

Ajinomoto Group Sustainability Report 2014

Environment

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Eat Well, Live Well.
AJINOMOTO®

Business sites of Ajinomoto Group certified with ISO 14001 etc.

As of October, 2014

■ Overview

		Certified	In progress	Total	Progress rate
In Japan	Ajinomoto Co., Inc.	23	0	23	100%
	Subsidiaries in Japan	49	2	51	96%
	Sub total	(72)	(2)	(74)	97%
Outside Japan		47	5	52	90%
Group total		119	7	126	94%

		Certified	In progress	Total	Progress rate
Ajinomoto Co., Inc.		23	0	23	100%
Subsidiaries of Ajinomoto Co., Inc.	under Planning/Supporting Division	5	0	5	100%
	under Food Products Division	39	7	46	85%
	under Bioscience Products & Fine Chemicals Division	21	0	21	100%
	under Production	1	0	1	100%
Ajinomoto Frozen Foods Co., Inc. and its subsidiaries		18	0	18	100%
AJINOMOTO LOGISTICS CORPORATION and its subsidiaries		9	0	9	100%
Ajinomoto Pharmaceuticals Co., Inc.		3	0	3	100%
Group total		119	7	126	94%

■ Detail

FY	Business sites and Group Company	Certified in
1998	Ajinomoto Co., Inc. Kyushu Plant	1998.07
1999	Ajinomoto Co., Inc. Tokai Plant	1999.11
	Ajinomoto Frozen Foods Co., Inc. Chubu Plant	2000.02
2000	Ajinomoto Vietnam Co., Ltd. Bien Hoa Plant 【Vietnam】	2001.03
	Ajinomoto Co., Inc. Kawasaki Plant	2001.03
2001	Ajinomoto Co., (Thailand) Ltd. Pathum Thani Factory 【Thailand】	2001.09
	Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda. Limeira Plant 【Brazil】	2001.12
	Lianyungang Ajinomoto Ruyi Foods Co., Ltd. 【China】	2002.02
	Lianyungang Ajinomoto Frozen Foods Co., Ltd. 【China】	2002.02
2002	Ajinomoto Co., (Thailand) Ltd. Pathum Thani Factory 【Thailand】	2002.06
	Knorr Foods Co., Ltd. Tokai Plant	2002.08
	Knorr Foods Co., Ltd. Chubu Plant	2002.11
	Ajinomoto Engineering Corporation	2003.02
	Ajinomoto Frozen Foods Co., Inc. Kyushu Plant	2003.03
	Ajinomoto Co., Inc. Research Laboratories and Center	2003.03
	Ajinomoto Fine-Techno Co., Inc. Head Office	2003.03
2003	Ajinomoto Co., Inc. Head Office and Branch Offices (18 offices)	2003.04
	Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda. Laranjal Paulista Plant 【Brazil】	2003.06
	Knorr Foods Co., Ltd. Kawasaki Plant	2003.07
	Ajinomoto Co., (Thailand) Ltd. Phra Pradaeng Factory 【Thailand】	2003.07
	Hokkaido Ajinomoto Co., Inc.	2003.09
	AJINOMOTO NORTH AMERICA, INC. Iowa Plant 【U.S.A.】	2003.11 *1
	Ajinomoto Fine-Techno Co., Inc. Activated Carbon Division	2003.12
	PT Ajinex International 【Indonesia】	2004.02

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Business sites certified with ISO14001

FY	Business sites and Group Company	Certified in	
2003	PT Ajinomoto Indonesia Mojokerto Factory	【Indonesia】 2004.02	
2004	Ajinomoto Heartland LLC	【U.S.A.】 2004.04	
	FLAVOR FOOD PRODUCTS INTERNATIONAL INC.	【Philippines】 2004.04	
	AJINOMOTO NORTH AMERICA, INC. North Carolina Plant	【U.S.A.】 2004.05 *1	
	Ajinomoto Packaging Co., Inc. Head Office	2004.07	
	Ajinomoto Packaging Co., Inc. Kansai Plant	2004.07	
	Ajinomoto Packaging Co., Inc. Kanto Plant	2004.07	
	Hokkaido Knorr Foods Co., Ltd. Kunneppu Plant	2004.09	
	Hokkaido Knorr Foods Co., Ltd. Mikasa Plant	2004.09	
	Hokkaido Knorr Foods Co., Ltd. Tokachi Plant	2004.09	
	Okinawa Ajinomoto Co., Inc.	2004.11	
	Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda. Valparaíso Plant	【Brazil】 2004.11	
	Fuji Ace Co., Ltd. Bangpoo Factory	【Thailand】 2005.03	
	Ajinomoto Frozen Foods Co., Inc. Head Office	2005.03	
	Ajinomoto Frozen Foods Co., Inc. Kanto Plant	2005.03	
	Ajinomoto Frozen Foods Co., Inc. Shikoku Plant	2005.03	
	AJINOMOTO BAKERY CO., LTD. Head Office and Shimada Plant	2005.03	
	2005	Ajinomoto Packaging Co., Inc. Sano Plant	2005.06
		HENAN AJINOMOTO AMINO ACID CO., LTD.	【China】 2005.07
		Ajinomoto Poland Sp. z o.o.	【Poland】 2005.08
Shanghai Ajinomoto Amino Acid Co., Ltd.		【China】 2005.09	
Ajinomoto Communications, Inc.		2005.09	
FFA International Co., Ltd.		2005.11	
Ace Kounai Service Corporation		2005.11	
Komec Co., Ltd. Osaka Plant		2005.12	
Komec Co., Ltd. Tokyo Plant		2005.12	
Ajinomoto Frozen Foods (Thailand) Co., Ltd.		【Thailand】 2005.12	
AJINOMOTO HEALTHY SUPPLY, INC. Takasaki Plant		2005.12	
Vege Pro Foods Co., Ltd.		2006.01 *2	
Ajinomoto Sweeteners Europe S.A.S.		【France】 2006.01	
Ajinomoto Co., (Thailand) Ltd. Nong Khae Factory		【Thailand】 2006.01	
Ajinomoto Co., (Thailand) Ltd. Kamphaeng Phet II Factory		【Thailand】 2006.02	
Ajinomoto (Malaysia) Berhad		【Malaysia】 2006.03	
AJINOMOTO EUROLYSINE S.A.S.		【France】 2006.03	
Ajinomoto Pharmaceuticals Co., Inc. Kanto Logistics Center		2006.03	
Ajinomoto Pharmaceuticals Co., Inc. Shizuoka Distribution Center		2006.03	
2006		Ajinomoto Pharmaceuticals Co., Inc. Saitama Plant	2006.04 *3
	Ajinomoto Pharmaceuticals Co., Inc. Fukushima Plant	2006.04 *3	
	Ajinomoto Pharmaceuticals Co., Inc. Head Office	2006.04	
	Ajinomoto Pharmaceuticals Co., Inc. Oigawa Plant	2006.04	
	Ajinomoto Pharmaceuticals Co., Inc. Shimizu Plant	2006.04	
	AJINOMOTO LOGISTICS CORPORATION	2006.05 *4	
	Chuo Ace Logistics Corporation	2006.05 *4	
	Kansai Ace Logistics Corporation	2006.05 *4	
	Kanto Ace Logistics Corporation	2006.05 *4	
	Hokkaido Ace Logistics Corporation	2006.05 *4	
	Tokai Ace Logistics Corporation	2006.05 *4	

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Business sites certified with ISO14001

FY	Business sites and Group Company	Certified in
2006	Tohoku Ace Logistics Corporation	2006.05 *4
	Kyushu Ace Logistics Corporation	2006.05 *4
	Nippon Protein Co., Ltd. Ashikaga Plant	2006.06
	Wan Thai Foods Industry Co., Ltd. 【Thailand】	2006.07
	Xiamen Ajinomoto Life Ideal Foods Co., Ltd 【China】	2006.09
	ABBT 【Thailand】	2006.10 *5
	AJINOMOTO FOODS EUROPE S.A.S. 【France】	2006.12
	S.A. Ajinomoto OmniChem N.V. Louvain-la-Neuve Plant 【Belgium】	2006.12
	S.A. Ajinomoto OmniChem N.V. Wetteren Plant 【Belgium】	2006.12
	S.A. Ajinomoto OmniChem N.V. Balen Plant 【Belgium】	2006.12
	FREC KANTO CO., LTD.	2007.02
	ACE BAKERY CO., LTD.	2007.03
2007	Ajinomoto del Perú S.A Callao Plant 【Peru】	2007.05
	Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda. Pederneiras Plant 【Brazil】	2007.11
	FREC DESSERT CO., LTD. Main Plant	2008.01
	Delica Ace Co., Ltd. Ageo Plant	2008.02
	Shanghai Ajinomoto Seasoning Co., Ltd. 【China】	2008.02
2008	Ajinomoto Fine-Techno Co., Inc. Gunma Plant	2008.06
	FD Green (Thailand) Co., Ltd. 【Thailand】	2008.10
	Delica Ace Co., Ltd. Yamagata Plant	2008.12
	Global Cebu Foods Corporation 【Philippines】	2009.01
2009	Shanghai Amoy Foods Co., Ltd. 【China】	2009.06
	Ajinomoto Vietnam Co., Ltd. Long Thanh Factory 【Vietnam】	2009.12
	Ajinomoto Betagro Specialty Foods Co., Ltd. 【Thailand】	2009.12
	Bonito Technical Laboratory Co., Inc.	2009.12 *2
	FREC DESSERT CO., LTD. Kita-kanto Factory	2010.01
	Ajinomoto Sales (Thailand) Co., Ltd. BIRDY Plant 【Thailand】	2010.03
	Ajinomoto Betagro Frozen Foods (Thailand) Co., Ltd. 【Thailand】	2010.03
2010	SHANGHAI AJINOMOTO FOOD RESEARCH AND DEVELOPMENT CENTER CO., LTD. 【China】	2010.04
	Fuji Ace Co., Ltd. Sinsakhon Factory 【Thailand】	2010.10
	Shanghai Amoy Food Co., Ltd. 【China】	2010.10
2012	Ajinomoto Pharmaceuticals Co., Inc. Research Center	2012.04 *6
	Ajinomoto Animal Nutrition Group, Inc.	2012.05
2013	Amoy Food Limited 【China】	2013.02
2014	Ajinomoto Frozen Foods U.S.A., Inc. 【U.S.A.】	2014.11

*1: Ajinomoto Food Ingredients LLC and Ajinomoto AminoScience LLC were merged into AJINOMOTO NORTH AMERICA, INC.

*2: The certification acquired by Vege Pro Foods Co., Ltd. and Bonito Technical Laboratory Co., Inc. is "Eco Action 21".

*3: Saitama and Fukushima Plant of AJINOMOTO PHARMACEUTICALS CO.,LTD. have renewed their certification in April, 2006 as scope extension of the previous scope certified in March 2005, due to the merger.

*4: The previously obtained Green Management Certifications by the transportation subsidiaries of AJINOMOTO LOGISTICS CORPORATION (ALC) were integrated in ALC's ISO14001 certification.

*5: Ajinomoto Calpis Beverage (Thailand) Co., Ltd. changed the company name to ABBT Co., Ltd., after the divestiture of Calpis Co., Ltd.

*6: The Parenteral & Enteral Nutrition and Dialysis Research Laboratories of AJINOMOTO PHARMACEUTICALS CO.,LTD. expanded the certification in other laboratories, and as the Research Center, newly acquired the certification in May 2012.

Note:1. Malaysia Packaging Industry Berhad was excluded from the scope of the Ajinomoto Group's environmental management system from fiscal year 2005.

Note:2. Headquarters, Okayama and Gumma Plant of Calpis Co., Ltd., and Calpis Foods Service Co.,Ltd. was excluded from the scope of the Ajinomoto Group's environmental management system since Calpis Co., Ltd. was divested in October 2012.

Environmental Accounting
Environmental Conservation Cost

■ Scope of data collection: Ajinomoto Co., Inc.
■ Period: 2013/04~2014/03

Investment		(Unit: ¥ million)					
Category	Item	FY2005	FY2010	FY2011	FY2012	FY2013	Remarks
Business area	Environmental conservation investment to control environmental impacts resulted from production and service activities within the business area	55	1,004	2,085	1,129	1,075	Investment for environment related facilities/equipment in Head/Branch Office and 3 plants in Japan
	1) Pollution prevention investment	55	808	2,018	311	390	Investment for maintaining facilities of air and water quality.
	2) Global environmental conservation investment	0	192	57	729	521	Investment for CO ₂ emission reduction, energy saving. Investment for production methods conversion.
	3) Resource circulation investment	0	5	11	88	164	Investment for byproducts, waste recycle and waste disposal. Investment for removing old waste water facilities.
Upstream/downstream	Environmental conservation investment to control environmental impacts resulted from business operations upstream or downstream	0	3	1	0	5	
Administration	Environmental conservation investment stemming from administrative activities	0	18	88	69	25	Investment for environmental data reporting Investment for "Tangible earth" system.
R&D	Environmental conservation investment stemming from related R&D activities	0	0	1	0	18	Investment for the reagent management system and the packaging design support system.
Social activity	Environmental conservation investment stemming from social activities	0	5	0	6	52	Investment for the IFRS+ adaptation. Investment for enhancement of tour facilities.
Environmental remediation	Investment incurred for dealing with environmental degradation	0	0	1	0	0	
Total		55	1,029	2,176	1,204		*IFRS=International Financial Reporting Standards

Expenditure		(Unit: ¥ million)					
Category	Item	FY2005	FY2010	FY2011	FY2012	FY2013	Remarks
Business area	Environmental conservation cost to control environmental impacts resulted from production and service activities within the business area	3,191	2,601	2,366	3,155	2,761	Operating cost in environment related facilities or equipments in headquarters, branch Offices and 3 plants in Japan
	1) Pollution prevention cost	1,536	1,592	1,389	2,307	1,812	Cost for maintaining air and water quality (mainly cost of wastewater treatment etc.)
	2) Global environmental conservation cost	48	65	38	38	31	Cost for CO ₂ emission reduction, energy saving
	3) Resource circulation cost	1,607	944	939	809	918	Cost for by-products, waste recycle and waste disposal
Upstream/downstream	Environmental conservation cost to control environmental impacts resulted from business operations upstream or downstream	495	275	259	257	252	Cost for the Containers and Packaging Recycling Act
Administration	Environmental conservation cost stemming from administrative activities	433	491	438	402	369	Cost for maintaining EMS and environment related administrative operations in headquarters. (Excluding social activities cost)
R&D	Environmental conservation cost stemming from related R&D activities	289	1,684	2,777	3,105	3,044	Cost for the environmentally contributing R&D themes.
Social activity	Environmental conservation cost stemming from social activities	378	147	143	125	128	Cost for Environmental Report, Eco Products, Environmental campaigns and so on.
Environmental remediation	Cost incurred for dealing with environmental degradation	0	0	0	0	0	
Total		4,786	5,199	5,983	7,044	6,555	

Investment/ R&D expenditures (Ajinomoto Group)		(Unit: ¥ million)					
Item	Detail	FY2005	FY2010	FY2011	FY2012	FY2013	Remarks
Investment	Capital investment	21,600	7,970	10,389	11,999	11,140	
	Investment for environment related equipment/facility included in capital investment	55	1,029	2,177	1,204	1,174	
R&D	R&D	25,700	32,283	29,872	27,505	27,569	(*) Total amount of the cost for the environmentally contributing themes.
	Investment for environment related development included in R&D (*)	289	1,684	2,778	3,105	3,044	

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[Environment] Additional Documents and Data

Major environmental performance

(Unit: ¥ 100million)

Category	Item	Unit	FY2005	FY2010		FY2011		FY2012		FY2013		
				Actual	Economic Effect *	Actual	Economic Effect *	Actual	Economic Effect *	Actual	Economic Effect *	
Production	Volume	Thousands of tons	182	175	—	172	—	165	—	165	—	
Input	Water	River water	Thousands of tons	41,831	15,024	—	12,449	—	11,118	—	8,603	—
		Industrial water	Thousands of tons	33,575	28,762	—	28,682	—	30,632	—	21,733	—
		Other	Thousands of tons	1,177	863	—	808	—	747	—	740	—
		Total water input	Thousands of tons	76,583	44,649	—	41,940	—	42,498	—	31,076	—
	Energy	Electricity	MWH	104,571	71,037	4.0	56,688.5	5.7	51,667.0	6.3	55,710	5.9
		City gas	KM ³	58,319	40,787	8.8	39,994.1	9.2	40,108.9	9.1	38,983	9.7
		LNG	KNM ³	29,670	29,731	0.0	31,118.8	-0.7	22,783.0	3.4	26,894	1.4
		Heavy oil	KL	38,377	27,814	5.1	30,416.7	3.8	28,809.0	4.6	26,342	5.8
		Total energy input	TJ	5,580	4,318	—	4,402	—	3,978	—	4,016	—
		Per-unit energy usage	GJ/Production(t)	31	25	—	26	—	24	—	24	—
Output	Water	Discharged water	Thousands of tons	76,106	37,346	—	34,573	—	30,433	—	29,518	—
		Per-unit discharged water	Thousands of tons /Production(t)	0.42	0.21	—	0	—	0	—	0.18	—
		BOD emissions	t	379	207	—	169	—	129	—	89	—
		TN emissions	t	3,046	662	—	477	—	406	—	321	—
	NO _x	Emissions	t	229	142	—	153	—	134	—	121	—
		SO _x	Emissions	t	685	640	—	710	—	712	—	671
	CO ₂	CO ₂ emissions	Thousands of tons	339	259	1.6	262.1	1.5	238.3	2.0	239	2.0
		Per-unit CO ₂ emissions	t/Production(t)	1.86	1.48	—	2	—	1	—	1.45	—
	Waste	Waste generation	Thousands of tons	101	67	—	70	—	71	—	79	—
		Resource recovery ratio	%	98.6	99.8	—	100	—	100	—	85.6	—
Waste product	Total amount	100 million (JPY)	13.3	8.0	5.3	17.9	-4.6	12.2	1.1	9.3	4.0	
	Total weight	t	2,018	2,348	—	3,070	—	1,263	—	1,499	—	
Economic effect		100 million (JPY)	—	—	24.8	—	14.9	—	26.6	—	28.7	

*: ①Compared to FY2005 based on technical cost

②CO₂ reduction benefit is calculated by ¥2,000/t-CO₂

Chemical Substances and Emission Levels

Aggregation period: 2013/4~2014/3

Aggregation scope: Ajinomoto Co., Inc. and its subsidiaries in and outside Japan

The Ajinomoto Group manages chemical substances and reports on the results in accordance with laws in each region.

The Group reports on the results in accordance with PRTR Law or relevant laws/regulations in each country.

(*PRTR: A law which estimates the amounts of specific chemical substances released into the environment, and promotes the improvement of management.)

Japan

Applicable laws and regulations : PRTR (Pollutant Release and Transfer Register) System

(kg)

Class I Designated Chemical Substances			Amount released into				Amount transferred to	
Substance name	No.	Specific Class I	Air	Water (public area)	Land (inside)	Landfills (inside)	Sewer	Outside
Acetonitrile	013		1,801	-	-	-	0.4	36,900
N-alkylbenzenesulfonic acid and its salts (alkyl C=10-14)	030		-	-	-	-	-	5
Asbestos	033	○	-	-	-	-	-	27,400
Bisphenol A	037		-	-	-	-	-	500
Xylene	080		1,100	-	-	-	23	15
HCFC-22(chlorodifluoromethane)	104		4	-	-	-	-	-
Dichloromethane(methylene dichloride)	186		700	-	-	-	-	36,000
N,N-dimethylacetamide	213		-	-	-	-	-	62,000
N,N-dimethylformaldehyde	232		51	-	-	-	-	8,191
Dioxins(unt: mg-TEQ)	243	○	0.42	0.35	-	-	-	0.03
Thiourea	245		-	-	-	-	-	450
Toluene	300		382	-	-	-	-	19,000
Piperazine	341		-	-	-	-	-	53
Pyridine	342		30	-	-	-	-	3,000
Phenol	349		-	-	-	-	-	330
N-hexane	392		-	-	-	-	-	1,300
Formaldehyde	411	○	5	-	-	-	42	220
Manganese and its compounds	412		-	-	-	-	-	2,800
Methylnaphthalene	438		102	-	-	-	-	-
Tritolyl phosphate	460		-	-	-	-	-	11
Triphenyl phosphate	461		-	-	-	-	-	170

*Business sites which reported performance are:

Ajinomoto Co.,Inc (Kawasaki Plant,Tokai Plant,Kyushu Plant), Ajinomoto Pharmaceuticals Co.,Inc(Fukushima Plant,Laboratory),

Ajinomoto Fine-Techno Co., Inc (Head Office, BU Activated Carbon, Gunma Plant), AJINOMOTO BAKERY CO.,LTD. (Shimada Plant)

*You can check each site's data on the website of Ministry of Economy, Trade and Industry.

(Performance of FY2013 will be released in February, 2015)

http://www.meti.go.jp/policy/chemical_management/law/prtr/6.html (Japanese only)

North America

Applicable laws and regulations :

EPCRA (Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986)

(kg)

Chemical substance name	Amount used	Amount tranferred (released)
Ammonia	552,851	83,178
Methanol	355,863	812

*Business sites which reported results are:

AJINOMOTO HEARTLAND, Inc., AJINOMOTO NORTH AMERICA, Inc.

South America

Applicable laws and regulations :

IBAMA Normative Instruction No. 31 of December 3, 2009.

(kg)

Chemical substance name	Amount used
Ammonia	15,491,890
Potassium hydroxide	198,119,540
Sodium hydroxide	69,040,720
Acid chloride	42,900
Phosphoric acid	791,380
Hydrochloric acid	9,634,670
Sulfuric acid	14,617,370
Copper Sulfate	180,400
Zinc sulfate	2,004,640
Magnesium sulfate	314,527,170
Ethanol	132,560,790

*Business sites which reported results are:

AJIMONOTO do BRASIL Ind. e Com. de Alimentos Ltda (4 business sites)

Europe

Applicable laws and regulations :

Flemish Decree on General Environmental Policy, Flemish Environmental Regulation (Vlarem II) (Belgium)

Ministerial order from February the 2nd 1998, modified by the decree from May the 29th 2000 (France)

(kg)

Chemical substance name	Amount tranferred (released) to		
	Waste	Air	Water
Toluene	-	40	1
Methanol	-	-	2,536
Acetic acid	-	-	1,661
Dichloromethane	-	569	2
Formic acid	-	-	2,105
Trichloromethane	-	342	0.4
Xylenes	-	-	0.1
Solvents	1,128	-	0.1
Non-methane short chain organic compounds	-	84	-
Halogenated hydrocarbon	-	2	-
Other chemical substances	10,887	4	0.4

*Business sites which reported results are:

S.A. AJINOMOTO OMNICHEM N.V., Ajinomoto Sweetners Europe S.A.S., AJINOMOTO EUROLYSINE S.A.S.,
AJINOMOTO FOODS EUROPE S.A.S.

Other Areas

Thailand : Introduction of similar system is under consideration.

Ajinomoto Co., Inc. Kawasaki Plant Site (Plant & Research Laboratories)

INPUT

Item	Unit	FY2013
Input energy	TJ	1,496
Volume of water consumed	km ³	14,393

- Location: Kawasaki City, Kanagawa Prefecture
- Main Products: seasonings, amino acids
- Date ISO14001 Certification Acquired: March, 2001 (plant area)
March, 2003 (research laboratories)

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	22.9
Volume of recovered resources	kt	22.8
Resource recovery ratio	%	99.9
Volume of disposed waste	kt	0.02

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	77.1
SO _x	t	0.0
NO _x	t	43.3

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	13,042
BOD	t	2.2
T-N	t	8.1
T-P	t	0.2

Ajinomoto Co., Inc. Tokai Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	1,206
Volume of water consumed	km ³	9,432

- Location: Yokkaichi City, Mie Prefecture
- Main Products: sweeteners, seasonings, specialty chemicals, amino acids
- Date ISO 14001 Certification Acquired: November, 1999

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	22.3
Volume of recovered resources	kt	22.0
Resource recovery ratio	%	99.0
Volume of disposed waste	kt	0.03

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	64.6
SO _x	t	0.0
NO _x	t	24.0

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	9,446
BOD	t	16.0
T-N	t	71.0
T-P	t	27.8

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Individual Data for Major Business Sites in and outside Japan
Ajinomoto Co., Inc. Kyushu Plant/Knorr Foods Co., Ltd. Kawasaki Plant

Ajinomoto Co., Inc. Kyushu Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	1,158
Volume of water consumed	km ³	7,217

- Location: Saga City, Saga Prefecture
- Main Products: amino acids
- Date ISO 14001 Certification Acquired: July 1998

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	30.5
Volume of recovered resources	kt	30.5
Resource recovery ratio	%	99.9
Volume of disposed waste	kt	0.02

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	88.1
SO _x	t	671.2
NO _x	t	53.2

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	1,405
BOD	t	70.9
T-N	t	242.3
T-P	t	-

Knorr Foods Co., Ltd. Kawasaki Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	80
Volume of water consumed	km ³	57

- Location: Kawasaki City, Kanagawa Prefecture
- Main Products: soups, sauces
- Date ISO 14001 Certification Acquired: July 2003

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	1.2
Volume of recovered resources	kt	1.2
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	5.6
SO _x	t	-
NO _x	t	-

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	0.0
BOD	t	0.0
T-N	t	0.0
T-P	t	-

Knorr Foods Co., Ltd. Tokai Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	98
Volume of water consumed	km ³	506

- Location: Shimada City, Shizuoka Prefecture
- Main Products: retort foods, soups, pharmaceuticals
- Date ISO 14001 Certification Acquired: August 2002

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	0.7
Volume of recovered resources	kt	0.7
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	7.2
SO _x	t	0.0
NO _x	t	-

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	479
BOD	t	0.1
T-N	t	0.2
T-P	t	-

Knorr Foods Co., Ltd. Chubu Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	49
Volume of water consumed	km ³	96

- Location: Yokkaichi City, Mie Prefecture
- Main Products: soups, mayonnaise
- Date ISO 14001 Certification Acquired: November 2002

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	1.7
Volume of recovered resources	kt	1.7
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	4.1
SO _x	t	-
NO _x	t	0.5

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	33
BOD	t	0.3
T-N	t	0.1
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Kanto Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	91
Volume of water consumed	km ³	189

- Location: Oura-gun, Gunma Prefecture
- Main Products: frozen foods
- Date ISO 14001 Certification Acquired: March 2005

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	1.5
Volume of recovered resources	kt	1.5
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	7.5
SO _x	t	0.0
NO _x	t	0.0

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	108
BOD	t	0.9
T-N	t	1.0
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Shikoku Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	105
Volume of water consumed	km ³	191

- Location: Sanuki City, Kagawa Prefecture
- Main Products: frozen foods
- Date ISO 14001 Certification Acquired: March 2005

OUTPUT

● Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	2.4
Volume of recovered resources	kt	2.4
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

● Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	9.2
SO _x	t	0.7
NO _x	t	0.2

● Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	0
BOD	t	0.0
T-N	t	0.0
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Kyushu Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	65
Volume of water consumed	km ³	148

- Location: Saga City, Saga Prefecture
- Main Products: frozen foods
- Date ISO 14001 Certification Acquired: March 2003

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	1.6
Volume of recovered resources	kt	1.6
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	5.8
SO _x	t	0.4
NO _x	t	0.3

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	0.0
BOD	t	0.0
T-N	t	0.0
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Chubu Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	112
Volume of water consumed	km ³	232

- Location: Ibi-gun, Gifu Prefecture
- Main Products: frozen foods
- Date ISO 14001 Certification Acquired: February 2000

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	2.5
Volume of recovered resources	kt	2.5
Resource recovery ratio	%	100.0
Volume of disposed waste	kt	0.0

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	9.0
SO _x	t	160.6
NO _x	t	131.1

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	135
BOD	t	0.7
T-N	t	0.9
T-P	t	-

Ajinomoto Group Sustainability Report 2014

[Environment] Additional Documents and Data

Individual Data for Major Business Sites in and outside Japan

Thailand/Brazil

AJINOMOTO CO.,(THAILAND) LTD.

Thailand Area

Phra Pradaeng Factory, Pathum Thani Factory, Kamphaeng Phet Factory, Nong Khae Factory,
Lat Lum Kaeo Factory ,Birdy Factory,

INPUT

Item	Unit	FY2013
Input energy	TJ	6,884
Volume of water consumed	km ³	7,864

●Location: Thailand

●Main Products: seasonings, food, feed use amino acids

●Date ISO14001 Certification Acquired: September 2001 Pathum Thani Factory
June 2002 Kamphaeng Phet Factory
July 2003 Phra Pradaeng Factory
January 2006 Nong Khae Factory
March 2010 Birdy Factory

<Note>Lat Lum Kaeo Factory is included in the EMS of Phra Pradaeng Factory

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013	
Volume of generated waste & by-products	kt	264.5	
Volume of recovered resources	kt	264.1	
Resource recovery ratio	%	100.0	Phra Pradaeng Factory
		99.9	Pathum Thani Factory
		99.8	Kamphaeng Phet Factory
		97.7	Nong Khae Factory
		99.9	Birdy Factory
		100.0	Lat Lum Kaeo Factory
Volume of disposed waste	kt	0.4	

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	457.3
SO _x	t	425.2
NO _x	t	771.1

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	6,541
BOD	t	15.6
T-N	t	22.3
T-P	t	67.7

Brazil Area

Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda.,

Limeira Plant, Laranjal Paulista Plant, Valparaiso Plant, Pederneiras Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	4,772
Volume of water consumed	km ³	6,752

●Location: Brazil

●Main Products: seasonings, feed-use amino acids, pharmaceutical-use amino acids

●Date ISO14001 Certification Acquired: December 2001 Limeira Plant
June 2003 Laranjal Paulista Plant
November 2004 Valparaiso Plant
November 2007 Pederneiras Plant

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013	
Volume of generated waste & by-products	kt	686.2	
Volume of recovered resources	kt	680.1	
Resource recovery ratio	%	97.4	Limeira Plant
		99.9	Laranjal Paulista Plant
		99.9	Valparaiso Plant
		99.9	Pederneiras Plant
Volume of disposed waste	kt	6.1	

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	169.7
SO _x	t	38.3
NO _x	t	238.9

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	4,598
BOD	t	6.6
T-N	t	3.2
T-P	t	-

France Area

Ajinomoto Sweeteners Europe S.A.S. Dunkerque Plant,
AJINOMOTO EUROLYSINE S.A.S. Amiens Plant,
AJINOMOTO FOODS EUROPE S.A.S. Nesle Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	5,027
Volume of water consumed	km ³	12,316

- Location: France
- Main Products: sweeteners, feed-use amino acid, seasonings
- Date ISO14001 Certification Acquired: January 2006 Dunkerque Plant
March 2006 Amiens Plant
December 2006 Nesle Plant

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	224.9
Volume of recovered resources	kt	218.2
Resource recovery ratio	%	27.8
		99.8
		99.9
Volume of disposed waste	kt	6.6

Dunkerque Plant
Amiens Plant
Nesle Plant

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	13,246
BOD	t	96.0
T-N	t	46.1
T-P	t	-

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	208.3
SO _x	t	0.6
NO _x	t	56.6

North America Area

AJINOMOTO NORTH AMERICA, Inc. Iowa Plant, North Carolina Plant
AJINOMOTO HEARTLAND, Inc. Eddyville Plant

INPUT

Item	Unit	FY2013
Input energy	TJ	4,431
Volume of water consumed	km ³	5,070

- Location: U.S.A.
- Main Products: seasonings, feed-use amino acids, pharmaceutical-use amino acids
- Date ISO14001 Certification Acquired: November 2003 Iowa Plant
April 2004 Eddyville Plant
May 2004 North Carolina Plant

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	203.9
Volume of recovered resources	kt	203.1
Resource recovery ratio	%	99.8
		98.9
		99.7
Volume of disposed waste	kt	0.8

Iowa Plant
North Carolina Plant
Eddyville Plant

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	4,410
BOD	t	28.4
T-N	t	45.9
T-P	t	7.3

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	336.6
SO _x	t	1.0
NO _x	t	103.0

China Area

Shanghai Ajinomoto Seasoning Co., Ltd.,

Henan Ajinomoto Amino Acid Co., Ltd.

SHANGHAI AJINOMOTO AMINO ACID CO., LTD.

INPUT

Item	Unit	FY2013
Input energy	TJ	480
Volume of water consumed	km ³	462

●Location: China

●Main Products: seasonings, pharmaceutical-use amino acids, etc.

●Date ISO14001 Certification Acquired: July 2005 Henan Ajinomoto Amino Acid
September 2005 SHANGHAI AJINOMOTO AMINO ACID
February 2008 Shanghai Ajinomoto Seasoning

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2013
Volume of generated waste & by-products	kt	24.0
Volume of recovered resources	kt	24.0
Resource recovery ratio	%	73.0
		99.8
Volume of disposed waste	kt	0.1

Shanghai Seasoning
HENAN AMINO ACID
Shanghai Amino Acid

●Atmospheric exhaust

Item	Unit	FY2013
CO ₂ (purchased electricity included)	kt	52.4
SO _x	t	0.01
NO _x	t	1.7

●Discharged water

Item	Unit	FY2013
Volume of water discharged	km ³	229
BOD	t	2.1
T-N	t	0.9
T-P	t	-