



AKEBONO REPORT 2016

DATA BOOK

CSR Promotion Status(fiscal 2015)

■ 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		Establish and implement a system for checking on market needs and development goals at commencement of basic development / Establish and implement a system for checking on customer needs at the start of application development / 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	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 / Establish and implement a system to check the impact on products due to usage conditions and environment, and to verify failure mode using FMEA (failure mode and effects analysis) and FTA (fault tree analysis) to determine its usefulness prior to supplying them to customers / 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 / Develop and implement a global defect information network to achieve rapid dispersal of information to bases worldwide	
	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 / Created and implemented a system for manufacturing facility development and global production to ensure quality management / Maintaining the ISO9001 and ISO/TS16949 certifications. Currently working to strengthen the quality management system, including the revised standard ISO9001:2015	
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 three 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 / Implemented 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 / Held global management training programs for managers from Group locations worldwide in response to globalization (twice a year) / Education programs for associates tailored to their rank and job roles are implemented (Conducted rank-specific training: new recruit training conducted once in spring and once in autumn. Conducted one training for second year, third year, and seventh year training and newly appointed team leaders, one for newly appointed assistant managers, one for newly appointed senior staff, and one for new managers).	

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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 ISO14001 certifications Environmental education	Renewed the ISO14001 certifications at Yamagata Manufacturing, AKBT (Thailand) as well as two other locations / Began providing online educational programs with regard to environmental activities / Continued tree-planting activities in consideration of vegetation.	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 2015, CO ₂ emissions per unit of sales on a global basis declined 5.1% 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)	CO ₂ emissions from logistics operations declined 4.8% year on year through the introduction of a system for the real-time management of truck operations and other measures.	
	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	
	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 2015 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	
	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 (five times per year) / Compliance understanding tests (once a year) / Provision of training sessions themed on relevant laws (six occasions per year) / Workplace discussion (once a year)	Compliance Committee meetings are held five times a year and relevant issues and initiatives are discussed / Conducted “compliance proficiency test” for all domestic associates to reinforce their knowledge of compliance (once) / Provide compliance training sessions (six times per year) to raise associates’ awareness / Provided compliance training sessions (six times per year) and a workplace discussion as a measure for compliance month to raise associates’ awareness	B
	4-2. Compliance with competition laws	Compliance Committee	Provision of training sessions themed on relevant laws (11 occasions per year)	Created guidelines on prevention of cartels and bid rigging, and promoted them throughout the Company / The Company raises alerts, regularly sharing data on the latest cases of legal violations through intranet / Conducted training on Japan’s “Act Against Delay in Payment, etc., to Subcontractors” (11 times) and promoted awareness raising activities	
	4-3. Corruption prevention	Compliance Committee		Created bribery prevention guidelines and raised awareness of them in Japan and overseas.	
	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 (once a year)	
	4-6. Intellectual property protection	Legal & Intellectual Property Department		Patent guarantee (non infringement of other companies’ patents): patent guarantee for products is conducted in Japan at process review stages 2 and 4 using patent examination sheets. The same system is used overseas (U.S. and Europe) / Development Patent Committee: Continued efforts to evaluate and register newly obtained published patents of other companies for each working group meeting during development (Check other companies’ trends and stay aware of other companies’ patents)	
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

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Category	Initiatives	Responsible Organization	Numerical targets (if applicable)	Structure for Promotion, Action taken and Degree of Attainment	Self-evaluation
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 countermeasures 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 significantly clarified through these activities and the subcommittee will continue to upgrade countermeasures / In addition to natural disasters, the Company's operations could also be interrupted by factors such as country risks, cyber-attacks, and pandemics. The Company will expand its BCM initiatives to cover these risks as well	
7. Social contribution	7-1. Contribution to local communities	General Affairs Department	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 (six meetings were held in fiscal 2015 attended by 47 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 30 occasions on a Groupwide basis during fiscal 2015, with 1,144 attendees in total). / Sponsoring summer festivals every year (such festivals were held at six domestic locations in fiscal 2015 with a total of 7,262 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 141 associates participating in total)	C
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 2015 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 trains)
	Targets for Fiscal 2015		Results Achieved in Fiscal 2015	
	<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 		<ul style="list-style-type: none"> Lead-free rate is 55% as of fiscal 2015 (46% the previous fiscal year) 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 	
	Plans for Fiscal 2016 and After			
	<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 ISO14001-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 2015		Results Achieved in Fiscal 2015	
	<ul style="list-style-type: none"> Improve CO₂ intensity more than 1% every year 		Improved CO ₂ emission intensity by 5.1% compared with fiscal 2014 through a changeover of oil fired boilers to heat pumps and the application of thermal barrier coatings to building rooftops	
	<ul style="list-style-type: none"> Firmly root ISO14001 in operations and steadily renew certifications 		Renewed the ISO14001 certifications at four sites, including Akebono Brake (Thailand) Co., Ltd.	
	<ul style="list-style-type: none"> Maintain zero emissions; generate no direct landfill disposal 		Maintained zero emissions; generate no direct landfill disposal	
	Plans for Fiscal 2016 and After			
	<ul style="list-style-type: none"> Collect information globally on CO₂ reducing measures and energy-saving technologies Continue to firmly root ISO14001 in operations and steadily renew certifications 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 training center
	Targets for Fiscal 2015		Results Achieved in Fiscal 2015	
	<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 	
	Plans for Fiscal 2016 and After			
	<ul style="list-style-type: none"> Get feedback from the trainees and reflect it in the program 			

Refer to the following for performance data for each principal company.
 Akebono Environmental Data by Principal Company in Japan(PDF download 1,065 KB, 5 pages)

Environmental Targets for Fiscal 2015 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 2015		Results Achieved in Fiscal 2015	
	Continue efforts to reduce unit energy consumption 1% on a year-on-year basis		Reduced CO ₂ emissions from logistics by 4.8% on a year-on-year basis <Improvements> <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

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 2015		Results Achieved in Fiscal 2015	
	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*1 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*2

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 2015		Results Achieved in Fiscal 2015	
	<ul style="list-style-type: none"> Further enhance energy-saving and resource-saving technologies 		<ul style="list-style-type: none"> Completed installation of next-generation facilities at Fukushima Manufacturing to realize a 70% improvement to energy efficiency of sintering process in metal disk production 	
				<ul style="list-style-type: none"> Further enhance energy-saving and resource-saving technologies

*1 Global Automotive Declarable Substance List

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

Refer to the following for performance data for each principal company.

Akebono Environmental Data by Principal Company in Japan(PDF download 1,065 KB, 5 pages)

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	FY2014		FY2015	
			Regulatory Limit	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	0.1	0.047	0.034	0.044	0.032
	NOx	ppm	950	740	685	790	760
	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
					FY2014	FY2015	FY2014	FY2015
	pH	—	5.8~8.6	—	7.4	7	7.5	7.1
	BOD	mg/l	25	20	4	1.9	11.9	2.9
	Suspended solids	mg/l	60	50	17	10.2	5.5	3.8
	Oil (n-hexane extract)	mg/l	5	—	2.1	1.3	2.2	1.5
	Colon bacilli	Number/cm ³	—	3,000	—	—	—	—
	Ammonia, ammonium compound, nitrite and nitrates	mg/l	100	—	10	5.1	7.6	6.0

◆ 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		FY2014	FY2015	FY2014	FY2015
	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015
Antimony and its compounds	27,100	25,200	0	0	0	0	0	0	3,200	3,000	0	0	23,900	22,200
Xylene	6,300	6,700	300	300	0	0	0	0	0	0	6,000	6,400	0	0
Chromium and Trivalent chromium compounds	5,700	7,200	0	0	0	0	0	0	700	900	0	0	5,000	6,300
Hexamethylene tetramine	55,000	56,800	0	0	0	0	0	0	6,600	6,800	48,400	50,000	0	0
Triethylamine	1,400	1,400	0	0	0	0	0	0	0	0	1,400	1,400	0	0
Toluene	3,000	2,900	3,000	2,900	0	0	0	0	0	0	0	0	0	0
Phenol	13,500	21,200	0	0	0	0	0	0	1,600	2,500	11,900	18,700	0	0
Manganese and its compounds	6,700	7,300	0	0	0	0	0	0	800	900	0	0	5,900	6,400
Molybdenum and its compounds	3,200	3,600	0	0	0	0	0	0	400	400	0	0	2,800	3,200
Total	121,900	132,300	3,300	3,200	0	0	0	0	13,300	14,500	67,700	76,500	37,600	38,100

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		FY2014		FY2015	
			Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	—		0.028	0.017	0.012	0.009
	NOx	ppm	—		60	53	43	43
	SOx	m ³ N/h	0.87		0.009	0.006	0.006	0.0047

◆ Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	FY2014		FY2015	
					Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8~8.6	—	7.3	7.1	7.4	7.0
	BOD	mg/l	40	—	1.9	1.5	2.3	1.6
	Suspended solids	mg/l	70	—	32	13.5	22	11.3
	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					
	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015
Antimony and its compounds	53,500	48,000	0	0	0	0	0	0	2,100	7,700	0	0	51,400	40,300
Chromium and Trivalent chromium compounds	21,100	18,900	0	0	0	0	0	0	800	3,000	0	0	20,300	15,900
Hexamethylene tetramine	58,800	49,300	0	0	0	0	0	0	1,100	3,600	57,700	45,700	0	0
Toluene	5,200	4,000	5,200	4,000	0	0	0	0	0	0	0	0	0	0
Phenol	18,800	16,200	0	0	0	0	0	0	300	1,200	18,500	15,000	0	0
Molybdenum and its compounds	3,500	3,300	0	0	0	0	0	0	100	500	0	0	3,400	2,800
Boron compounds	1,700	1,900	0	0	0	0	0	0	—	300	0	0	1,700	1,600
Total	162,600	141,600	5,200	4,000	0	0	0	0	4,400	16,300	76,200	60,700	76,800	60,600

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 2016 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	FY2014		FY2015	
			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	—	7.4	7.2	7.6	7.1
	BOD	mg/l	25	20	25	18.7	25	14.3
	COD	mg/l	—	—	20	14.7	27	12.6
	Suspended solids	mg/l	60	50	11	4.9	7.5	4.0
	Oil (n-hexane extract)	mg/l	5	—	Not detected	Not detected	Not detected	Not detected
	Total nitrogen	mg/l	120	—	45	32.5	51	31.6
	Total phosphorus	mg/l	16	—	1.8	0.5	0.9	0.3
	Colon bacilli	Number/cm ³	—	3,000	1500	250	2500	324
	Total chromium	mg/l	2	—	Not detected	Not detected	Not detected	Not detected
	Fluorine	mg/l	8	—	0.5	0.3	Not detected	Not detected
	Zinc	mg/l	2	—	2	0.7	0.7	0.4

◆ 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		FY2014	FY2015	FY2014	FY2015
	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015
Nickel compounds	10,700	10,300	0	0	0	0	0	0	4,300	7,100	0	0	6,400	3,200
Total	10,700	10,300	0	0	0	0	0	0	4,300	7,100	0	0	6,400	3,200

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 2016 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

◆Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard		FY2014		FY2015	
			Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	0.05		0.003	0.002	less than 0.001	less than 0.001
	NOx	ppm	600		192	184	199	195
	SOx	m ³ N/h	0.63		—	—	—	—

◆Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard		FY2014		FY2015	
			Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8~8.6	—	7.9	7.6	8.0	7.7
	BOD	mg/l	25	20	3.0	1.6	1.2	1.2
	COD	kg/day	7.4	Subject to total emission control	※	※	※	※
	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	※	※	※	※
	Total phosphorus	kg/day	1.23	Subject to total emission control	※	※	※	※
	Colon bacilli	Number/cm ³	—	3,000	※	※	※	※
	Fluorine	mg/l	8	—	Not detected	Not detected	Not detected	Not detected
	Ammonia, ammonium compound, nitrite and nitrates	mg/l	100	—	—	—	—	—

* 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

◆Air (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard		FY2014		FY2015	
			Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
		g/m ³ N	0.2		—	less than 0.0044	—	less than 0.00098

◆Water (Water Pollution Control Law and Prefectural ordinances) Effluent from combined sewage treatment tanks are subject to annual measurements.	Substances	Unit	Standard		FY2014		FY2015	
			Average Daily Emissions during Operative Period	Average Daily Emissions	Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	5.8~8.6	—	—	6.8	—	6.7
	BOD	mg/l	25	20	—	less than 5	—	less than 5

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 (Air Pollution Control Law and Prefectural ordinances)	Substances	Unit	Standard		FY2014		FY2015	
			Regulatory Limit		Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	Dust and soot	g/m ³ N	—		—		—	
	NOx	ppm	—		—		—	
	SOx	m ³ N/h	—					

◆Water (Water Pollution Control Law and Prefectural ordinances)	Substances	Unit	Average Daily Emissions during Operative Period	Average Daily Emissions	FY2014		FY2015	
					Maximum Emissions	Average Emissions	Maximum Emissions	Average Emissions
	pH	—	6.0~8.0	—	7.9	7.7	7.9	7.7
	BOD	mg/l	15	6	5.5	2.4	1.2	0.45
	COD	mg/l	15.0	8	7.3	4.8	3.7	2.8
	Suspended solids	mg/l	30	10	6.0	2.3	1.0	0.33
	Oil (n-hexane extract)	mg/l	5	—	0.6	0.1	2.0	0.17
	Total nitrogen	mg/l	120	60	8.1	5.5	1.7	0.97
	Total phosphorus	mg/l	2	2	6.7	4.4	0.1	0.06
	Colon bacilli	Number/cm ³	—	1,000	9	6	0	0

◆ 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					
	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015	FY2014	FY2015
Chlorobenzene	2,100	2,100	2,100	2,100	0	0	0	0	0	0	0	0	0	0
Toluene	2,100	2,100	2,100	2,100	0	0	0	0	0	0	0	0	0	0
Total	4,200	4,200	4,200	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.