

AKEBONO REPORT 2015

Data Book

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CSR Promotion Status (fiscal 2014)

Explanatory note: A: 5.0 points, B: from 4.0 to 4.9 points, C: from 3.0 to 3.9 points, D: 2.9 points and below Points represent result of self-evaluation on a scale of 1.0 to 5.0 points that was implemented in reference to the "CSR Check Sheet (revised version as of April 2010)" formulated by JAPIA.

Category	Initiatives	Responsible Organization	Numerical targets (if applicable)	Structure for Promotion, Action taken and Degree of Attainment	Self-evaluation
1. Safety and quality	1-1. Understanding customer needs, providing products that benefit society	Sales Division, R&D Division and Quality Assurance Department		Proactively seek to know the latest customer needs through meetings, etc. / Process inquiries and estimation requests in accordance with prescribed workflows and pass them on to the relevant sections through in-house computer networks / Update customers' product requirements and pass this data on to the relevant sections in a systematic manner / Analyze collected market information and pass it on to the relevant sections in accordance with prescribed workflows / Inspect products prior to delivery to verify performance in the actual usage environment through such methods as Failure Mode and Effects Analysis and Fault Tree Analysis	B
	1-2. Providing information on products in an appropriate manner	Sales Division and Quality Assurance Department; production sites		Provide appropriate information on R&D phase technologies in accordance with prescribed workflows / Provide information on product composition in a systematic manner in accordance with customer and legal requirements and such automobile industry standards as the International Material Data System/Collect information on product failures and share such information in a systematic manner	
	1-3. Ensuring product safety	R&D Division and Quality Assurance Department; production sites		Verify the safety of pre-productions pursuant to the prescribed operation procedures / Examine and verify conformity to legal and safety requirements as well as market and customer needs in a systematic manner at the R&D phase / Quality risk items requiring compliance with legal and safety requirements are identified and are closely controlled / For defective products that are found after the start of mass production, ensure appropriate processing in accordance with prescribed workflows that set forth procedures to check the details of the defect, analysis of magnitude and actions to be taken against its recurrence	
	1-4. Ensuring product quality	Quality Assurance Department	Quality Management System Steering Committee (once a month)	Establish and apply quality management systems within an organizational structure designed to assist quality management activities / Quality management activities are constantly pursued using the PDCA method, with policies and targets being formulated for each fiscal year / Integrate product development processes and Advanced Part Quality Planning (APQP) at locations worldwide/Launched a new quality assurance system at the beginning of fiscal 2015 after revision in areas of manufacturing facility development and global production networks /Acquiring and maintaining the ISO 9001 and ISO/TS 16949 certifications	
2. Human rights and working environment	2-1. Abolishment of discrimination (ensuring equal employment opportunity)	HR Department		Wage structure and personnel evaluation system are set forth irrespective of gender / Gender is eliminated from items verified at the examination for wage raise and promotion	B
	2-2. Respect for human rights (prevention of harassment)	HR Department, Compliance Committee	Activities aimed at raising associates' awareness of compliance (twice a year)	Conduct "compliance proficiency tests" aimed at raising associates' awareness of compliance across the board (twice) / Internal consultation service has been established and announced companywide / Whistle blowers are protected under the prescribed in-house rules	
	2-3. Abolishment of child labor	HR Department		The Company demands newly recruited employees to submit documents to identify their age under the rules of employment	
	2-4. Abolishment of enforced labor	HR Department		Although the company may check employee's passport for proof of identity, the submission of a passport is not required	
	2-5. Appropriate wages	HR Department	Confirmation of minimum wage set forth by local governments (once a year)	The Company is comparing its wage levels and minimum wage set forth by each prefecture, ensuring that it is complying with the law (implemented utilizing a wage database system)	
	2-6. Working hours	HR Department	Managerial training themed on labor time management (once a year)	In accordance with an agreement with the labor union, notification of overtime work exceeding prescribed baseline hours must be submitted and permission gained in advance / Attendance management system is utilized to verify whether working situations are complying with the Labor Standard Law	
	2-7. Communication and consultation with associates	HR Department		Frequency of labor-management consultations as well as matters to consult with is set forth in labor agreement	
	2-8. Safety and health of the working environment	Central Safety and Environment Committee	Reduce occupational accidents (50% year on year) to five or fewer per year	Annual activity plans for facility safety countermeasures and sanitary control at workplaces are formulated and implemented by the Central Safety Environment Committee / FRESH Center and Health Management Office formulate annual activity plans for health management and manage their implementation / Introduced standardized safety manuals for global locations based the manual used in Japan	
	2-9. Human resources nurturing	HR Department	Conducting Education Programs for associates tailored to their rank and job roles (once a year)	Established Ai-Village global training center as a facility to nurture globally capable human resources / Prepared a guidebook that summarizes the content of in-house educational programs and distributed it to all associates while providing them with opportunities to participate in such programs / Education programs for associates tailored to their rank and job roles are implemented (conducted programs for newly appointed team leaders on two occasions, those for newly appointed assistant managers and for new managers on one occasion each and those for newly hired associates on two occasions)	

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Category	Initiatives	Responsible Organization	Numerical targets (if applicable)	Structure for Promotion, Action taken and Degree of Attainment	Self-evaluation
3. Environment	3-1. Environmental management	Global Environment Committee, etc.	Renewal of the ISO 14001 certifications Environmental education	Renewed the ISO 14001 certifications at Iwatsuki Manufacturing, AAIJ (Indonesia) and Akebono Corporation (Suzhou) as well as other three locations / Began providing online educational programs with regard to environmental activities	B
	3-2. Reduction of greenhouse gas emissions	Global Environment Committee (CO ₂ Emission Reduction Project)	Improve CO ₂ intensity 1% or greater every year until 2020 (in reference to JAPIA target value)	In fiscal 2014, CO ₂ emissions per unit of sales on a global basis improved 8.7% year on year through the introduction of next-generation friction material production facilities and the application of heat-insulating coatings to the rooftops of plant buildings	
		Global Environment Committee (logistics environment sectional committee)	Improvement of transportation efficiency: set target to reduce energy intensity 1% year on year basis (in reference to revised Energy Conservation Law)	Energy efficiency in logistics operations improved 2.5% year on year through the introduction of a system for the real-time management of truck operations	
	3-3. Preventing pollution of environment (air, water and soil)	Manufacturing Division	Continued efforts aimed at reducing environmental impact	Reduced SOx emissions through the changeover of oil fired boilers to heat pumps at Iwatsuki Manufacturing	
	3-4. Resource saving and waste reduction	Global Environment Committee (zero-emissions sectional committee)	Maintenance of zero-emissions status (no direct landfill of waste) Promote the reduction and proper disposal of waste	Zero-emissions (no direct landfill) of waste sand was accomplished in fiscal 2014 for the second consecutive year through the efforts such as recycling of sand into cement raw material / Reduced the emission of waste cutting fluid accompanying machining processes by using filtration and centrifuge equipment to recycle such fluid. Received the "Resource-Saving Award" from a municipal government for initiatives aimed at reducing packaging materials and filtering wastewater	
	3-5. Chemical substance management	Environment Department, R&D Division	Response to regulations on copper used in friction materials set forth by states of California and Washington, the United States / After January 1, 2021, materials for new automobile containing 5wt% of copper or more are going to be prohibited / After January 1, 2025, materials for new automobile containing 0.5wt% of copper or more are going to be prohibited	The Company initiated the mass-production of copper-free friction materials for front and rear brakes in 2014 while working to improve the performance of such materials / Chemical substances designated by PRTR laws contained in newly developed friction materials are checked and tracked	
4. Compliance	4-1. Compliance with laws and regulations	Compliance Committee	Compliance Committee meetings (six times per year) / Compliance understanding tests (twice a year) / Provision of training sessions themed on relevant laws (six occasions per year)	Compliance Committee meetings are held six times a year and relevant issues and initiatives are discussed / Conducted "compliance proficiency tests" for all domestic associates to improve their understanding, in addition to other relevant activities implemented in line with priority themes set for each fiscal year (the tests were conducted on two occasions in fiscal 2014) / Provide compliance training sessions (six times per year) to raise associates' awareness	B
	4-2. Compliance with competition laws	Compliance Committee	Provision of training sessions themed on relevant laws (13 occasions per year)	Training sessions: one session focusing on the prevention of private monopolies and cartels and nine focusing on Japan's "Act Against Delay in Payment, etc., to Subcontractors" / The Company raises alerts, regularly sharing data on the latest cases of legal violations through intranet/ The Company makes sure every overseas Group member is fully informed about the latest competition laws in each countries	
	4-3. Corruption prevention	Compliance Committee		The Company raised awareness of the issue of illicit contributions, including political donations and bribery by distributing booklets that present action guidelines for associates at domestic and overseas locations	
	4-4. Control and protection of secret information	Compliance Committee	Audit and review of trade secret management on an annual basis	Conduct audit and review of the status of trade secret management on an annual basis while raising alert over the handling of such secrets by distributing booklets presenting the action guidelines for associates at domestic and overseas locations	
	4-5. Control of export transactions	Compliance Committee	Provision of training sessions themed on relevant laws (twice a year)	Export transactions are managed and overseen by structures set forth in the in-house rules and processed with prescribed operation flow provided by such rules / The Company submitted the "Export Control Rules for National Security" to the Ministry of Economy, Trade and Industry, and is registered as an exporter / Training sessions themed on relevant laws were held to raise associates' awareness of compliance (twice a year)	
	4-6. Intellectual property protection	Legal & Intellectual Property Department (Intellectual Property Section)		Established Patent Committee in the development division to check the latest patent information and to provide the alerts to other departments on a monthly basis. It is mandatory to issue patent examination sheets and confirm non-infringement at every Design Review (Process Review)—milestones of the development and production processes—to ensure patent clearance. This activity will be continued in 2015. Overseas development offices also have the patent committees that check other companies' patent information	

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5. Information disclosure	5-1. Information disclosure to stakeholders	Corporate Communications Office Investor Relations Office	The issuance of the AKEBONO REPORT (once a year, both in Japanese and English)	Information is appropriately disclosed to stakeholders, giving sufficient consideration to the content and the timing / Matters such as financial conditions, performance and business activities are disclosed through such media as TD net and EDINET pursuant to the rules of information disclosure set forth by such media / Update the Company's websites as needed to improve visibility and to ensure that the latest information is disclosed / The Company issues "AKEBONO REPORT," which integrates the corporate brochure, CSR report and annual report for the convenience of stakeholders	B
6. Risk management	6-1. Companywide risk management structure	Risk Management Committee / Risk Evaluation Committee	Launch risk management employing the PDCA cycle by formulating risk response plans for each critical issue	Conduct annual reviews on Companywide critical issues and appoint responsible person and organization to each issue, having them formulate risk response plans that have to be deliberated at the Risk Evaluation Committee; the plans approved by the committee will then be implemented and the status of these plans reported to the committee in a periodic manner / Utilize risk management system established at each overseas region to prepare biannual reports on the status of risk response plan implementation for review by the committee / The status of risk management activities undertaken by Group members worldwide and their risk management policies are reported annually to the Board of Directors after being discussed by the committee	B
	6-2. Enhance Business Continuity Management (BCM)	BCM Countermeasure Subcommittee (a special subcommittee operating under the Risk Evaluation Committee)	Formulate business continuity plans (BCPs) for production line for each mainstay product / Conduct annual disaster drills aimed at practicing collaboration between locations (once a year)	Continued to improve the quality of first emergency response through the update of response plans, the implementation of earthquake drills and the preparation of disaster response manuals / The BCM Countermeasure Subcommittee, a cross organizational team launched in April 2013, has developed comprehensive Business Continuity Plans (BCPs) aimed at restoring capacity to produce priority items and ensuring business continuity if a mega earthquake were to strike the Company's domestic facilities. The team also formulated structural reinforcement plans for the facilities at each location to ensure greater earthquake resistance and undertook the analysis of and devising of countermeasure against risks associated with supply chains and information systems while considering the possibility of designating substitute facilities to offset the depletion of production capabilities due to disaster. Issues have been clarified through these activities and the subcommittee will continue to upgrade countermeasures / Efforts are also under way to secure greater responsiveness to natural disasters overseas, country risk abroad and cyber attacks in Japan and overseas as well as pandemics, all of which may trigger the disruption of the Company's operations. From 2015 onward, the Company will step up its BCM initiatives aimed at countering these risks	
7. Social contribution	7-1. Contribution to local communities	Legal & Intellectual Property Department (General Affairs Department) Production plant (Administration Section)	Meeting with local residents for the exchange of opinions (once a year or more) / summer festivals (once a year) / Voluntary cleanup activities at the local areas (twice a year)	Regularly hold meetings with local residents for the exchange of opinions (four meetings were held in fiscal 2014 attended by 45 people in total) / Welcomed elementary and junior high school students to plant tours while hosting "Open House Events" for families of associates wishing to see worksites (such events were held on 41 occasions on a Groupwide basis during fiscal 2014, with 2,019 attendees in total) / Sponsoring summer festivals every year (such festivals were held at six domestic locations in fiscal 2014 with a total of 7,398 people participating) / Local voluntary cleanup activities are undertaken by associates regularly (such activities were held 10 times in fiscal 2014 with a total of 467 associates participating) / Local greenery development activities are undertaken regularly (such activities were held seven times in fiscal 2014 with 140 associates participating in total)	B
8. CSR promotion structure	8-1. Structure for developing CSR activities inside the Group	Corporate Branding Office		CSR activities are led by the Corporate Brand Management team under the recognition of "CSR is indispensable for corporate brand management and an essential for continuing our business operations" / Each relevant section and committee sets targets and evaluates achievements on a separate basis. The Company recognizes that those initiatives must be integrated and promoted on a Groupwide basis in the future	B
	8-2. Structure for developing CSR activities involving suppliers	Purchasing Division		Work to nurture more favorable partnerships with suppliers, strictly comply with relevant laws and regulations and the principles of fairness and equity in conducting business transactions / Revised the Green Purchasing Guidelines in February 2012 to step up green procurement efforts / Launched tracking surveys to watch for "conflict minerals" entering supply chains in line with a policy of ensuring parts and material procurement that gives due consideration to the global environment and human rights protection	

Environmental Targets for Fiscal 2014 and Results Achieved

R&D	Initiatives	Promotion of products containing no substances of concern (SOCs)	Medium- and long-term Targets	Complete the conversion to lead-free sintered material by 2020 (for local and bullet train lines)	
	Targets for Fiscal 2014		Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> • Further promote a changeover to the lead-free sintered material for applicable categories of rolling stock • Develop lead-free materials that suit for other categories of rolling stock 	Completed the development of a lead-free sintered material (not applicable to certain categories of rolling stock) Promoted a changeover of conventional materials to a lead-free material Lead-free rate is 46% as of fiscal 2014	<ul style="list-style-type: none"> • Further promote a changeover to the lead-free sintered material for applicable categories of rolling stock • Develop lead-free materials that suit for other categories of rolling stock 	
Production	Initiatives	Reduction of total CO ₂ emissions at production plants in Japan	Medium- and long-term Targets	Improve CO ₂ intensity more than 1%	
		Continue ISO 14001-related activities and improve environmental management system		Continue to enhance environmental activities	
		Promotion of zero-emission activities at production sites: eliminate direct landfill disposal		Maintain zero emissions	
	Targets for Fiscal 2014		Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> • Improve CO₂ intensity more than 1% every year 	Improved CO ₂ intensity 8.7% compared with fiscal 2014 through a changeover of oil fired boilers to heat pumps and the application of heat-insulating coatings to building rooftops	<ul style="list-style-type: none"> • Improve CO₂ intensity more than 1% compared with fiscal 2013 	p. 7
		<ul style="list-style-type: none"> • Firmly root ISO 14001 in operations and steadily renew certifications 	Renewed the ISO 14001 certifications at six sites, including Akebono Corporation (Suzhou) in China	<ul style="list-style-type: none"> • Continue to firmly root ISO 14001 in operations and steadily renew certifications 	p. 36
		<ul style="list-style-type: none"> • Maintain zero emissions; generate no direct landfill disposal 	<ul style="list-style-type: none"> • Maintained zero emissions; generate no direct landfill disposal 	<ul style="list-style-type: none"> • Continue to maintain zero emissions; generate no direct landfill disposal 	
Environmental Education	Initiatives	Environmental training center	Medium- and long-term Targets	Nurture human resources to disseminate environmental preservation methods to locations nationwide through training programs implemented at Environmental Dojo	
	Targets for Fiscal 2014		Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> • Get feedback from the trainees and reflect it in the program 	<ul style="list-style-type: none"> • In response to comments that the program was overly technical, we introduced simpler experiments, such as making the volume of CO₂ gas visible by collecting it in plastic bags, in this way offering a greater degree of choice to the trainees • Started introducing the online education program implemented at ABCT (United States) to Japan 	<ul style="list-style-type: none"> • Get feedback from the trainees and reflect it in the program 	

*1 Matters regarding safety and crisis management (business continuity plan) are presented on "CSR Promotion Status"

*2 Global Automotive Declarable Substance List

*3 International Material Data System used by the automobile industry to report data on materials

Environmental Targets for Fiscal 2014 and Results Achieved

Logistics	Initiatives	Response to revised Energy Conservation Law (energy saving obligation of cargo owners)	Medium- and long-term Targets	Reduce unit energy consumption 1% on a year-on-year basis	
		Targets for Fiscal 2014	Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> Continue efforts to reduce unit energy consumption 1% on a year-on-year basis 	<p>Improved unit energy consumption 2.5% compared with fiscal 2013 (from 0.243 to 0.273).</p> <p><Improvements></p> <ul style="list-style-type: none"> Eco-friendly driving activities and seminars. Introduced the real-time management system of truck operations 	<ul style="list-style-type: none"> Continue efforts to reduce unit energy consumption 1% or more on a year-on-year basis 	p. 41

Purchasing	Initiatives	Promotion of green purchasing	Medium- and long-term Targets	Establish structure that ensures purchasing activities in line with the Green Purchasing Guidelines	
		Targets for Fiscal 2014	Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> Revise supplier quality management (SQM) standard manuals 	<ul style="list-style-type: none"> Conducted research in tandem with suppliers into the possibility of materials that use fewer environmental impact substances and require lower energy input with the aim of making concrete proposals for new material development Carried out the following revisions to SQM standard manuals to ensure the greater understanding of suppliers with regard to the Company's approach to environmental impact substance reduction <ul style="list-style-type: none"> Enhanced GADSL*² explanations Provided clearer descriptions of procedures for the handling of environmental impact substances 	<ul style="list-style-type: none"> Encourage suppliers to upgrade their environmental management systems Continue supply chain survey using IMDS*³ 	p. 40

Production Engineering	Initiatives	Promotion of resource-saving design	Medium- and long-term Targets	Develop manufacturing facilities that are reusable, achieving a greater yield ratio, energy saving and eco-friendly operations, thereby realizing environmentally friendly manufacturing	
		Targets for Fiscal 2014	Results Achieved in Fiscal 2014	Plans for Fiscal 2015 and After	Related Pages
		<ul style="list-style-type: none"> Further enhance energy-saving and resource-saving technologies 	<ul style="list-style-type: none"> Introduced five next-generation manufacturing units that use 50% less energy during the thermoforming and heating stages of the friction material production process 	<ul style="list-style-type: none"> Further enhance energy-saving and resource-saving technologies 	p. 21

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Environmental Preservation Costs

(millions of yen)

Environmental Preservation Costs			FY2012		FY2013		FY2014	
Category		Major Initiatives	Investment	Costs	Investment	Costs	Investment	Costs
Main business segment	Pollution prevention	Prevention of air, water and noise pollution	37	241	71	204	35	316
	Global environmental preservation	Prevention of global warming and ozone depletion	145	84	54	59	49	103
	Resource recycling	Reduction, disposition and recycle of industrial waste	0	186	0	188	0	212
Upstream and downstream		Recycling and reuse of products and their packing materials	0	-3	0	0	0	-2
Administrative		Environmental education and environmental management system (EMS) related activities, including the acquiring of EMS certification	0	46	0	34	0	52
R&D		R&D of eco-friendly products	0	78	0	45	0	166
Social activities		Initiatives to improve the environment, including nature preservation, planting and cleaning activities	0	8	1	5	0	6
Recovery		Soil remediation and natural disaster recovery measures	0	0	0	0	0	0
Subtotal			182	640	126	535	84	853
Total			822		661		937	

Notes: 1. The scope of calculation for environmental preservation costs includes the following 10 bases:

Yamagata, Fukushima, Tatebayashi, Iwatsuki, Sanyo, ACW (including purchasing), R&D sections (including Ai-Ring), production engineering sections, Alocs and the R&D Centre.

2. Environmental preservation costs are the amount spent for such activities as operation and maintenance of environment preservation facilities.

3. Value of investment is amount invested on introduction of environment preservation facilities.

Major Quantitative Effects

(millions of yen)

Quantitative Effects (reduction from the previous year)				
Major Items		FY2012	FY2013	FY2014
Global warming prevention (CO ₂ reduction)	t-CO ₂	-1,900	700	3,200
Reduction of industrial waste generated	t	3,100	500	2,800
Reduction of industrial waste disposed of in landfills	t	0	0	0
Reduction of water usage level	1,000m ³	0	10	-50

Economic Effects of Environmental Preservation Measures			
Effect	FY2012	FY2013	FY2014
Income from recycling and others	68	87	84
Cost reduction through energy saving, VA* and VE**	162	181	299
Decrease of waste disposal costs	71	47	121
Total	302	315	504

Notes: *1 The scope of calculation of quantitative effects and economic effects is the same as that used for environmental preservation costs and includes 10 operations.

*2 Values with a plus sign indicate a reduction. In addition, values have been retroactively adjusted accompanying the change in scope of calculation.

*3 Figures indicating economic effects for fiscal 2012 do not add up to 302 due to rounding.

*Value Analysis

**Value Engineering

Fiscal 2014 Emission Volume of PRTR Designated Chemical Substances

Unit: Tons/Year

Name of Substance*1	Amount Handled		Amount Emitted				Amount Transported				Amount Removed Through Proper Removal Methods		Amount Consumed (Attached To Products)	
			Atmosphere		Rivers		Landfill		Recycled					
	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014
Antimony and its compounds	81.6	80.6	0.0	0.0	0.0	0.0	0.0	0.0	11.6	5.3	0.0	0.0	70.0	75.3
Xylene	6.6	6.3	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	6.4	6.0	0.0	0.0
Trivalent chromium compounds	23.6	26.8	0.0	0.0	0.0	0.0	0.0	0.0	3.4	1.5	0.0	0.0	20.2	25.3
Chlorobenzene	2.8	2.1	2.8	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Triethylamine	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.4	0.0	0.0
Toluene	7.5	10.3	7.5	10.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nickel compounds*2	12.7	11.2	0.0	0.0	0.0	0.0	0.0	0.0	5.6	4.3	0.0	0.0	7.1	6.9
Phenol	33.2	32.3	0.0	0.0	0.0	0.0	0.0	0.0	2.9	1.9	30.3	30.4	0.0	0.0
Hexamethylene tetramine	116.3	113.8	0.0	0.0	0.0	0.0	0.0	0.0	10.8	7.7	105.5	106.1	0.0	0.0
Boron compounds	1.7	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	1.4	1.7
Manganese and its compounds	7.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.0	6.2	5.9
Molybdenum and its compounds	6.9	6.7	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.5	0.0	0.0	5.9	6.2
Total	301.3	299.9	10.5	12.7	0.0	0.0	0.0	0.0	36.4	22.0	143.6	143.9	110.8	121.3

*1 The scope of calculation covers all of Akebono's domestic production plants. In principle, substances for which the amount handled is less than one ton per year are not included; however, substances marked by double asterisks (*2) have been included in the chart and amounts exceeding 0.5 ton per year are indicated.

Environmental Data by Location (main domestic Group members)

Akebono Brake Yamagata Manufacturing Co., Ltd. Production item: Disc brake pads

Acquired the ISO14001 certification in March 2000

◆ Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard	FY2013		FY2014	
			Regulatory Limit	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	0.1	0.035	0.035	0.047	0.034
	NOx	ppm	950	830	810	740	685
	SOx	m ³ N/h	7.91	—	0.7	—	0.7

◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8 ~ 8.6	—	7.2	6.9	7.4	7
	BOD	mg/l	25	20	21	5.8	4	1.9
	Suspended solids	mg/l	60	50	17	5.1	17	10.2
	Oil (n-hexane extract)	mg/l	5	—	4.2	1.8	2.1	1.3
	Colon bacilli	Number/cm ³	—	3,000	—	—	—	—
	Ammonia, ammonium compound, nitrite and nitrates	mg/l	100	—	9.9	6.1	10	5.1

◆ Emission Volume of PRTR Designated Chemical Substances

Unit: Tons/Year

Name of Substance	Amount Handled		Amount Emitted				Amount Transported				Amount Removed through Proper Removal Methods	Amount Consumed (Attached to Products)		
			Atmosphere		Rivers		Landfill		Recycled					
	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014
Antimony and its compounds	31,100	27,100	0	0	0	0	0	0	3,700	3,200	0	0	27,400	23,900
Xylene	6,600	6,300	200	300	0	0	0	0	0	0	6,400	6,000	0	0
Chromium and Trivalent chromium compounds	7,800	5,700	0	0	0	0	0	0	900	700	0	0	6,900	5,000
Hexamethylene tetramine	58,100	55,000	0	0	0	0	0	0	7,000	6,600	51,100	48,400	0	0
Triethylamine	1,400	1,400	0	0	0	0	0	0	0	0	1,400	1,400	0	0
Toluene	3,300	3,000	3,300	3,000	0	0	0	0	0	0	0	0	0	0
Phenol	14,500	13,500	0	0	0	0	0	0	1,700	1,600	12,800	11,900	0	0
Manganese and its compounds	7,000	6,700	0	0	0	0	0	0	800	800	0	0	6,200	5,900
Molybdenum and its compounds	3,300	3,200	0	0	0	0	0	0	400	400	0	0	2,900	2,800
Total	133,100	121,900	3,500	3,300	0	0	0	0	14,500	13,300	71,700	67,700	43,400	37,600

Environmental Data by Location (main domestic Group members)

Akebono Brake Fukushima Manufacturing Co., Ltd. Production item: Brake linings

Acquired the ISO14001 certification in March 2000

◆ Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard	FY2013		FY2014	
			Regulatory Limit	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	—	0.017	0.013	0.028	0.017
	NOx	ppm	—	87	74	60	53
	SOx	m ³ N/h	0.87	0.009	0.006	0.009	0.006

◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8 ~ 8.6	—	7.3	7.1	7.3	7.1
	BOD	mg/l	40	—	2.5	1.6	1.9	1.5
	Suspended solids	mg/l	70	—	40	16.4	32	13.5
	Oil (n-hexane extract)	mg/l	10	—	Less than 1.0	Less than 1.0	Less than 1.0	Less than 1.0
	Colon bacilli	Number/cm ³	—	3,000	Not detected	Not detected	Not detected	Not detected

◆ Emission Volume of PRTR Designated Chemical Substances

Unit: Tons/Year

Name of Substance	Amount Handled		Amount Emitted				Amount Transported				Amount Removed through Proper Removal Methods	Amount Consumed (Attached to Products)		
			Atmosphere		Rivers		Landfill		Recycled					
	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014
Antimony and its compounds	50,500	53,500	0	0	0	0	0	0	7,900	2,100	0	0	42,600	51,400
Chromium and Trivalent chromium compounds	15,800	21,100	0	0	0	0	0	0	2,500	800	0	0	13,300	20,300
Hexamethylene tetramine	58,200	58,800	0	0	0	0	0	0	3,800	1,100	54,400	57,700	0	0
Toluene	2,400	5,200	2,400	5,200	0	0	0	0	0	0	0	0	0	0
Nickel	700	500	0	0	0	0	0	0	100	0	0	0	600	500
Phenol	18,700	18,800	0	0	0	0	0	0	1,200	300	17,500	18,500	0	0
Molybdenum and its compounds	3,600	3,500	0	0	0	0	0	0	600	100	0	0	3,000	3,400
Boron compounds	1,700	1,700	0	0	0	0	0	0	300	100	0	0	1,400	1,600
Total	151,600	163,100	2,400	5,200	0	0	0	0	16,400	4,500	71,900	76,200	60,900	77,200

Figures presented above exclude substances for which the annual handling volume is less than 1 ton. However, nickel compounds and other substances designated as Class I specified compounds are included, if their annual handling volume amounts to 500 kg or more. Figures presented above may not match totals presented in the “Product Life Cycles and Environmental Impact Mass Balance” section of the AKEBONO REPORT 2015 as they are rounded off to the nearest whole number.

Environmental Data by Location (main domestic Group members)

Akebono Brake Iwatsuki Manufacturing Co., Ltd.

Production items: Disc brakes, drum brakes, shoe assemblies and plate assemblies

Acquired the ISO14001 certification in March 2002

◆ Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard	FY2013		FY2014	
			Regulatory Limit	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	0.3	Not applicable, since heavy oil-fed boilers have been abolished.		Not applicable, since heavy oil-fed boilers have been abolished.	
	NOx	ppm	180				
	SOx	m ³ N/h	0.95				

◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8 ~ 8.6	—	7.7	7.4	7.4	7.2
	BOD	mg/l	25	20	23	18.7	25	18.7
	COD	kg/day	—	—	18	15.3	20	14.7
	Suspended solids	mg/l	60	50	10	4.9	11	4.9
	Oil (n-hexane extract)	mg/l	5	—	Not detected	Not detected	Not detected	Not detected
	Total nitrogen	kg/day	120	—	44	38.7	45	32.5
	Total phosphorus	kg/day	16	—	1.4	0.6	1.8	0.5
	Colon bacilli	Number/cm ³	—	3,000	170	38	1,500	250
	Total chromium	mg/l	2	—	Not detected	Not detected	Not detected	Not detected
	Fluorine	mg/l	8	—	0.4	0.3	0.5	0.3
	Zinc	mg/l	2	—	0.8	0.5	2	0.7

◆ Emission Volume of PRTR Designated Chemical Substances

Unit: Tons/Year

Name of Substance	Amount Handled		Amount Emitted				Amount Transported				Amount Removed through Proper Removal Methods		Amount Consumed (Attached to Products)	
			Atmosphere		Rivers		Landfill		Recycled					
	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014
Chlorobenzene	1,100	0	1,100	0	0	0	0	0	0	0	0	0	0	0
Nickel compounds	12,000	10,700	0	0	0	0	0	0	5,500	4,300	0	0	6,500	6,400
Total	13,100	10,700	1,100	0	0	0	0	0	5,500	4,300	0	0	6,500	6,400

Figures presented above exclude substances for which the annual handling volume is less than 1 ton. However, nickel compounds and other substances designated as Class I specified compounds are included, if their annual handling volume amounts to 500 kg or more.

Figures presented above may not match totals presented in the “Product Life Cycles and Environmental Impact Mass Balance” section of the *AKEBONO REPORT 2015* as they are rounded off to the nearest whole number.

In step with the enactment of the Sixth Total Emission Control Standards, regulatory limits for emissions at the Hanyu facilities (total nitrogen and total phosphorus) and Iwatsuki facilities (COD, total nitrogen and total phosphorus) were revised. Accordingly, regulatory limits presented above are as of fiscal 2009.

Environmental Data by Location (main domestic Group members)

Akebono Brake Industry Co., Ltd. Headquarters (Hanyu-City, Saitama Prefecture)

Acquired the ISO14001 certification in March 2003

			Standard		FY2013		FY2014	
◆ Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m³N	0.05		0.007	0.005	0.003	0.002
	NOx	ppm	600		185	180	192	184
	SOx	m³N/h	0.63		—	—	—	—
◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8 ~ 8.6	—	7.8	7.5	7.9	7.6
	BOD	mg/l	25	20	3.7	2.0	3.0	1.6
	COD	kg/day	7.4	Subject to total emission control	0.3	0.2	*	*
	Suspended solids	mg/l	60	50	Not detected	Not detected	Not detected	Not detected
	Oil (n-hexane extract)	mg/l	5	—	Not detected	Not detected	Not detected	Not detected
	Total nitrogen	kg/day	8.3	Subject to total emission control	—	3.7	*	*
	Total phosphorus	kg/day	1.23	Subject to total emission control	—	0.17	*	*
	Colon bacilli	Number/cm³	—	3,000	58	7.5	*	*
	Fluorine	mg/l	8	—	Not detected	Not detected	Not detected	Not detected
	Ammonia, ammonium compound, nitrite and nitrates	mg/l	100	—	—	2.3	—	—

* Because effluent outlets were switched from rivers to sewage lines, the measurement of substances subject to total emission control and colon bacilli was discontinued in fiscal 2014.

Akebono Brake Industry Co., Ltd. Tatebayashi Foundry Production item: Casting parts for brakes

Acquired the ISO14001 certification in March 2010

			Standard		FY2013		FY2014	
◆ Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m³N	0.2		—	Less than 0.0044	—	Less than 0.0044
◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8 ~ 8.6	—	—	6.8	—	6.8
	BOD	mg/l	25	20	—	Less than 5	—	Less than 5

Effluent from combined sewage treatment tanks are subject to annual measurements.

Environmental Data by Location (main domestic Group members)

Akebono Brake Sanyo Manufacturing Co., Ltd. Kibi Daiichi Plant

Production items: Disc brakes, drum brakes, shoe assemblies and plate assemblies

Acquired the ISO14001 certification in May 2001

Akebono Brake Sanyo Manufacturing Co., Ltd. Kibi Daiini Plant

Production items: Wheel cylinders

Acquired the ISO14001 certification in March 2003

◆ Air	Substances	Unit	Standard	FY2013		FY2013	
			Regulatory Limit	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
(Air Pollution Control Law and Prefectural ordinances)	Dust and soot	g/m ³ N	—	—		—	
	NOx	ppm	—				
	SOx	m ³ N/h	—				

◆ Water	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	FY2013		FY2013	
					Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
(Water Pollution Control Law and Prefectural ordinances)	pH	—	6.0 ~ 8.0	—	7.9	7.8	7.9	7.7
	BOD	mg/l	15	6	4.2	1.2	5.5	2.4
	COD	mg/l	15	8	6.7	3.4	7.3	4.8
	Suspended solids	mg/l	30	10	2	0.3	6.0	2.3
	Oil (n-hexane extract)	mg/l	5	—	0	0	0.6	0.1
	Total phosphorus	mg/l	120	60	2.4	1.3	8.1	5.5
	Total phosphorus	mg/l	2	2	0.1	0.1	6.7	4.4
	Colon bacilli	Number/cm ³	—	1,000	Not detected	Not detected	9	6

◆ Emission Volume of PRTR Designated Chemical Substances

Unit: Tons/Year

Name of Substance	Amount Handled		Amount Emitted				Amount Transported				Amount Removed through Proper Removal Methods		Amount Consumed (Attached to Products)	
			Atmosphere		Rivers		Landfill		Recycled					
	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014	FY2013	FY2014
Chlorobenzene	1,700	2,100	1,700	2,100	0	0	0	0	0	0	0	0	0	0
Toluene	1,800	2,100	1,800	2,100	0	0	0	0	0	0	0	0	0	0
Total	3,500	4,200	3,500	4,200	0	0	0	0	0	0	0	0	0	0

Due to repair work underway at the joint wastewater treatment facilities of the industrial complex, effluent is currently being treated at provisional treatment facilities. Because of this, Akebono Brake Sanyo Manufacturing Co., Ltd.'s facilities have been temporary exempted from complying with regulatory standards stipulated by a pollution prevention agreement with Soja City. Instead, standards set forth in the Water Pollution Control Law (oil = 5mg/l; total nitrogen = 120mg/l) are being applied until the completion of repairs.