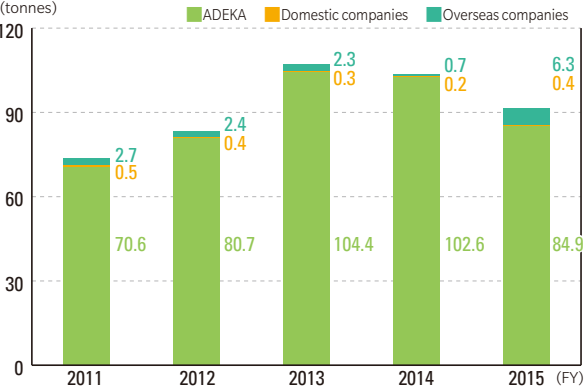
## Air Pollution Prevention

As part of environmental conservation measures put in place by our production and R&D divisions, the ADEKA Group strives constantly to prevent air pollution, and is committed to efforts to minimize the emission of SOx, NOx, dust and soot into the air.

SOx emissions



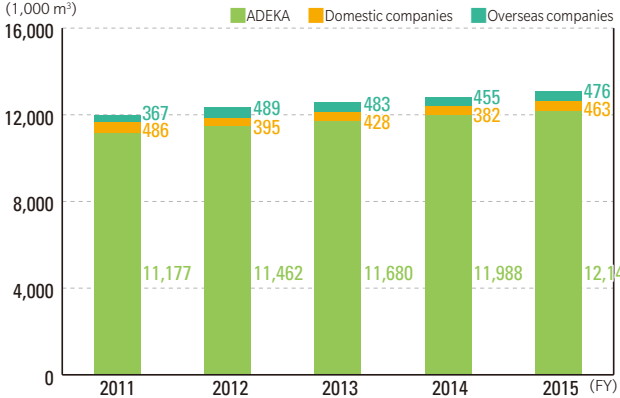
NOx emissions



## Prevention of Water Pollution

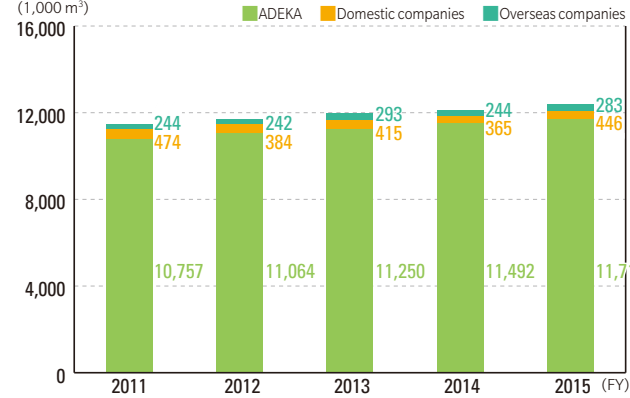
The ADEKA Group collects, recycles, and reuses wastewater from production processes, with the aims of preventing water pollution and the conservation of water resources, which are vital for a recycling-based society. The Group is also committed to reducing the environmental effects of wastewater, in accordance with various laws and regulations.

Usage of Water\*

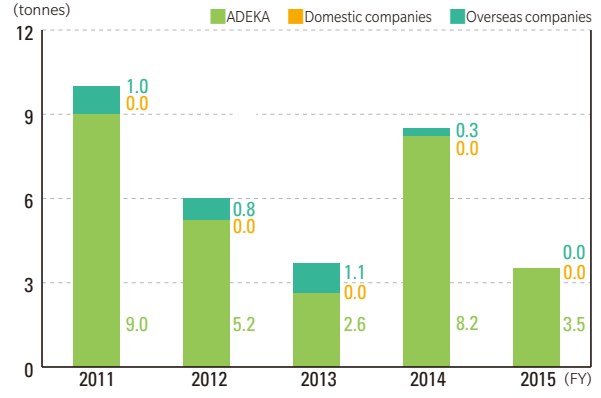


\*The values differ from those reported last year as the result of revising the scope of the aggregate.

Waste water Discharge



Soot/Dust emissions





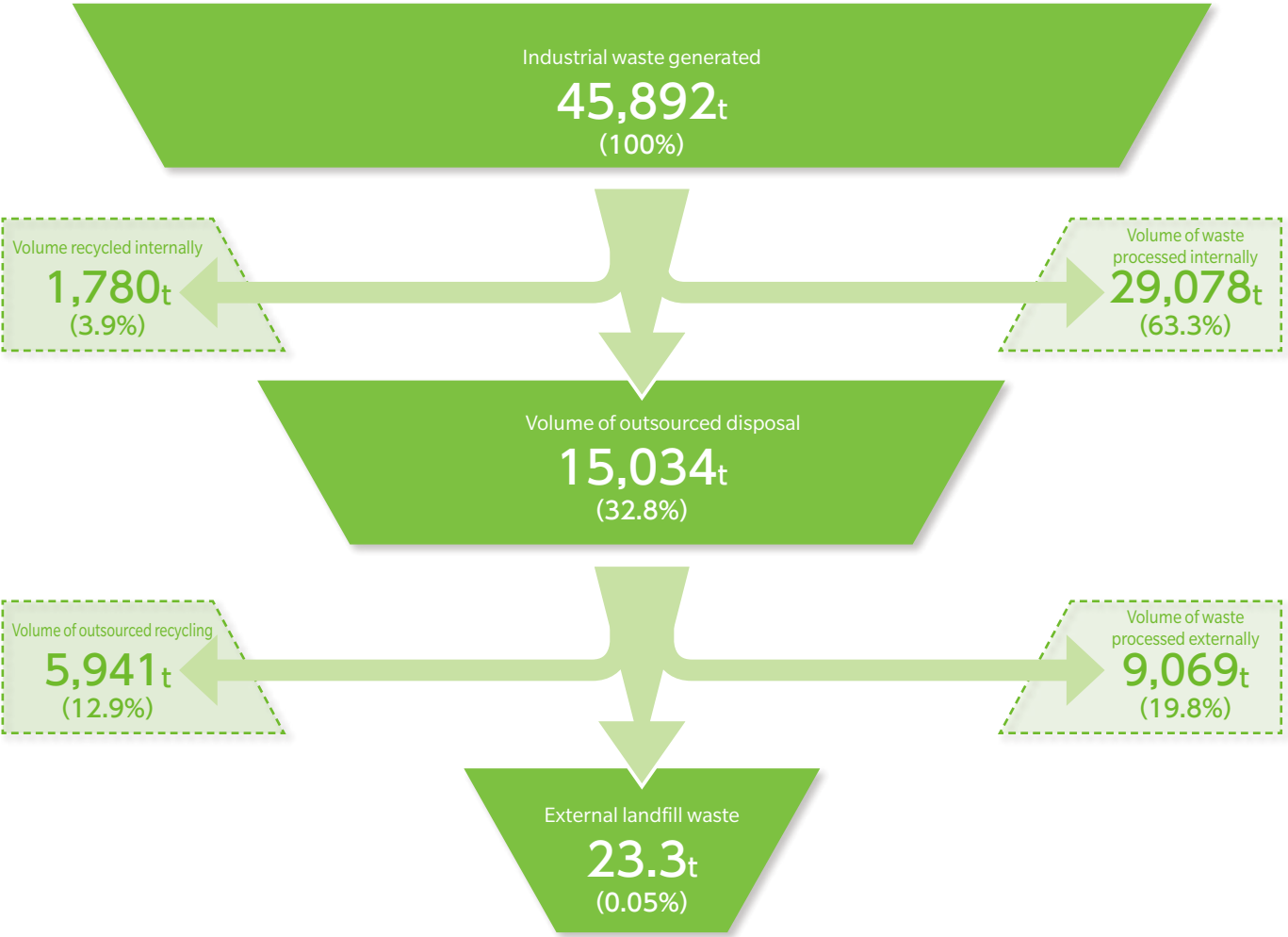
Reducing Industrial Waste

The ADEKA Group implements the 3R approach of “reduce, reuse, recycle” to reduce the amount of industrial waste discharged, and has achieved zero emissions since 2007.

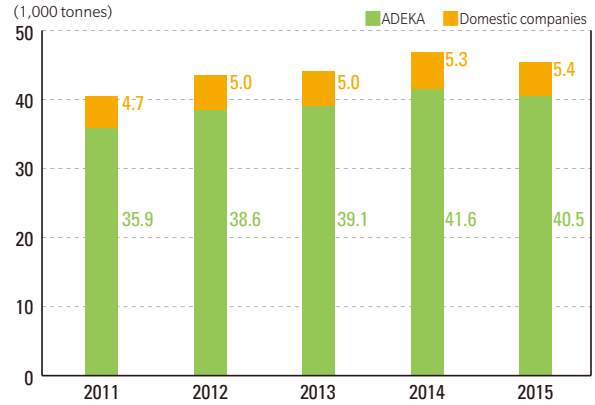
Production volume in FY2015 increased 0.9% year-on-year, but the volume of industrial waste generated over the same period decreased 2.2%, testifying to the achievement of resource-efficient production activities. Moreover, great progress was made in the delayed treatment of PCB contaminated waste, and a plan has finally been laid down to complete its disposal. Moving forward, the Group will continue to make effective use of resources, and promote the proper treatment of industrial waste.

Survey target: ADEKA Corporation and the main 11 domestic affiliated companies

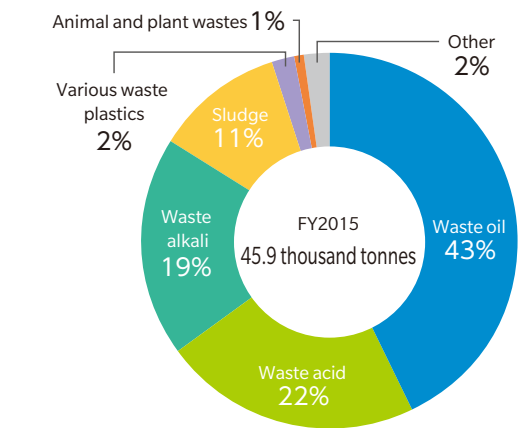
The entire flow of recycling and disposal of waste (Within the brackets are the relative proportions of industrial waste)



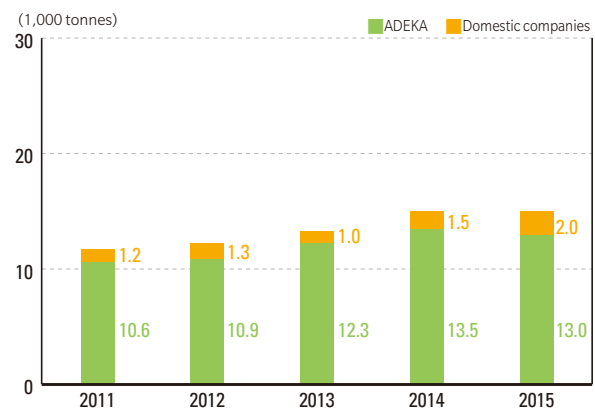
Industrial waste generated



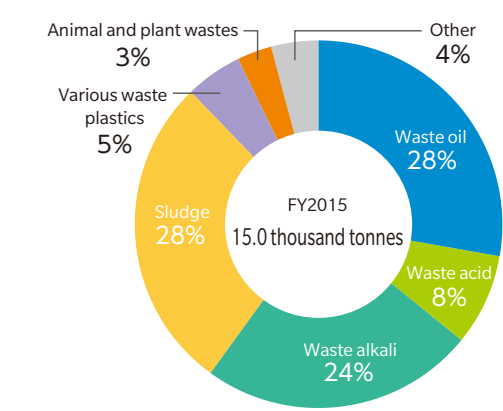
Breakdown of industrial waste



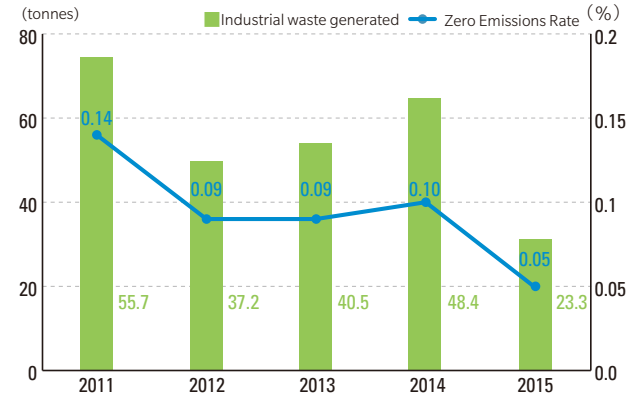
Outsourced Disposal of Industrial Waste



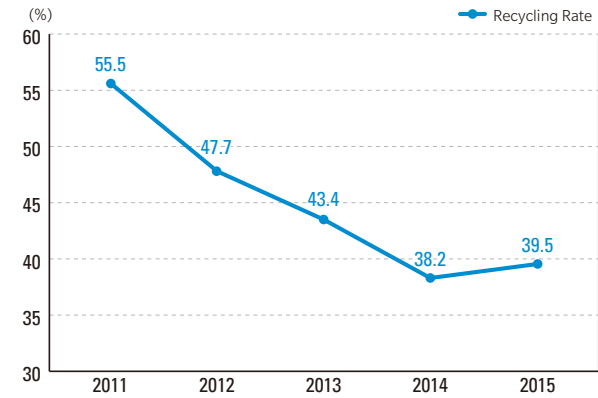
Breakdown of the total volume of waste treated by external contractors



Zero Emissions Rate for Landfill Disposal of Industrial Waste



Recycling Rate



Reducing Emissions of Chemical Substances

ADEKA Group began conducting studies on PRTR in fiscal 1997. We strive to ensure appropriate management by carrying out quantitative assessments of the quantity of target chemical substances used as well as the quantity generated through our production processes.

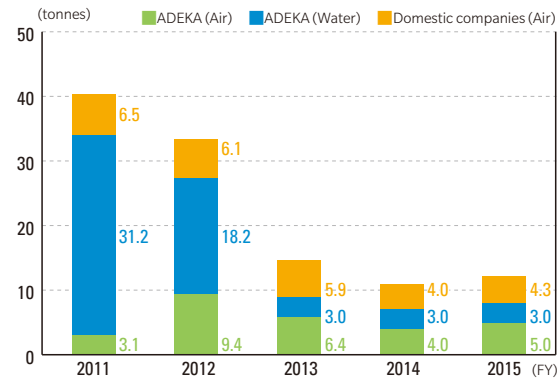
With the revision of the law for PRTR, the number of target substances in the fiscal 2011 report was 462. For fiscal 2014, we will report on 71 of these 462 substances.

Survey target: ADEKA Corporation (production and research divisions), Oxirane Chemical Corp.

Substance	Discharge				Transfer	
	Air	Public Waters	Soil	Landfill Waste	Sewage	External Transfer
Ethylbenzene	0.0	0.0	0.0	0.0	0.0	14.0
Epichlorohydrin	0.1	0.0	0.0	0.0	0.0	0.0
Ferric chloride	0.0	0.0	0.0	0.0	0.0	2.4
Xylene	0.0	0.0	0.0	0.0	0.0	11.0
Chlorobenzene	0.3	0.0	0.0	0.0	0.0	14.0
Chloromethane	0.1	0.0	0.0	0.0	0.0	0.0
1,2-Dichloroethane	1.6	0.0	0.0	0.0	0.0	68.0
Dichloromethane	0.2	0.0	0.0	0.0	0.0	8.9
dibutylhydroxytoluene	0.0	0.0	0.0	0.0	0.0	0.7
N,N-dimethylformamide	0.0	0.0	0.0	0.0	0.0	0.2
Decyl alcohol	0.1	0.0	0.0	0.0	0.0	0.0
Triethylamine	0.0	0.2	0.0	0.0	0.0	8.9
Toluene	1.9	0.0	0.0	0.0	0.0	15.3
Naphthalene	0.0	0.0	0.0	0.0	0.0	0.1
Carbon disulfide	1.5	0.0	0.0	0.0	0.0	0.0
Pyridine	0.0	0.0	0.0	0.0	0.0	1.6
N-hexane	3.0	0.0	0.0	0.0	0.0	12.0
Water-soluble salts of peroxodisulfuric acid	0.0	2.8	0.0	0.0	0.0	0.0
Molybdenum and its compounds	0.0	0.0	0.0	0.0	0.0	0.4
TRIS(2-ETHYLHEXYL)	0.1	0.0	0.0	0.0	0.0	4.4
Sub-total (t)	9.1	3.0	0.0	0.0	0.0	162.1
Other substances (51 types) (t)	0.2	0.0	0.0	0.0	0.03	0.3
Total (t)	9.3	3.0	0.0	0.0	0.03	162.3
Dioxins*	7.1	9.5 × 10 <sup>-4</sup>	0.0	0.0	0.0	0.1

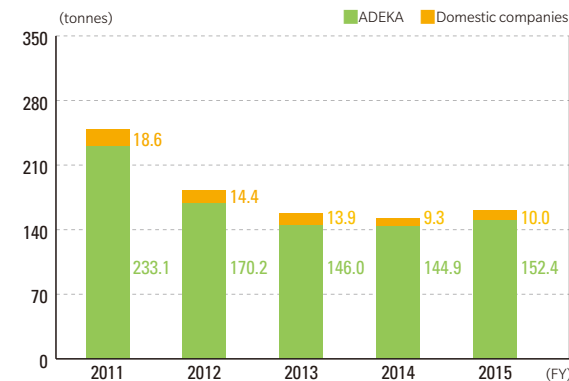
\*Dioxins: Unit: mg-TEQ

Discharge of PRTR Substances



\*There are no emissions into the waters of domestic Group companies.

Transfer of PRTR Substances



Acquisition of Management System Certification

ISO 14001 (Environmental Management Systems)

Mie Plant (Dec. 1996)
Kashima Plant, Kashima Plant–West (Mar. 1998)
Fuji Plant (Apr. 2000)
Chiba Plant (May 2000)
Soma Plant (Aug. 2000)
Akashi Plant (Mar. 2001)
OXIRANE CHEMICAL CORP. (Mar. 2001)
TOKYO ENVIRONMENTAL MEASUREMENT CENTER CO., LTD. (Feb. 2003)
ADEKA KOREA CORP. (Jan. 2006)
ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD. (Jul. 2006)
ADEKA FINE CHEMICAL TAIWAN CORP. (Feb. 2007)
AMFINE CHEMCAL CORP. (Sep. 2007)
ADEKA PALMAROLE SAS (Aug. 2008)
ADEKA FINE CHEMICAL (SHANGHAI) CO., LTD. (Jan. 2009)
ADEKA FOODS (CHANGSHU) CO., LTD. (Aug. 2009)
ADEKA FINE CHEMICAL (THAILAND) CO.,LTD. (Jan. 2010)

OHSAS 18001 (Occupational Health and Safety Management Systems)

Mie Plant (Sep. 2000)
Kashima Plant, Kashima Plant–West (Nov. 2002)
Soma Plant (Dec. 2002)
Akashi Plant (Mar. 2003)
Chiba Plant (Oct. 2003)
Fuji Plant (Dec. 2003)
ADEKA FINE CHEMICAL TAIWAN CORP. (Jun. 2007)
ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD. (Jul. 2007)
ADEKA FOODS (CHANGSHU) CO., LTD. (Aug. 2009)
ADEKA KOREA CORP. (Apr. 2010)
ADEKA PALMAROLE SAS (Dec. 2013)

ISO 22000 (Certification for Food Safety)

ADEKA FOODS (CHANGSHU) CO., LTD. (Apr. 2007)
ADEKA (SINGAPORE) PTE.LTD. (May 2009)

FSSC 22000 (Certification for Food Safety)

Kashima Plant–West (Nov. 2011)
Kashima Plant (Nov. 2014)
Akashi Plant (Mar. 2015)
ADEKA FINE FOODS CORP. (Apr. 2016)
ADEKA (SINGAPORE) PTE.LTD. (May 2016)

HACCP (Hazard Analysis and Critical Control Point)

Kashima Plant (Mar. 2002)
ADEKA (SINGAPORE) PTE.LTD. (Aug. 2004)
ADEKA FOODS (ASIA)SDN.BHD. (Apr. 2015)

ISO 9001 (Quality Management Systems)

Mie Plant (Jun. 1993)
Kashima Plant, Kashima Plant–West (Apr. 1996)
Fuji Plant (Jan. 1997)
Chiba Plant (Jul. 1997)
ADEKA PALMAROLE SAS (Jul. 1997)
OXIRANE CHEMICAL CORP. (Oct. 1997)
Soma Plant (Aug. 1998)
ADEKA CLEAN AID CORP. (Oct. 1999)
AMFINE CHEMCAL CORP. (Jan. 2000)
KUKDO CHEMICAL (KUNSHAN) CO., LTD. (Mar. 2001)
ADEKA ENGINEERING & CONSTRUCTION CORP. (Mar. 2002)
ADEKA KOREA CORP.(Oct. 2004)
ADEKA FINE CHEMICAL (SHANGHAI) CO., LTD. (May 2005)
TOKYO ENVIRONMENTAL MEASUREMENT CENTER CO., LTD. (Aug. 2005)
ADEKA FINE CHEMICAL (CHANGSHU) CO., LTD. (Oct. 2005)
UEHARA FOODS INDUSTRY CO., LTD. (Nov. 2005)
ADEKA (SINGAPORE) PTE. LTD. (Apr. 2006)
FELDA IFFCO OIL PRODUCTS SDN.BHD. (Jun. 2006)
ADEKA FINE CHEMICAL TAIWAN CORP. (Jul. 2006)
ADEKA FINE CHEMICAL (THAILAND) CO.,LTD. (Dec. 2006)
ADEKA AL GHURAIR ADDITIVES LLC (Aug. 2008)
AM STABILIZERS CORP. (Mar. 2013)

IMS (Integrated Management System)

Soma Plant (Dec. 2004)
Kashima Plant, Kashima Plant–West (Dec. 2008)
Fuji Plant (Dec. 2009)
Chiba Plant (Aug. 2011)

TPM (Received Total Productive Maintenance)

Chiba Plant: 1994 Excellence Award
Mie Plant: 1995 Excellence Award
OXIRANE CHEMICAL CORP.: 1995 Excellence Award
Akashi Plant: 2004 Excellence Award
Kashima Plant, Kashima Plant–West: 2007 Excellence Award —Special Award for TPM Achievement
Chiba Plant: Award for TPM Excellence, Category A (2010)

ISO 14064-1

(Standard concerning calculation, reporting, and verification of emissions and reduced amount of greenhouse gases)

ADEKA FINE CHEMICAL TAIWAN CORP. (Mar. 2013)
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ISO 22301 (BCM: Business continuity management)

Head Office relevant departments and Soma Plant (Nov. 2013)
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