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Ajinomoto Group Sustainability Report 2013

Environment Additional Documents and Data

INDEX

Business sites of Ajinomoto Group certified with ISO 14001 etc.

As of October, 2013

Overview

		Certified	In progress	Total	Progress rate
In Japan	Ajinomoto Co., Inc.	22	0	22	100%
	Subsidiaries in Japan	54	2	56	96%
	Sub total	(76)	(2)	(78)	97%
Outside Japan		46	6	52	88%
	Group total	122	8	130	94%

		Certified	In progress	Total	Progress Rate
Ajinomoto Co., Inc.		22	0	22	100%
Subsidiaries of Ajinomoto Co., Inc.	under Planning/Supporting Division	3	0	3	100%
	under Food Products Division	40	7	47	85%
	under Bioscience Products & Fine Chemicals Division	20	0	20	100%
	under Production	1	0	1	100%
Ajinomoto Frozen Foods Co., Inc. and its subsidiaries		17	1	18	94%
AJINOMOTO LOGISTICS CORPORATION and its subsidiaries		9	0	9	100%
AJINOMOTO BAKERY CO., LTD. and its subsidiaries		2	0	2	100%
Ajinomoto Pharmaceuticals Co., Inc.		8	0	8	100%
	Group total	122	8	130	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. Kamphaeng Phet I 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

Business sites certified with ISO14001

FY	Business sites and Group Company		Certified in
2003	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
	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
	Ajinomoto Pharmaceuticals Co., Inc. Parenteral & Enteral Nutrition and Dialysis Research Laboratories		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

Business sites certified with ISO14001

FY	Business sites and Group Company	Certified in
2006	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
	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
	ATTB 【Thailand】	2006.10 *6
	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

*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 Industory Berhad was excluded from the scope of the Ajinomoto Group's environmental management system from fiscal year 2005.
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

■Period: 2012/4～2013/3

■Scope of data collection: Ajinomoto Co., Inc.

Investment

(Unit: ¥ million)

Category	Item	FY2005	FY2009	FY2010	FY2011	FY2012	Remarks
Business area	Environmental conservation investment to control environmental impacts resulted from production and service activities within the business area	55	530	1,004	2,085	**1,129**	Investment for environment related facilities/ equipment in Head/Branch Office & 3 plants in Japan
	1) Pollution prevention investment	55	216	808	2,018	**311**	Investment in facilities for maintaining air and water quality(wastewater treatment etc.)/Activate sludge renovation investment was finished and sum of investment decreased this year.
	2) Global environmental conservation investment	0	58	192	57	**729**	Investment for CO_2 emission reduction, energy saving
	3) Resource circulation investment	0	255	5	11	**88**	Investment for byproducts, waste recycle and waste disposa
Upstream/ downstream	Environmental conservation investment to control environmental impacts resulted from business operations upstream or downstream	0	3	3	1	**0**	
Administration	Environmental conservation investment stemming from administrative activities	0	14	18	88	**69**	Investment for information software development on chemical management or waste water control.
R&D	Environmental conservation investment stemming from related R&D activities	0	21	0	1	**0**	
Social activity	Environmental conservation investment stemming from social activities	0	4	5	0	**6**	
Environmental remediation	investment incurred for dealing with environmental degradation	0	9	0	1	**0**	
	Total	55	581	1,029	2,176	**1,204**	

Expenditure

(Unit: ¥ million)

Category	Item	FY2005	FY2009	FY2010	FY2011	FY2012	Remarks
Business area	Environmental conservation cost to control environmental impacts resulted from production and service activities within the business area	3,191	2,750	2,601	2,366	**3,155**	Operating cost in environment related facilities/ equipment in Head/Branch Office & 3 plants in Japan
	1) Pollution prevention cost	1,536	1,676	1,592	1,389	**2,307**	Cost for maintaining air and water quality (wastewater treatment etc.) Depressiation cost for activate sludge in Kawasaki begun and this caused the cost increased.
	2) Global environmental conservation cost	48	39	65	38	**38**	Cost for CO_2 emission reduction, energy saving
	3) Resource circulation cost	1,607	1,034	944	939	**809**	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	272	275	259	**257**	Cost for the Containers and Packaging Recycling Act
Administration	Environmental conservation cost stemming from administrative activities	433	507	491	438	**402**	Cost for maintaining EMS and environment related administration operations in head office (Social activities excluded)
R&D	Environmental conservation cost stemming from related R&D activities	289	1,809	1,684	2,777	**3,105**	Total amount for the parts contributing to the environment (from FY08) (FY07 and before: only for the pollution prevention area)
Social activity	Environmental conservation cost stemming from social activities	378	116	147	143	**125**	Environmental Report, Eco Products and Environmental campaign etc.
Environmental remediation	Cost incurred for dealing with environmental degradation	0	0	0	0	**0**	Cost for soil contamination countermeasures
	Total	4,786	5,453	5,199	5,983	**7,044**	

Investment/ R&D expenditures

(Unit: ¥ million)

Item	Detail	FY2005	FY2009	FY2010	FY2011	FY2012	Remarks
Capital Investment		21,600	30,770	7,970	10,389	**11,999**	
	Investment for environment related equipment /facility included in capital investment	55	581	1,029	2,177	**1,204**	
R&D		25,700	31,160	32,283	29,872	**27,505**	＊1 Total amount for the area contributing to the environment (from FY08) (FY07 and before: only for the pollution prevention area)
	Investment for environment related development included in R&D ＊1	289	1,809	1,684	2,778	**3,105**	

Major environmental performance

(Unit:¥ 100million)

Category		Item	Unit	FY2005	FY2009		FY2010		FY2011		FY2012	
					Actual	Economic Effect ＊2	Actual	Economic Effect ＊2	Actual	Economic Effect ＊2	**Actual**	**Economic Effect ＊2**
Production		Volume	Thousands of tons	182	170	—	175	—	172	—	**165**	**—**
Input	Water	River water	Thousands of tons	41,831	23,678	—	15,024	—	12,449	—	**11,118**	**—**
		Industrial water	Thousands of tons	33,575	32,502	—	28,762	—	28,682	—	**30,632**	**—**
		Other	Thousands of tons	1,177	1,179	—	863	—	808	—	**747**	**—**
		Total water input	Thousands of tons	76,583	57,359	—	44,649	—	41,940	—	**42,498**	**—**
	Energy	Electricity	MWH	104,571	54,057	6.1	71,037	4.0	56,689	5.7	**51,667**	**6.3**
		City gas	KM^3	58,319	50,150	4.1	40,787	8.8	39,994	9.2	**40,109**	**9.1**
		LNG	KNM^3	29,670	28,980	0.3	29,731	0.0	31,119	−0.7	**22,783**	**3.4**
		Heavy oil	KL	38,377	24,949	6.4	27,814	5.1	30,417	3.8	**28,809**	**4.6**
		Total energy input	TJ	5,580	4,492	—	4,318	—	4,402	—	**3,978**	**—**
		Per-unit energy usage	GJ/Production(t)	31	26	—	25	—	26	—	**24**	**—**
Output	Water	Discharged water	Thousands of tons	76,106	51,509	—	37,346	—	34,573	—	**30,433**	**—**
		Per-unit discharged water	Thousands of tons /Production(t)	0.42	0.30	—	0.21	—	0.20	—	**0.18**	**—**
		BOD emissions	t	379	90	—	207	—	169	—	**129**	**—**
		TN emissions	t	3,046	496	—	662	—	477	—	**406**	**—**
	NO_x	Emissions	t	229	135	—	142	—	153		**134**	**—**
	SO_x	Emissions	t	685	422	—	640	—	710		**712**	**—**
	CO_2	CO_2 emissions	Thousands of tons	339	262	1.5	259	1.6	262	1.5	**238**	**2.0**
		Per-unit CO_2 emissions	t/Production(t)	1.86	1.54	—	1.48	—	1.52	—	**1.44**	**—**
	Waste	Waste generation	Thousands of tons	101	62	—	67	—	70	—	**71**	**—**
		Resource recovery ratio	%	98.6	99.7	—	99.8	—	100.0	—	**99.8**	**—**
Waste product		Total amount	100 million (JPY)	13.3	12.3	1.0	8.0	5.3	17.9	−4.6	**12.2**	**1.1**
		Total weight	t	2,018	1,732	—	2,348	—	3,070	—	**1,263**	**—**
Economic effect			100 million (JPY)			19.5		24.8		14.9		**26.6**

Compared to FY2005 based on technical cost

CO_2 reduction benefit is calculated by ¥2,000/t-CO_2

Chemical Substances and Emission Levels

Aggregation period: 2012/4～2013/3

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

Applicabale 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		2,702	170	–	–	–	43,500
N-alkylbenzenesulfonic acid and its salts(alkyl C=10-14)	030		–	–	–	–	–	5
Asbestos	033	○	–	–	–	–	–	26,700
Bisphenol A	037		–	–	–	–	–	400
Xylene	080		750	–	–	–	33	10
HCFC-22(chlorodifluoromethane)	104		3,000	–	–	–	–	–
Chloroform	127		15	–	–	–	–	2,800
Dichloromethane(methylene dichloride)	186		800	–	–	–	–	34,000
N,N-dimethylacetamide	213		–	–	–	–	–	110,000
N,N-dimethylformaldehyde	232		20	–	–	–	–	5,000
Dioxins(unt: mg-TEQ)	243	○	0.001	0.20	–	–	–	0.11
Thiourea	245		–	–	–	–	–	620
Trimethylamine	277		–	1,200	–	–	–	9,000
1,2,4-trimethylbenzene	296		24	–	–	–	–	217
Toluene	300		303	–	–	–	–	125,000
Naphthalene	302		24	–	–	–	–	14
Piperazine	341		–	–	–	–	–	35
Pyridine	342		–	–	–	–	–	2,500
Phenol	349		–	–	–	–	–	302
N-hexane	392		–	–	–	–	–	4,800
Formaldehyde	411	○	8	–	–	–	60	250
Manganese and its compounds	412		–	–	–	–	–	2,700
Methylamine	423		–	–	–	–	–	1,600
Methylnaphthalene	438		65	–	–	–	–	–
Tritolyl phosphate	460		–	–	–	–	–	81
Triphenyl phosphate	461		–	–	–	–	–	290

*Bussiness sites which reported performance are:

Ajinomoto Co., Inc (Kawasaki Plant, Tokai Plant, Kyushu plant), Ajinomoto Pharmaceuticals Co., Inc (Fukushima Plant, Laboratory), 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 FY2012 will be released in February, 2014)

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

Chemical substances and emission levels

North America

Applicabale 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 tranceferred (released)
Ammonia	648,280	78,603
Methanol	247,870	735

Europe

Applicabale 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 tranceferred (released) to		
	Waste	Air	Water
Toluene	223,962	21	0.83
Methanol/Ethanol	14,916	-	1,972
Acetic acid	730,452	-	1,183
Dichloromethane	-	1,790	2.02
Formic acid	20,176	-	1,533
Trichloromethane	-	2,919	1.18
Xylenes	-	0.08	0.18
Phenol	-	-	0.41
Benzene	-	-	0.04
Ethylbenzene	-	-	0.01
Solvents	5,451,914	-	0.17
Non-methane short chain organic compounds	-	92	-
Halogenated hydrocarbon	-	2.42	-
Other chemical substances	13,491	3.92	-

*Bussiness 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

Brazil : As of September 2013, The relevant new law is still under discussion in Brazil.
(Name of the law: Registro de Emissões e Transferência de Poluentes(RETP))

Thailand : Introduction of similar system is under consideration.

Individual Data for Major Business Sites in and outside Japan
Ajinomoto Co., Inc. Kawasaki/Tokai Plant

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

INPUT

Item	Unit	FY2012
Input energy	TJ	**1,658**
Volume of water consumed	km^3	**21,368**

- Location: Kawasaki City, Kanagawa Prefecture
- Main Products: seasonings, amino acids
- Date ISO14001Certification Acquired: March, 2001 (plant area)
  March, 2003 (research laboratories)

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**24.1**
Volume of recovered resources	kt	**24.1**
Resource recovery ratio	%	**99.9**
Volume of disposed waste	kt	**0.03**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**85.4**
SO_x	t	**–**
NO_x	t	**58.8**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**9,456**
BOD	t	**15.6**
T-N	t	**59.1**
T-P	t	**0.4**

Ajinomoto Co., Inc. Tokai Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**984**
Volume of water consumed	km^3	**12,592**

- 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	FY2012
Volume of generated waste & by-products	kt	**13.3**
Volume of recovered resources	kt	**13.3**
Resource recovery ratio	%	**99.9**
Volume of disposed waste	kt	**0.02**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**51.3**
SO_x	t	**0.0**
NO_x	t	**18.9**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**12,803**
BOD	t	**29.3**
T-N	t	**94.6**
T-P	t	**31.0**

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	FY2012
Input energy	TJ	**1,298**
Volume of water consumed	km^3	**8,505**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**32.3**
Volume of recovered resources	kt	**32.3**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.01**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**98.5**
SO_x	t	**711.7**
NO_x	t	**58.2**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**8,142**
BOD	t	**83.7**
T-N	t	**252.7**
T-P	t	**–**

Knorr Foods Co., Ltd. Kawasaki Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**70**
Volume of water consumed	km^3	**46**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**1.1**
Volume of recovered resources	kt	**1.1**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospherice exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**5.4**
SO_x	t	–
NO_x	t	-

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	-
BOD	t	-
T-N	t	-
T-P	t	-

Knorr Foods Co., Ltd. Tokai Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**98**
Volume of water consumed	km^3	**476**

●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	FY2012
Volume of generated waste & by-products	kt	**0.8**
Volume of recovered resources	kt	**0.8**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**7.4**
SO_x	t	**-**
NO_x	t	**-**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**430**
BOD	t	**0.1**
T-N	t	**0.3**
T-P	t	**0.0**

Knorr Foods Co., Ltd. Chubu Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**48**
Volume of water consumed	km^3	**99**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**1.4**
Volume of recovered resources	kt	**1.4**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**3.9**
SO_x	t	**0.0**
NO_x	t	**0.6**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**63**
BOD	t	**0.2**
T-N	t	**0.2**
T-P	t	**0.1**

Ajinomoto Frozen Foods Co., Inc. Kanto Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**85**
Volume of water consumed	km^3	**197**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**1.3**
Volume of recovered resources	kt	**1.3**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**6.8**
SO_x	t	**0.0**
NO_x	t	**0.0**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**101**
BOD	t	**0.4**
T-N	t	**0.6**
T-P	t	**–**

Ajinomoto Frozen Foods Co., Inc. Shikoku Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**116**
Volume of water consumed	km^3	**217**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**2.2**
Volume of recovered resources	kt	**2.2**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**10.1**
SO_x	t	**0.4**
NO_x	t	**0.2**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	-
BOD	t	-
T-N	t	-
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Kyushu Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**58**
Volume of water consumed	km^3	**133**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**1.3**
Volume of recovered resources	kt	**1.3**
Resource recovery ratio	%	**100.0**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**5.2**
SO_x	t	**0.3**
NO_x	t	**0.3**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	-
BOD	t	-
T-N	t	-
T-P	t	-

Ajinomoto Frozen Foods Co., Inc. Chubu Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**115**
Volume of water consumed	km^3	**213**

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

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
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	FY2012
CO_2 (purchased electricity included)	kt	**9.2**
SO_x	t	**165.1**
NO_x	t	**138.6**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**126**
BOD	t	**0.4**
T-N	t	**0.4**
T-P	t	**–**

Ajinomoto Pharmaceuticals Co., Inc. Saitama Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**105**
Volume of water consumed	km^3	**131**

- Location: Hiki-gun, Saitama Prefecture
- Main Products: infusions
- Date ISO 14001 Certification Acquired: April 2006 (expanded scope)
  (Originally certified in March 2005)

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**0.5**
Volume of recovered resources	kt	**0.5**
Resource recovery ratio	%	**99.6**
Volume of disposed waste	kt	**0.002**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**7.1**
SO_x	t	**–**
NO_x	t	**1.2**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**99**
BOD	t	**0.7**
T-N	t	**1.0**
T-P	t	**0.1**

Ajinomoto Pharmaceuticals Co., Inc. Fukushima Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**124**
Volume of water consumed	km^3	**62**

- Location: Shirakawa City, Fukushima Prefecture
- Main Products: elemental diet products, insulin secretagogue
- Date ISO 14001 Certification Acquired: April 2006 (expanded scope)
  (Originally certified in March 2005)

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**0.5**
Volume of recovered resources	kt	**0.5**
Resource recovery ratio	%	**99.9**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**9.4**
SO_x	t	**–**
NO_x	t	**0.5**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**36**
BOD	t	**0.1**
T-N	t	**0.03**
T-P	t	**–**

Individual Data for Major Business Sites in and outside Japan
Ajinomoto Pharmaceuticals Co., Inc. Shimizu/Oigawa Plant

Ajinomoto Pharmaceuticals Co., Inc. Shimizu Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**75**
Volume of water consumed	km^3	**273**

- Location: Shizuoka City, Shizuoka Prefecture
- Main Products: infusions
- Date ISO 14001 Certification Acquired: April 2006

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**1.6**
Volume of recovered resources	kt	**1.6**
Resource recovery ratio	%	**99.6**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**5.7**
SO_x	t	**–**
NO_x	t	**0.7**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**221**
BOD	t	**0.1**
T-N	t	**0.1**
T-P	t	**-**

Ajinomoto Pharmaceuticals Co., Inc. Oigawa Plant

INPUT

Item	Unit	FY2012
Input energy	TJ	**186**
Volume of water consumed	km^3	**554**

- Location: Shita-gun, Shizuoka Prefecture
- Main Products: infusions
- Date ISO 14001 Certification Acquired: April 2006

OUTPUT

●Waste and Resource recovery

Item	Unit	FY2012
Volume of generated waste & by-products	kt	**0.5**
Volume of recovered resources	kt	**0.5**
Resource recovery ratio	%	**99.8**
Volume of disposed waste	kt	**0.0**

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	**12.9**
SO_x	t	**1.2**
NO_x	t	**4.8**

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	**244**
BOD	t	**0.1**
T-N	t	**0.1**
T-P	t	**–**

Individual Data for Major Business Sites in and outside Japan
Thailand/Brazil

Thailand Area AJINOMOTO CO.,(THAILAND) LTD.

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

INPUT

Item	Unit	FY2012
Input energy	TJ	6,812
Volume of water consumed	km^3	22,226

●Location: Thailand
●Main Products: seasonings, food, feed use amino acids
●Date ISO14001 Certification Acquired: July 2003 Phra Pradaeng Factory
September 2001 Pathum Thani Factory
June 2002 Kamphaeng Phet 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	FY2012	
Volume of generated waste & by-products	kt	379.0	
Volume of recovered resources	kt	378.4	
Resource recovery ratio	%	99.9	Phra Pradaeng Factory
		99.8	Pathum Thani Factory
		99.8	Kamphaeng Phet Factory
		80.1	Nong Khae Factory
		99.9	Birdy Factory
		100.0	Lat Lum Kaeo Factory
Volume of disposed waste	kt	0.6	

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	470.5
SO_x	t	762.0
NO_x	t	444.7

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	17,305
BOD	t	45.3
T-N	t	214.1
T-P	t	47.4

Brazil Area Ajinomoto do Brazil Industria e Comercio de Alimentos Ltda.,

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

INPUT

Item	Unit	FY2012
Input energy	TJ	4,665
Volume of water consumed	km^3	7,838

●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	FY2012	
Volume of generated waste & by-products	kt	794.3	
Volume of recovered resources	kt	785.2	
Resource recovery ratio	%	97.0	Limeira Plant
		99.8	Laranjal Paulista Plant
		100.0	Valparaiso Plant
		99.9	Pederneiras Plant
Volume of disposed waste	kt	9.1	

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	172.4
SO_x	t	83.1
NO_x	t	259.9

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	5,286
BOD	t	28.7
T-N	t	26.6
T-P	t	-

Individual Data for Major Business Sites in and outside Japan
France/North America

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	FY2012
Input energy	TJ	5,585
Volume of water consumed	km^3	13,252

- 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	FY2012	
Volume of generated waste & by-products	kt	241.1	
Volume of recovered resources	kt	236.7	
Resource recovery ratio	%	48.9	Dunkerque Plant
		99.9	Amiens Plant
		99.9	Nesle Plant
Volume of disposed waste	kt	4.5	

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	234.0
SO_x	t	0.6
NO_x	t	75.1

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	13,875
BOD	t	101.8
T-N	t	45.7
T-P	t	-

North America Area

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

INPUT

Item	Unit	FY2012
Input energy	TJ	4,314
Volume of water consumed	km^3	4,878

- 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	FY2012	
Volume of generated waste & by-products	kt	203.3	
Volume of recovered resources	kt	202.8	
Resource recovery ratio	%	99.8	Iowa Plant
		98.9	North Carolina Plant
		99.7	Eddyville Plant
Volume of disposed waste	kt	0.5	

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	321.9
SO_x	t	1.4
NO_x	t	97.4

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	4,209
BOD	t	29.2
T-N	t	116.9
T-P	t	2.5

China Area

Shanghai Ajinomoto Seasoning Co., Ltd.,
Henan Ajinomoto Amino Acid Co., Ltd.
SHANGHAI AJINOMOTO AMINO ACID CO., LTD.

INPUT

Item	Unit	FY2012
Input energy	TJ	463
Volume of water consumed	km^3	407

- 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	FY2012	
Volume of generated waste & by-products	kt	25.7	
Volume of recovered resources	kt	25.6	
Resource recovery ratio	%	73.5	Shanghai Seasoning
		99.9	HENAN AMINO ACID
		99.8	Shanghai Amino Acid
Volume of disposed waste	kt	0.1	

●Atmospheric exhaust

Item	Unit	FY2012
CO_2 (purchased electricity included)	kt	49.6
SO_x	t	0.1
NO_x	t	3.9

●Discharged water

Item	Unit	FY2012
Volume of water discharged	km^3	189
BOD	t	3.3
T-N	t	1.8
T-P	t	-