CSR REPORT 2013

CORPORATE SOCIAL RESPONSIBILITY

Environmental Data

ADEKA

Contents

Environmental Data

Period Covered by This Report
2012 Fiscal Year ended March 31, 2013
*From January 1, 2012 to December 31, 2013 for overseas business locations

Scope of This Report

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

Domestic affiliated companies		Overseas affiliated companies	
●ADEKA Chemical Supply Corp.	●ADEKA Clean Aid Corp.	●Amfine Chemical Corp.	●ADEKA Foods (Changshu) Co., Ltd.
●ADEKA Fine Foods Corp.	●ADEKA Engineering & Construction Corp.	●ADEKA (Singapore) Pte.Ltd.	●ADEKA Fine Chemical Taiwan Corp.
●Oxirane Chemical Corp.	●ADEKA Foods Sales Corp.	●ADEKA Korea Corp.	●ADEKA Fine Chemical (Changshu) Co., Ltd.
●ADEKA Logistics Corp.	●ADEKA Life-Create Corp.	●ADEKA Fine Chemical (Thailand) Co.,Ltd.	●ADEKA Palmarole SAS
●Tokyo Environmental Measurement Center Co., Ltd.	●ADEKA Foods Industry Co., Ltd.	●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. The report on environmental action goals covers ADEKA Corporation.

Contact information

ADEKA Corporation Legal Affairs & Publicity Dept
〒116-8554 7-2-35 Higashi-ogu, Arakawa-ku, Tokyo
TEL：+81-3-4455-2803 FAX：+81-3-3809-8210 Mail Address：somu@adeka.co.jp

Basic Environmental Policy

1. Corporate-wide global environmental conservation and pollution prevention efforts

Each one of us must be highly conscious of environmental conservation, striving for harmony and integration with the environment in all aspects of our business activities. In order to carry out fair and sustainable activities, there must be coope-ration, not only between departments within each company, but also in a broader sense with other companies in the group as ADEKA adopts a comprehensive and organic approach to its efforts.

2. Corporate responsibility

ADEKA endeavors to reduce the environment impact of its business activities throughout the life cycle—from research, development and procurement through to manufacturing, sales,logistics and disposal. These initiatives focus on conserving energy and resources, as well as reducing, reusing and recycling industrial waste, in order to reduce the impact on the environment. In addition, ADEKA develops and supplies eco-friendly products and environmental technologies, and endeavors to use eco-friendly products in contributing to a sustainable society.

3. Contributing to society

We are keenly aware of the fact that a corporation is a member of society and we steadfastly comply and cooperate with environmental regulations and government policies, We also disclose environmental information and lend support and cooperation to environmental conservation activities, both in society at large and in the local community.

Environmental Initiatives System

Based on policies drawn up by the Environmental Protection Division headed by an operating officer, each business office formulates an execution plan and puts effort into the continuous improvement of environmental management activities by implementing the PDCA cycle.

The suspension of the operation of production facilities in fiscal 2011 as a result of the Great East Japan Earthquake had an impact on the environmental data. However, since our return to normal production levels in fiscal 2012, the amount of CO_2 emissions and industrial waste generated have increased.

Environmental Action Goals and Future Tasks

Category	Medium- and Long-term Goals	FY2012 Goals	Performance in FY2012	Future Tasks
Promotion of energy conservation	Reduce energy intensity*1 by 20% by FY2010, compared with FY1990 levels	Reduce energy intensity by 1% per year	• **Achieved energy intensity of 0.1856 kiloliters per tonne** (Reduced energy intensity by 0.9% compared with FY1990 levels. 4.5% increase from previous year)	• Further reduce consumption of electric power and other fixed energy • Change fuels, for example, from heavy oil to city gas Discover new highly efficient equipment/energy-saving equipment, etc.
Reduction of Greenhouse Gas Emissions	Reduce CO_2 emissions by 25% by FY2010, compared with FY1990 levels	Reduce CO_2 emissions by 1% per year	• **Generated 150,607 tonnes of CO_2 emissions** (Reduced CO_2 emissions by 18.1% compared with FY1990 levels. 4.2% reduction from previous year)	
Reduction of Industrial Waste	• Completely eliminate landfill waste by FY2020 • Increase recycling rate*2 for externally processed waste to 80% by FY2020	• Reduce waste generation by at least 1% per year • Continue to achieve zero emissions*3 of landfill waste, and make efforts for complete elimination of landfill waste*4	• **Generated 38,626 tonnes of industrial waste** (7.7% reduction from previous year) • **Landfill waste generated: 25.8 tonnes** (44% reduction from previous year) • **Recycling rate: 48%** (5% fall compared to the previous fiscal year)	• Curb generation of waste through improvement in production technology • Curb generation of waste through improvement in well-planned production, and marketing • Reduce incineration disposal • Strive to convert things valuable resources, and recycle waste
Reduction of Environmental Pollutant Emissions	Reduce emission of PRTR*5 substances by 20% compared with FY2010 level by FY2020	Strive to reduce emissions of PRTR substances, while managing them	• **Air emissions: 9.4 tonnes** (A 204% year-on-year increase) • **Emissions into public water: 18.2 tonnes** (A 42% year-on-year decrease) • **PRTR transferred amount: 170 tonnes** (A 27% year-on-year decrease)	Enhance management for reducing emissions of PRTR substances
Promote green purchasing	Achieve green purchasing rate of 80% or more for designated stationery items and non-stationery items by fiscal 2020.		• **Stationery items: 69%**(1,526 items out of 1,054 items) (6% fall from previous fiscal year) • **Non-stationery items: 54%** (739 items out of 400 items) (3% increase from previous fiscal year)	Promote green purchasing while striking a balance with cost
Management systems	Develop IMS*6 and BCMS	• Understand customer's needs and continuously improve management systems • Consider the horizontal development of BCMS (Business Continuity Management System	• **Promote the continuous improvement of each management system** • **As BCMS will move from BS25999-2:2007 to ISO22301:2012, review management systems**	• Understand customer's needs and continuously improve management systems • Acquire ISO22301:2012 for the Head Office and Soma Plant • Continuously improve on BCM/BCP in other plants

*1: An objective indicator for production efficiency, and refers to the energy needed to produce a unit quantity of products (crude oil equivalent)

*2: Defined as the percentage of industrial waste of all industrial waste that is treated by external contractors, which is effectively utilized through means such as recycling and reuse, resource recovery, and heat recovery

*3: "Zero emissions" is defined as landfill waste that amounts to less than 0.5% of the volume of industrial waste output

*4: "Complete elimination" is defined as landfill waste that amounts to less than 0.1% of the volume of industrial waste output

*5: A system in which the Japanese government, together with business operators and other bodies, obtain, compute, and publish data on the sources and amounts of toxic chemical substances released in the environment, and amounts externally transferred in waste

*6: Among all the management systems, the parts that are responsible for establishing, introducing, implementing, monitoring, reviewing, maintaining, and improving business continuity plans

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.

Results of Environmental Accounting Calculations

・Covering the period from April 1, 2012 to March 31, 2013.

・Scope of quantitative assessment: ADEKA Corporation business offices, Oxirane Chemical Corp., ADEKA Fine Foods 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	1,863	525
	(1) Pollution prevention costs	Prevention of air, water, and soil pollution, and of noise, stench, and land subsidence	1,024	306
	(2) Global environmental conservation costs	Minimizing greenhouse gas emissions, conserving energy, and preventing ozone layer depletion	367	145
	(3) Resource recycling costs	Recycling and reuse of resources, and minimizing, treating, and disposing of waste material	472	74
2. Upstream/downstream cost		Collection and recycling costs for containers and packaging, green procurement	41	0
3. Administration cost		Implementation of management systems, monitoring and tracking of environmental effects, and greening	80	0
4. R&D cost		R&D expenses for environmental conservation	5	1
5. Social activity cost		Greening and weed removal outside the business premises, provision of support for all environmental conservation activities in the community, and financial donations	1	0
6. Environmental remediation cost		Nature restoration expenses, payment of damages related to environmental conservation, and provision of allowance for damages related to the environment	3	0
Total			1,992	525

Economic Effects with Environmental Conservation Measures

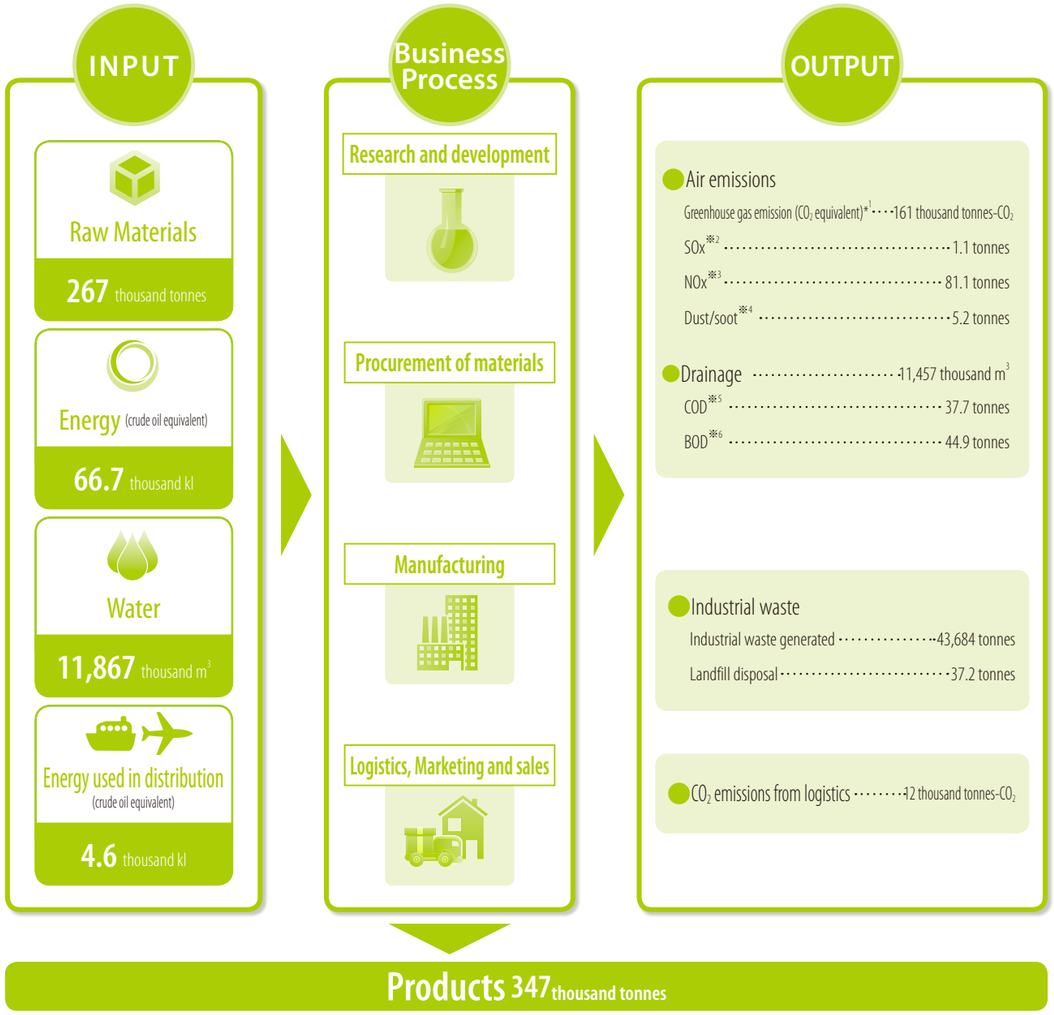
(millions of yen)

Details of effects	2011FY	2012FY
Income earned by recycling	18	100
Reduction in costs through energy saving	105	100
Reduction in waste disposal cost	81	50
Reduction in the amount of materials	189	358
Reduction in distribution cost with more efficient transportation	26	15
Total	419	623

Cost of Environmental Initiatives and Amount Invested

Material Flow

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

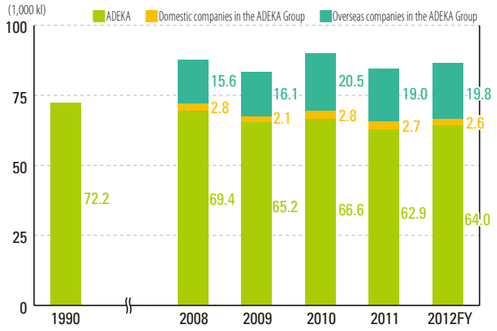


*1 Total emissions arising from energy sources, non-energy sources, and processes *2 Sulfur oxides emitted during the use of sulfur-containing fuels *3 Nitrogen oxide emitted during combustion in boilers and incinerators at plants *4 Particulate matter emitted from combustion of fuels and other matter *5 The amount of oxygen that is consumed during the oxidization of organic compounds *6 The amount of oxygen that is needed by biological organisms to mineralize or gasify organic pollutants in a body of water or plant wastewater

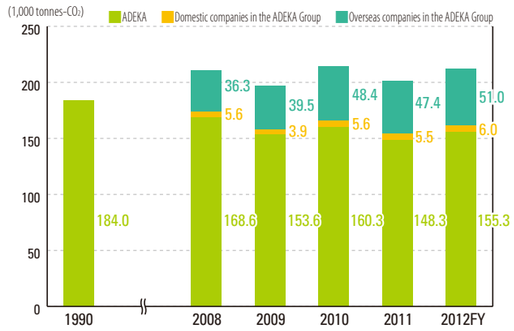
Prevention of Global Warming

Production recovered mainly for the food business, which had suffered from the significant impact of the Great East Japan Earthquake. As a result, production volume for the ADEKA Group for fiscal 2012 rose 6.1% year-on-year to 347thousand tonnes. Consequently, energy consumption and greenhouse gas emissions also increased by 2.2% and 5.5% respectively as compared to the previous fiscal year. Energy intensity improved by 4.5%, but is yet to return to the level prior to the earthquake disaster.

Energy Consumption by Crude Oil Equivalent



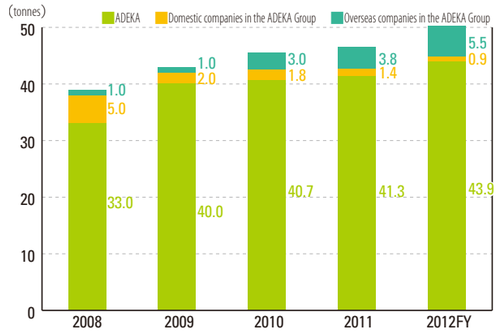
CO_2 Emissions



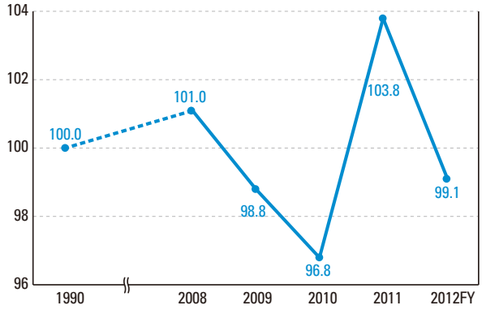
* Revised the figures of overseas group companies from fiscal 2008 to 2011.

Chemical Oxygen Demand emissions

Biological Oxygen Demand emissions

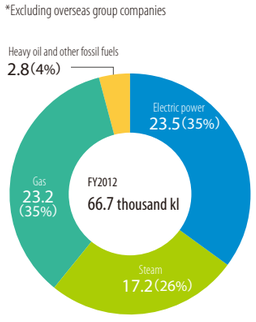


Energy Intensity Index from Manufacturing(ADEKA plant)



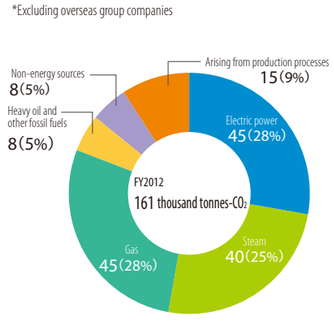
Breakdown of energy consumption

*Excluding overseas group companies



Breakdown of greenhouse gas emissions

*Excluding overseas group companies

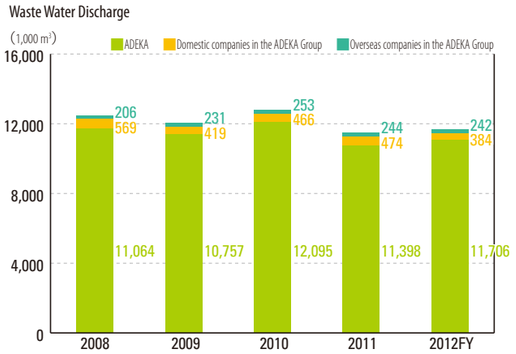


Prevention of Water Pollution

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

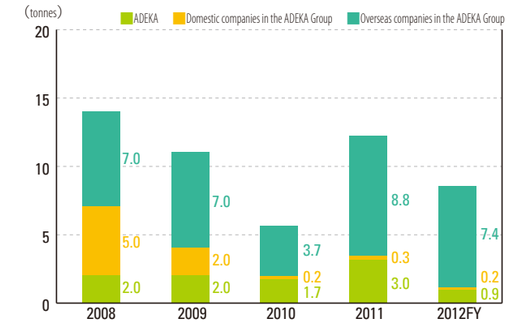
Waste Water Discharge



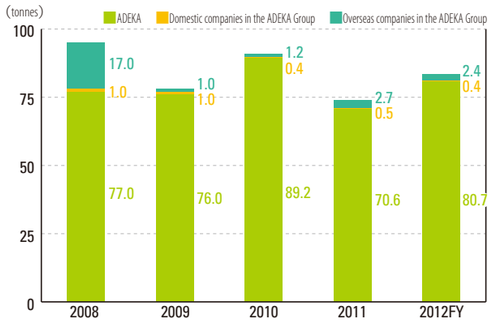
Air Pollution Prevention

In fiscal 2012, we began using city gas instead of heavy oil as boiler fuel in Kashima Plant-West. As a result, we achieved significant reductions in SOx emissions. In addition to SOx, we are also putting effort into the appropriate management and operation of incinerators at the three ADEKA plants that use incinerators (Chiba, Mie, Soma) in order to reduce the amounts of NOx, Soot, and Dust generated.

SOx emissions



NOx emissions



Soot/Dust emissions

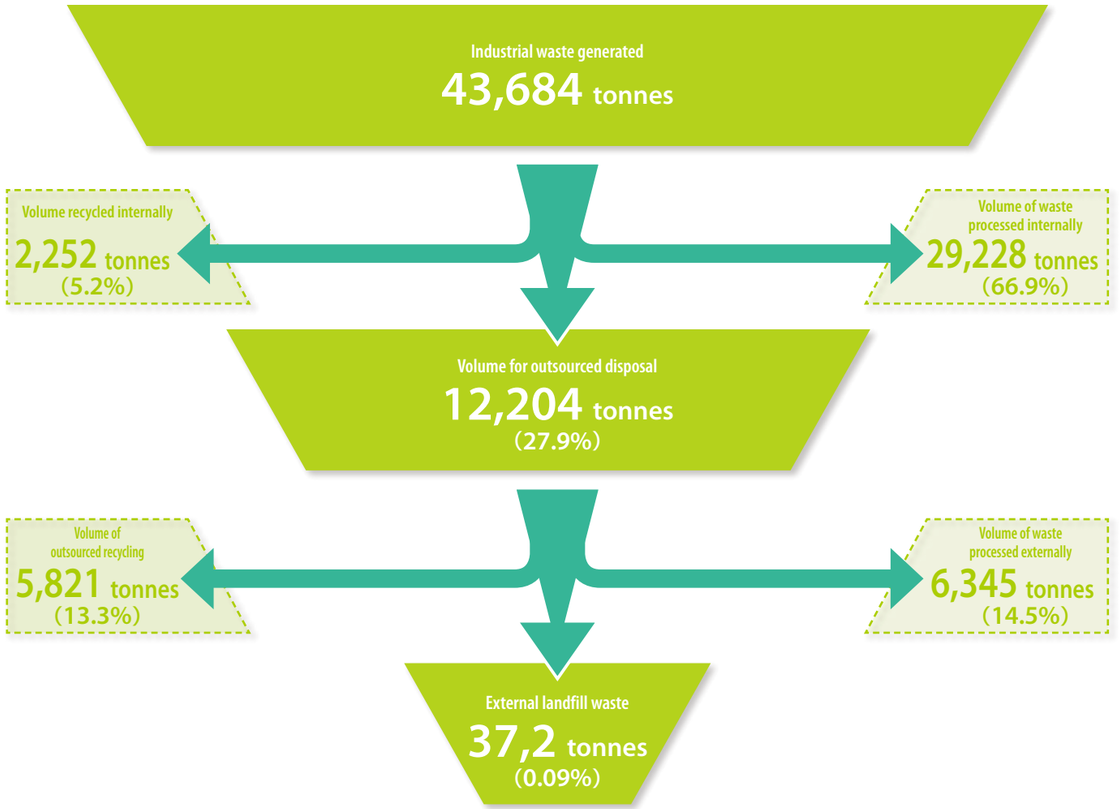
Reducing Industrial Waste

The ADEKA Group has continued to achieve zero emissions since 2007, pursuing 3R initiatives to reduce, reuse, and recycle industrial waste.In fiscal 2012, we achieved complete elimination for the first time in two years.

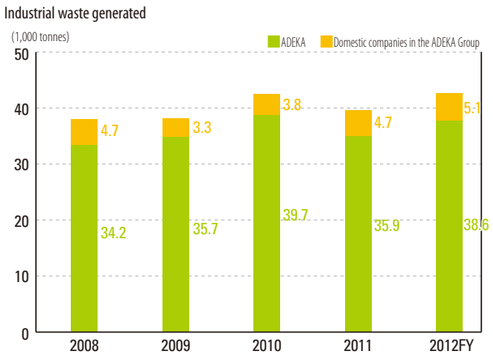
In fiscal 2012, the economy recovered from the recession that had resulted from the Great East Japan Earthquake and we resumed production activities. As a result, the volume of industrial waste generated by the ADEKA Group increased 3,141 tonnes (7.7%) year-on-year to 43,684 tonnes. We promoted the treatment of industrial waste in-house, reducing the amount treated by external contractors by 1.1% year-on-year to 27.9% of all industrial waste generated.

On the other hand, the recycling rate (the percentage of effectively recycled waste in the total volume of waste treated by external contractors) was 47.7%, which was 7.8% lower than in the previous fiscal year.

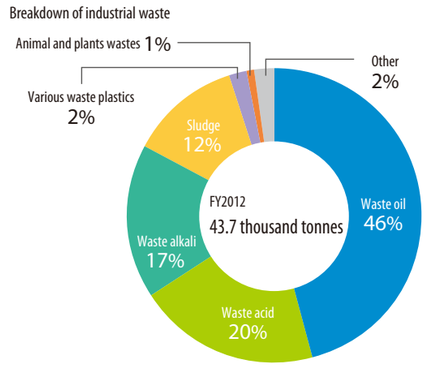
The entire flow of recycling and disposal of waste



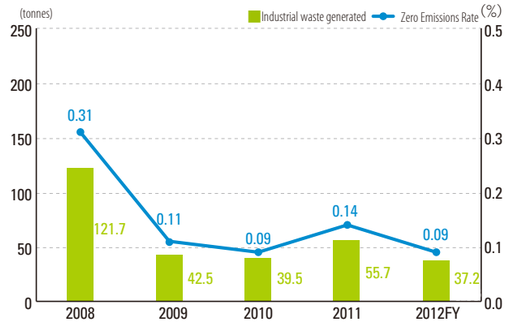
Industrial waste generated



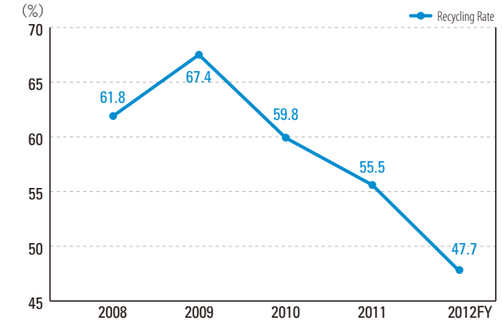
Breakdown of industrial waste



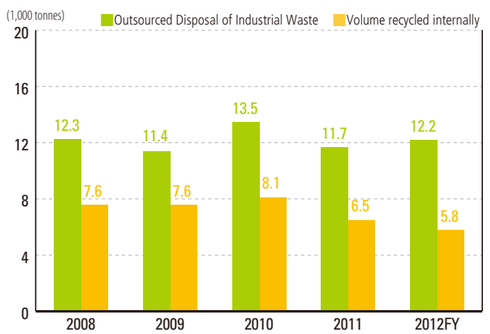
Zero Emissions Rate for Landfill Disposal of Industrial Waste



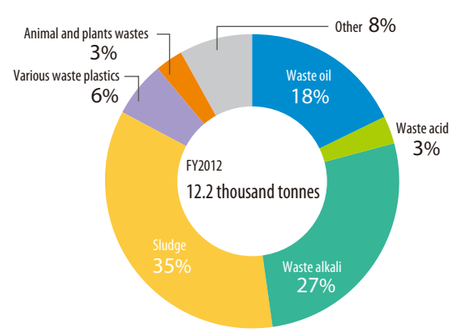
Recycling Rate



Outsourced Disposal of Industrial Waste



Breakdown of the total volume of waste treated by external contractors



Reducing Emissions of Chemical Substances

The ADEKA Group has been tracking PRTR substances since fiscal 1997, and comprehends and properly manages the use and transfer of toxic substances while endeavoring to reduce their use.

With the revision of legislation for PRTR substances, the number of Class 1 Specified Chemical Substances has increased from 354 to 462 since fiscal 2011. Among them, the ADEKA Group made a report of 75 substances in fiscal 2012.

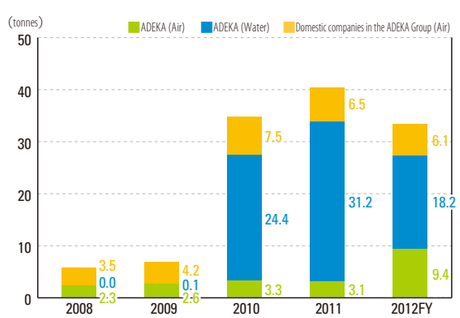
Furthermore, the Group is appropriately handling other chemicals than PRTR substances, and will continue pursuing initiatives to reduce emission of chemicals.

(tonnes)

Substance	Discharge				Transfer	
	Air	Public Waters	Soil	Landfill Waste	Sewage	External Transfer
1-Allyloxy-2,3-epoxypropane	0.0	0.0	0.0	0.0	0.0	0.2
4,4'-Isopropylidenediphenol	0.0	0.0	0.0	0.0	0.0	0.5
Ethylbenzene	0.0	0.0	0.0	0.0	0.0	15.1
Ferric chloride	0.0	0.0	0.0	0.0	0.0	2.2
Xylene	0.0	0.0	0.0	0.0	0.1	12.1
Chlorobenzene	0.2	0.0	0.0	0.0	0.0	9.5
Chloroform	0.0	0.0	0.0	0.0	0.0	1.1
Chloromethane	0.2	0.0	0.0	0.0	0.0	0.0
1,2-Dichloroethane	0.9	0.0	0.0	0.0	0.0	50.0
Dichloromethane	0.2	0.0	0.0	0.0	0.0	11.0
Butylated hydroxytoluene	0.0	0.0	0.0	0.0	0.0	0.8
N,N-dimethylformamide	0.0	0.0	0.0	0.0	0.0	0.7
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	8.5
Toluene	9.6	0.0	0.0	0.0	0.0	42.1
Naphthalene	0.0	0.0	0.0	0.0	0.0	0.2
Carbon disulfide	0.6	0.0	0.0	0.0	0.0	0.0
Pyridine	0.0	0.0	0.0	0.0	0.0	0.5
Bis(2-ethylhexyl)phthalate	0.0	0.0	0.0	0.0	0.0	0.2
N-hexane	3.3	0.0	0.0	0.0	0.0	7.8
Water-soluble salts of peroxodisulfuric acid	0.0	18.0	0.0	0.0	0.0	0.0
Boron compounds	0.0	0.0	0.0	0.0	0.1	0.2
Poly (oxyethylene) alkyl ether(Limited to substances with alkyl group carbon atoms from 12 up to 15 and their mixtures)	0.0	0.0	0.0	0.0	0.0	0.2
Methylenebis (1,4-cyclohexylene) diisocyanate	0.0	0.0	0.0	0.0	0.0	0.1
Molybdenum and its compounds	0.0	0.0	0.0	0.0	0.0	4.8
TRIS(2-ETHYLHEXYL)	0.3	0.0	0.0	0.0	0.0	16.0
50 substances other than those listed above	0.1	0.0	0.0	0.0	0.0	0.8
Total	15.5	18.2	0.0	0.0	0.1	184.5
Dioxins *	0.18	7.5×10^{-5}	0.0	0.0	0.0	0.10

*Dioxins: Unit: mg-TEQ

Discharge of PRTR Substances



Transfer of PRTR Substances

Acquisition of Management System Certification

ISO 14001 Environmental Management Systems

- Mie Plant (December 1996)
- Kashima Plant (March 1998)
- Fuji Plant (April 2000)
- Chiba Plant (May 2000)
- Soma Plant (September 2000)
- Akashi Plant (March 2001)
- Oxirane Chemical Corp. (March 2001)
- Tokyo Environmental Measurement Center Co., Ltd. (February 2003)
- ADEKA Korea Corp. (January 2006)
- ADEKA Fine Chemical Taiwan Corp. (February 2007)
- ADEKA Fine Chemical (Changshu) Co., Ltd. (July 2007)
- Amfine Chemical Corp. (September 2007)
- ADEKA Foods (Changshu) Co., Ltd. (August 2009)

OHSAS 18001 Occupational Health and Safety Management Systems

- Mie Plant (September 2001)
- Soma Plant (November 2002)
- Kashima Plant (November 2002)
- Akashi Plant (March 2003)
- Chiba Plant (October 2003)
- Fuji Plant (December 2003)
- ADEKA Fine Chemical Taiwan Corp. (June 2007)
- ADEKA Foods (Changshu) Co., Ltd. (August 2009)

ISO 22000 certification for food safety

- ADEKA Foods (Changshu) Co., Ltd. (January 1998)
- Akashi Plant (April 2008)
- ADEKA Fine Foods Corp. (March 2010)

FSSC 22000 certification for food safety

- Kashima Plant–West (November 2011)

Hazard Analysis Critical Control Point (HACCP) implementation

- ADEKA Fine Foods Corp. (January 1998)
- Kashima Plant (March 2002)
- Akashi Plant (March 2004)

ISO22301 Business Continuity Management System

- ADEKA FINE CHEMICAL TAIWAN CORP. (January 2013)

BS 25999 certification for business continuity management systems (BCMS)

- Soma Plant and Head Office
  (March 2010, for manufacturing of lubricant additives and cold forging oil additives)

ISO 19001 Quality Management Systems

- Mie Plant (June 1993)
- Kashima Plant (April 1996)
- Fuji Plant (January 1997)
- Chiba Plant (July 1997)
- Oxirane Chemical Corp. (October 1997)
- Soma Plant (August 1998)
- ADEKA Clean Aid Corp. (October 1999)
- ADEKA Engineering & Construction Corp. (March 2002)
- Kukdo Chemical (Kunshan) Co., Ltd. (March 2004)
- Amfine Chemical Corp. (October 2004)
- ADEKA Korea Corp. (October 2004)
- ADEKA Fine Chemical (Shanghai) Co., Ltd. (May 2005)
- Tokyo Environmental Measurement Center Co., Ltd. (August 2005)
- ADEKA Fine Chemical (Changshu) Co., Ltd. (October 2005)
- Uehara Foods Industry Co., Ltd. (November 2005)
- ADEKA (Singapore) Pte. Ltd. (April 2006)
- Felda Oil Products Sdn Bhd (June 2006)
- ADEKA Fine Chemical Taiwan Corp. (July 2006)
- ADEKA Fine Chemical (Thailand) Co., Ltd. (December 2006)

Integrated management system (IMS)

- Soma Plant (August 2004)
- Kashima Plant (November 2008)
- Fuji Plant (December 2009)
- Chiba Plant (July2011)

Received Total Productive Maintenance (TPM) Awards

- Chiba Plant: 1994 Excellence Award
- Kashima Plant and Mie Plant: 1995 Excellence Award
- Oxirane Chemical Corp.: 1995 Excellence Award
- Akashi Plant: 2004 Excellence Award
- Kashima Plant: 2007 Excellence Award
  —Special Award for TPM Achievement
- Fuji 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. (March 6, 2011)