

JCIA Annual Report 2016

Reference Materials

As a supplement to the contents of *JCIA Annual Report 2016*, this pamphlet introduces various data and initiatives relating to the activities of the Japan Chemical Industry Association. Please read it together with *JCIA Annual Report 2016*.



Japan Chemical Industry Association

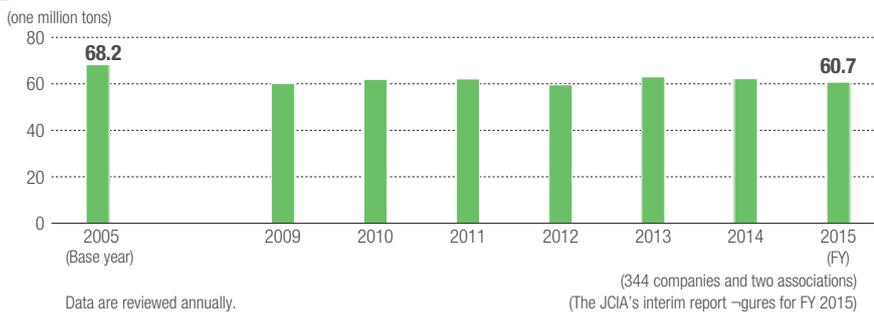
Contents

1-1 Environmental Protection (Prevention of Global Warming)	01	3-1 Industrial Health and Safety	09
1-2 Environmental Protection (Industrial Waste Reduction)	02	4-1 Distribution Safety	11
1-3 Environmental Protection (Reduction of Chemical Emissions)	03	5-1 Chemicals and Product Safety (Safety Assessment)	12
1-4 Environmental Protection (Prevention of Atmospheric Pollution and Water Pollution) ...	04	5-2 Chemicals and Product Safety (Information Supply)	13
1-5 Environmental Protection (Prevention of Soil and Ground Water Pollution, PCB)	05	6-1 Management System	14
1-6 Environmental Protection (Environmental Investment and Biodiversity)	06	7-1 Social Dialogue	15
2-1 Process Safety and Disaster Prevention (Efforts to Prevent Plant Accidents)	07	7-2 Dialogue with the Community	16
2-2 Process Safety and Disaster Prevention (Response to Possible Large-Scale Earthquake)	08	8-1 Members' Self-Assessment	17
		9-1 Responsible Care Verification	18

1-1

Environmental Protection (Prevention of Global Warming)

CO₂ Emissions Index

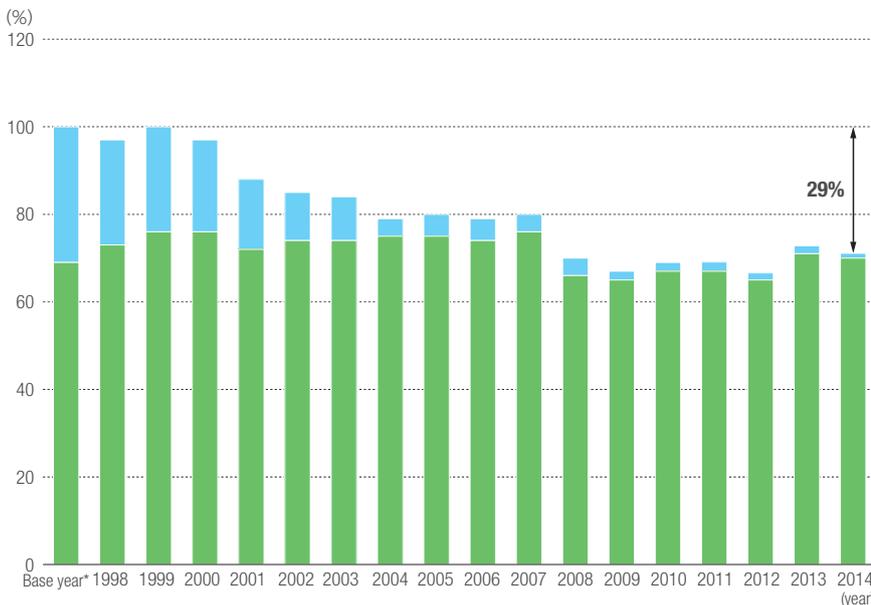


CO₂ Emissions Index

The "Commitment to a Low-carbon Society" activities by the Keidanren (Japan Business Federation) were launched in FY 2013. Compared with FY 2005, taken as the base year, CO₂ emissions have been reduced by 7,500,000 tons.

Reduction of Emissions of CO₂ and Four Alternatives to Freon

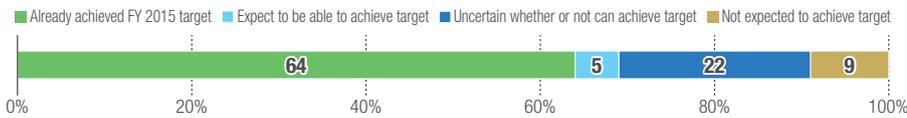
■ CO₂ emissions (10,000 tons/CO₂): Energy source CO₂ emissions
 ■ Estimated emissions in manufacture of HFCs, etc.: CO₂e* emissions of four alternatives to Freon
 * CO₂e (CO₂ equivalent): Corresponding value of CO₂ emissions



Reduction of Emissions of CO₂ and Four Alternatives to Freon

When the reduction of CO₂ emissions and the reduction of emissions in the manufacture of four alternatives to Freon(HFCs, PFCs, SF₆, NF₃) are combined,emissions in 2013 were down 29% from the base years (= 100%).

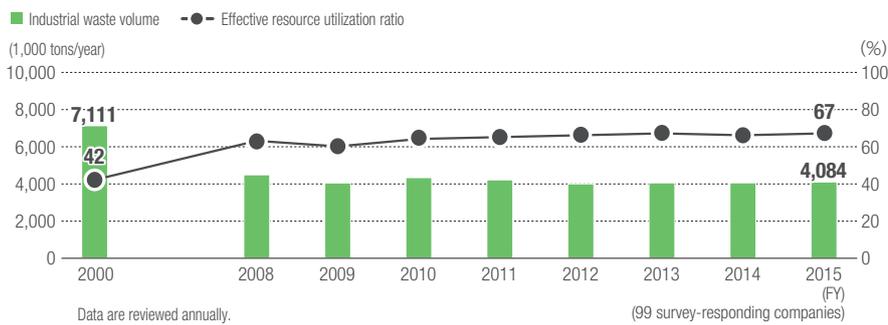
Progress in Achievement of FY 2015 Target for Final Disposal Volume



Progress in Achievement of FY 2015 Target for Final Disposal Volume

In accordance with the Keidanren (Japan Business Federation) Voluntary Action Plan on the Environment (Section on the Establishment of a Sound Material-Cycle Society), JCIA has set a new target since FY 2011 (a reduction in final disposal volume by about 65% from the FY 2000 level by FY 2015) and is making efforts to achieve that goal.

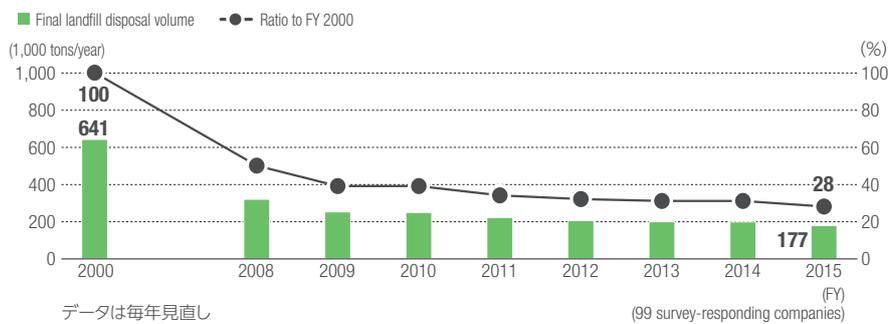
Industrial Waste Volume and Effective Resource Utilization Ratio



Industrial Waste Volume and Effective Resource Utilization Ratio

Industrial waste volume in FY 2015 was 4,084,000 tons, down 43% from the level in the base year of FY 2000. We are also making positive efforts to encourage sorting and reuse. The effective resource utilization ratio (the ratio to the volume of waste discharged by effectively used resources) increased from 42% in FY 2000 to 67% in FY 2015.

Final Landfill Disposal Volume



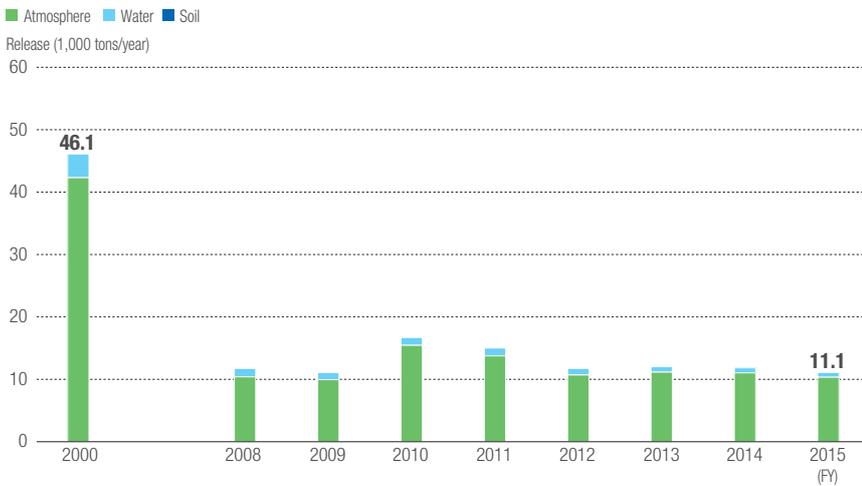
Final Landfill Disposal Volume

The final landfill disposal volume in FY 2015 was 177,000 tons, down 20,000 tons from FY 2014 and down 72% from the FY 2000 level. Furthermore, as well as reducing the final landfill disposal volume, in accordance with legal revisions member companies are strengthening their verification of the proper disposal of waste by, among other things, the issuance, recovery, and verification of industrial waste manifests and the inspection of final disposal sites.

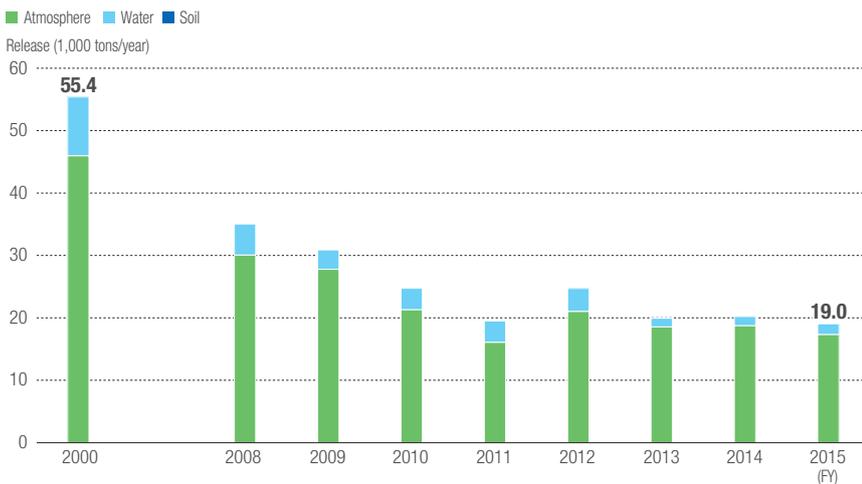
	Result of FY 2015	
	Relative to FY 2000	Relative to FY 2014
Industrial waste volume	Reduced by 43%	No change
Effective resource utilization ratio	Improved by 25 points	Improved by 1 point
Final disposal by JCIA members	Reduced by 72%	Reduced by 10%

Environmental Protection (Reduction of Chemical Emissions)

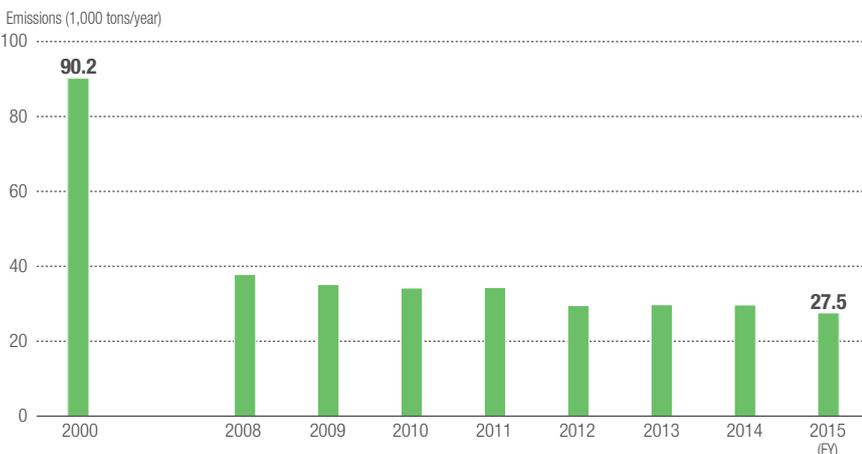
Emissions of PRTR Substances



Emissions of Voluntary Surveyed Substances



VOC Emissions



Emissions of PRTR* Substances

In FY 2015 Emissions of PRTR substances amounted to 11,100 tons, a reduction of about 76% from the FY 2000 level. Because the number of designated substances increased following a revision of the law, the volume of emissions temporarily increased in FY 2010, but since then the downward trend has continued. Emissions into the atmosphere accounted for 93% of the total, and emissions into water areas for 7%. No emissions to soil were reported.

* PRTR (Pollutant Release and Transfer Register): The PRTR system is designed to identify, collect and disseminate data on the amounts and sources of a variety of toxic chemicals released to the environment or transferred outside of facilities in the form of waste. PRTR Law: Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

Emissions of Voluntary Surveyed Substances

The emissions of voluntary surveyed substances was 19,000 tons, resulting in over 66% reduction compared to FY 2000. The breakdown of the emission quantities was 91% for emissions into the air and 9% for emissions into water areas. No emissions to soil were reported.

Note) Change in the number of substances voluntarily surveyed by JCIA:
 From FY 2000 to 2009:
 125 substances and 1 substance group*
 From FY 2010 to 2012:
 105 substances and 1 substance group*
 From FY 2013 to the current:
 89 substances and 1 substance group*
 * Chain hydrocarbons with up to 4 to 8 numbers of carbon atoms

VOC* Emissions

Member companies are making tremendous efforts to install equipment and improve processes for controlling emissions of VOCs.

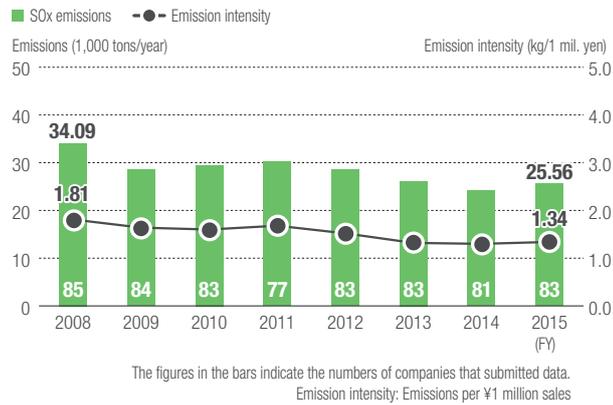
The VOC emissions in FY 2015 amounted to 27,500 tons, a 69% reduction compared with FY 2000 level, continuing a significant downward trend.

* VOC (volatile organic compound): VOC is a collective term for a wide variety of volatile organic compounds that turn into gas and enter the atmosphere, including toluene, xylenes and ethyl acetate.

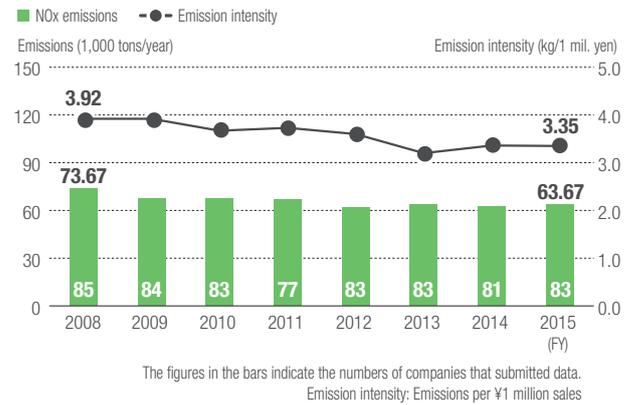
Environmental Protection (Prevention of Atmospheric Pollution and Water Pollution)

Member companies in Japan have significantly reduced their emissions of air and water pollutants. In particular, member companies not only comply with regulatory standards but also agreements with municipalities. They also set their own voluntary management criteria, which are more rigorous than government standards, to intensify their ongoing efforts to reduce emissions.

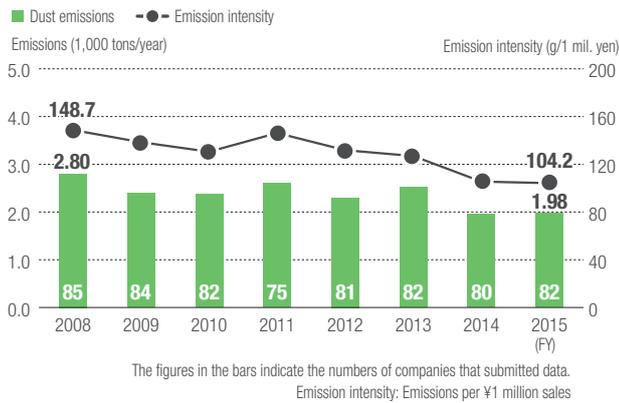
SOx Emissions



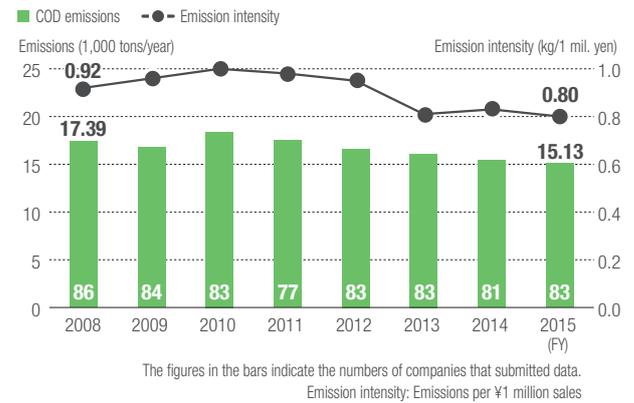
NOx Emissions



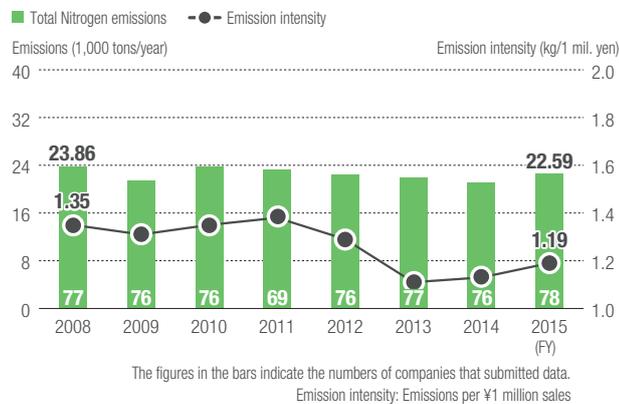
Dust Emissions



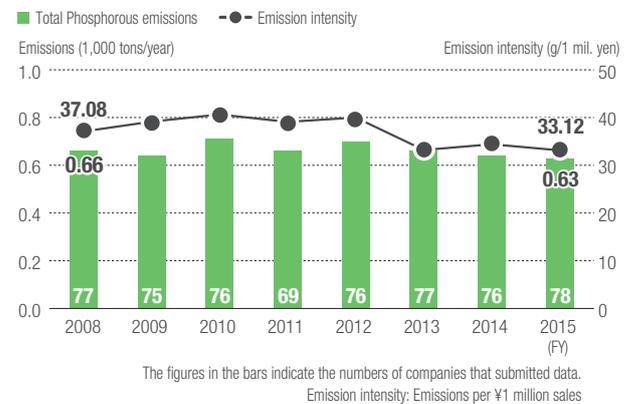
COD Emissions



Total Nitrogen Emissions

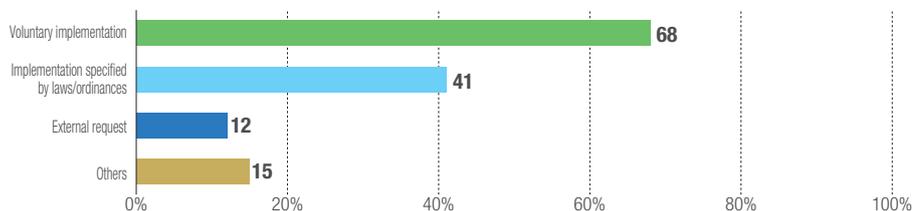


Total Phosphorous Emissions

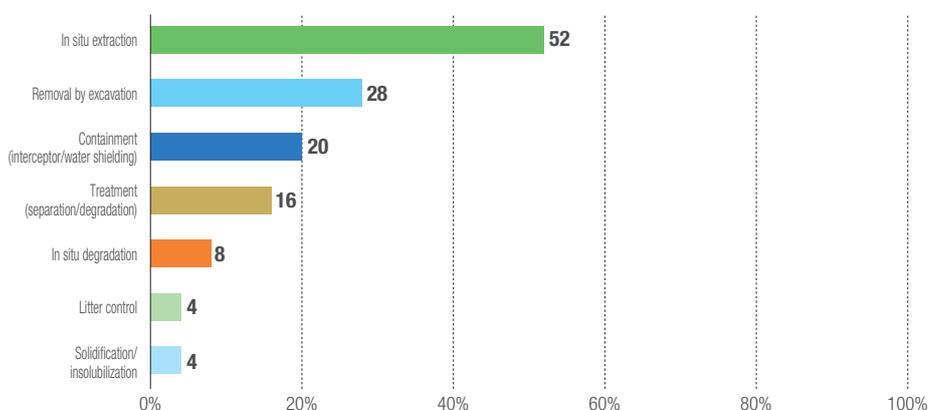


Soil and Ground Water Pollution

Reasons for Implementing an Investigation (Multiple answers allowed)



Countermeasures against Contamination (Multiple answers allowed)



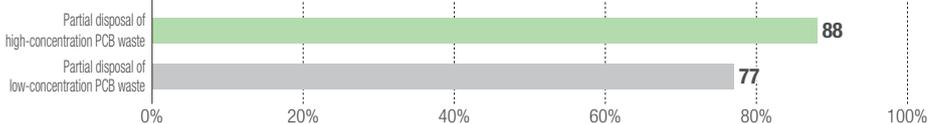
PCBs

State of Storage and Disposal of PCB Waste

Existence of PCB waste storage



Existence of disposal record in FY 2015



- Notes: 1. High-concentration PCB waste: Electric equipment, such as transformers and capacitors, that used PCB intentionally as insulating oil before the termination of PCB manufacture (before 1972). Insulating oil contains from about 50% to 100% PCB.
 2. Low-concentration PCB waste: a general term for trace-level PCB waste (waste that unintentionally contains PCBs) and for waste containing PCBs at a rate of up to 5,000mg/kg.

Reasons for Implementing an Investigation

Regarding soil pollution, member companies not only conduct surveys based on the Soil Contamination Countermeasures Act but also in many cases implement their own voluntary surveys and adopt necessary countermeasures if pollution is discovered.

Countermeasures against Contamination

In FY 2015, 41 companies conducted surveys in 103 places, and 14 companies discovered pollution exceeding the standards in 19 places. When cases of pollution discovered before FY 2015 are included, 25 companies have implemented countermeasures against contamination at 37 places.

State of Storage and Disposal of PCB Waste

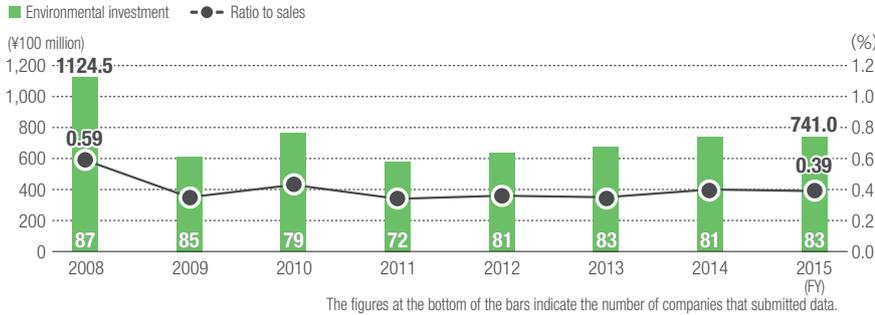
The actual results obtained from treatment of the PCB wastes are steadily increasing every year.

Under the Act on Special Measures for Promotion of Proper Treatment of PCB Waste (enforced on July 15, 2001), companies were obligated to report on the state of storage and disposal of polychlorinated biphenyls (PCBs) to the prefectural governor and to dispose of PCB waste by July 2016. However, the decree was revised in December 2012, extending the deadline for the disposal of PCB waste to March 31, 2027.

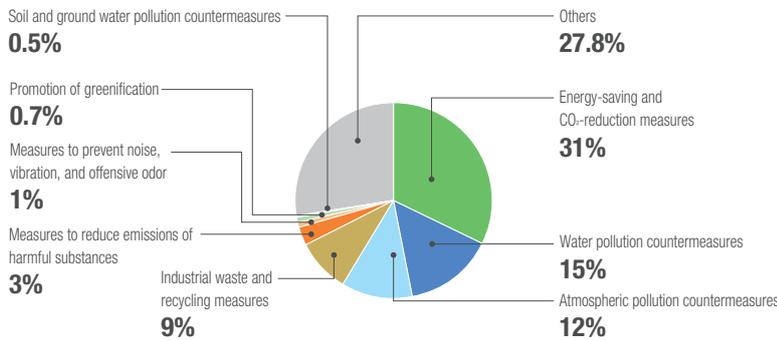
Compared with FY 2014, the recorded disposal rates in FY 2015 increased for both high-concentration PCB waste (from 82% to 88%) and low-concentration PCB waste (from 69% to 77%).

Environmental Protection (Environmental Investment and Biodiversity)

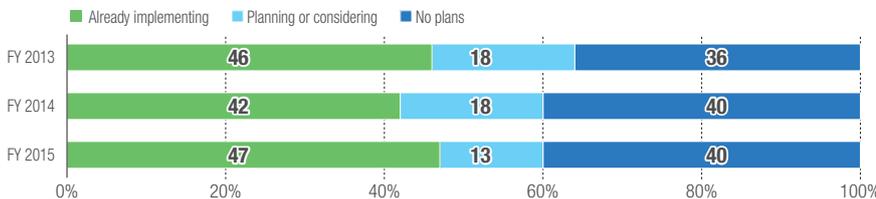
Investment in Environmental Measures



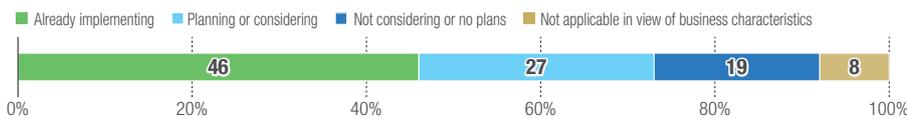
Breakdown of Environmental Investment in FY 2015



State of Efforts to Preserve Biodiversity



Consideration for Biodiversity in Procurement of Materials



Content of Efforts (%)

	Implemented in FY 2015	Scheduled to implement in FY 2016	Scheduled to implement in FY 2017	No implementation schedule	Not applicable in view of business characteristics
Compilation of activity targets	65	5	19	3	0
Establishment of body to oversee and promote activities	62	0	5	14	0
Tree planting and conservation of forest resources	62	11	11	24	3
Conservation of river and ocean resources	65	16	14	24	5
Restoration of lost parts in vicinity or elsewhere	14	0	11	41	14
Collaboration with external bodies, such as other companies, organizations, and NPOs	62	11	14	22	0
Others	19	0	3	3	0

Reference Guidelines



Investment in Environmental Measures

In FY 2015, investment for the installation and maintenance of environment-friendly equipment, such as energy-saving and CO₂-reduction equipment, and for the development of environment-friendly products and technologies and so on remained at roughly the same level as FY 2014, amounting to ¥74.1 billion, or the equivalent of 0.39% of sales. Member companies are implementing planned investment in environmental measures and steadily linking that investment to sustained improvements in their environmental performance.

State of Efforts to Preserve Biodiversity

Regarding biodiversity, 47% of member companies said they were “already implementing” measures and 13% said they were “planning or considering” measures. Furthermore, about half of the member companies already implementing measures said that they took biodiversity into consideration in the procurement of materials.

Content of Efforts

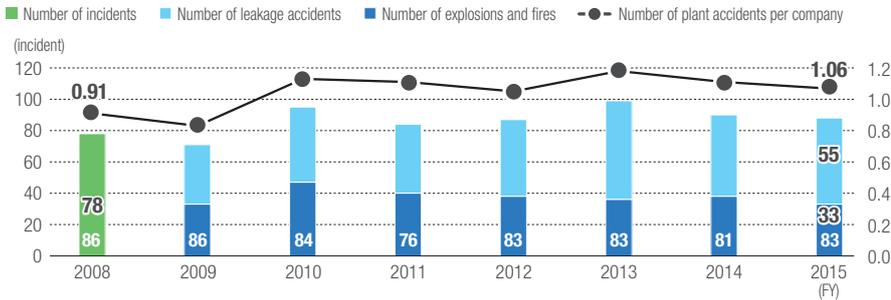
Member companies are also aggressively promoting specific activities and activities in collaboration with external organizations, including tree planting and the conservation of forest resources, the conservation of river and ocean resources, the restoration of lost ecosystem parts in the vicinity or elsewhere, the installation of biotopes using green zones at plants, the preservation of water resources, and the protection of endangered species.

Reference Guidelines

In conjunction with the 10th Meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 10) held in Nagoya in October 2010, Nippon Keidanren and others established the Japan’s Biodiversity Initiatives based on Private Sector Engagement to promote the preservation of biodiversity by companies and launched the Japan Business and Biodiversity Partnership. About half of member companies addressing the issue of biodiversity take part in this partnership. Member companies that are working to address biodiversity issues use this Partnership’s Guidelines and other guidelines as their standards.

Process Safety and Disaster Prevention (Efforts to Prevent Plant Accidents)

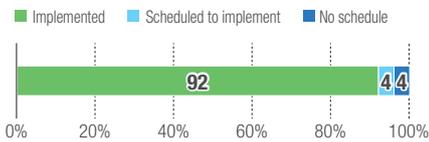
Accident Occurrences (Explosions, fires, leakage, etc.)



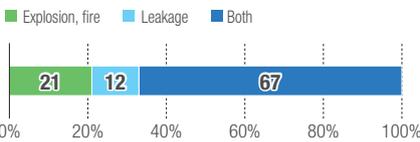
Note: From FY 2009, the number of plant accidents is divided into leakage accidents and explosion/fire accidents. The figures in the bars indicate the number of companies that submitted data.

Efforts to Prevent Plant Accidents

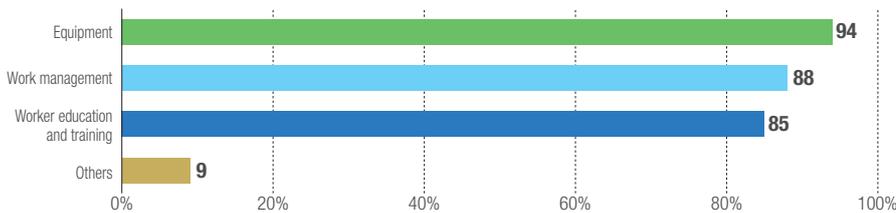
Review and Strengthening of Countermeasures



Reviews by Type of Accident



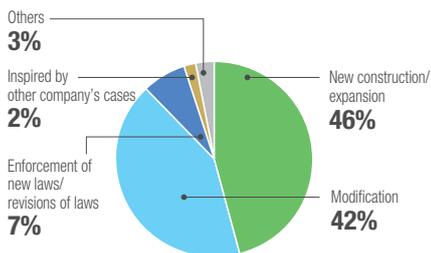
Main Targets of Review Countermeasures (Multiple answers allowed)



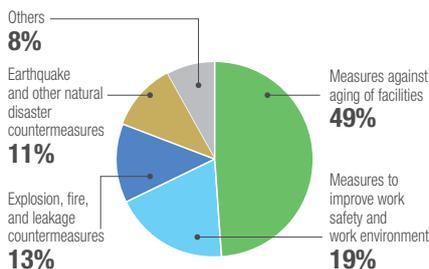
Specific Review Examples

Identification of potentially dangerous places, strengthening of inspections, and implementation of countermeasures; review of work standards and management standards; preparation of educational materials based on examples of accidents; strengthening of worker education; etc.

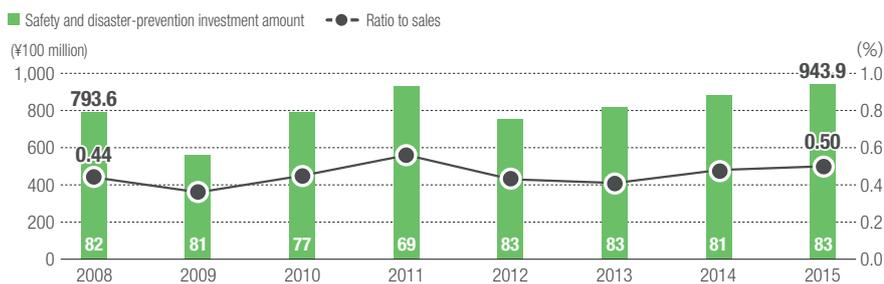
Reasons for Conducting Prior Plant Evaluations



Breakdown of Safety and Disaster-Prevention Investment Amount



Investment in Safety, Security, and Disaster-Prevention Measures



The figures at the bottom of the bars indicate the number of companies that submitted data.

Accident Occurrences

The total number of accidents at plants in FY 2015 was 88, which was lower than in FY 2014, and the number of accidents at plants per company (1.06) slightly decreased from FY 2014.

Efforts to Prevent Plant Accidents

In response to the frequent outbreak of incidents at equipment in recent years, many member companies are reviewing and strengthening their plant countermeasures, work management countermeasures, and worker education and training.

Prior Plant Evaluations and Management

All member companies have prior evaluation criteria for plants. In FY 2015, 99% of member companies conducted prior plant evaluation. In 88% of the cases, the motivation was the new construction, expansion, or modification of plants.

Breakdown of Safety and Disaster-Prevention Investment Amount

Of the investment in safety and disaster prevention in FY 2015, the investment in "measures against aging of facilities" accounts for nearly half of the total.

Investment in Safety, Security, and Disaster-Prevention Measures

The investment in safety and disaster prevention in FY 2015 was 94.4 billion yen (up 7% from FY 2014) and the investment-to-sales ratio was 0.50% (up 5% from FY 2014). Member companies are implementing safety and disasterprevention investment in a planned and sustained manner.

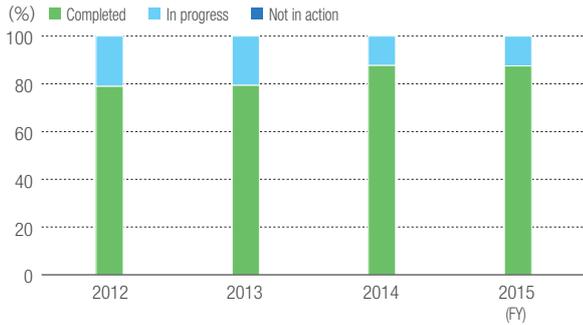
Process Safety and Disaster Prevention (Response to Possible Large-Scale Earthquake)

Self-Evaluation on Emergency Measures

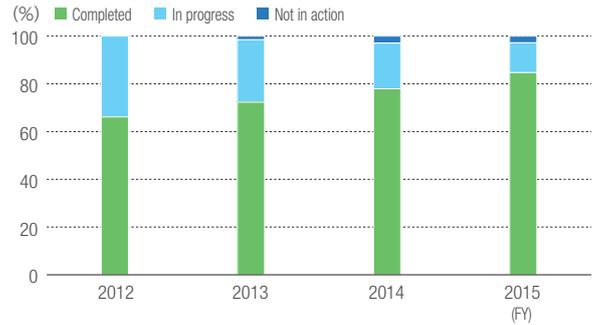
Following the Great East Japan Earthquake, many member companies have undertaken reviews of their earthquake and tsunami countermeasures.

Changes in review items surveyed in a questionnaire conducted immediately after the earthquake during the last four years are shown below, indicating that the state of preparedness for a large-scale earthquake has been steadily improving.

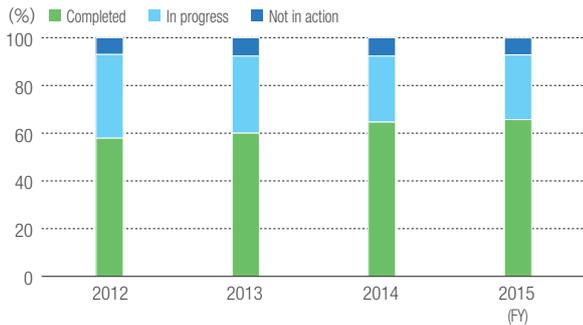
Implementation of Emergency Earthquake Drills



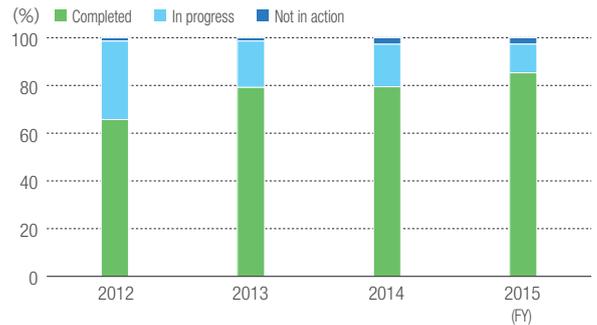
Preparation/Revision of Earthquake Disaster Prevention Guidelines



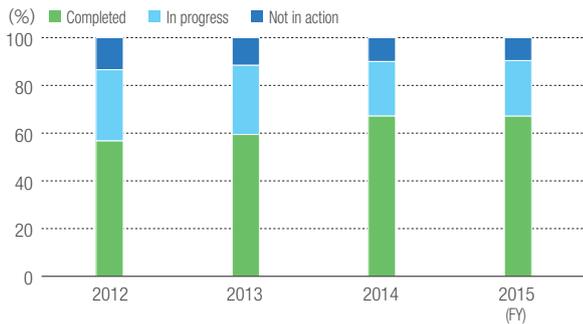
Backup of Computer Systems and Data



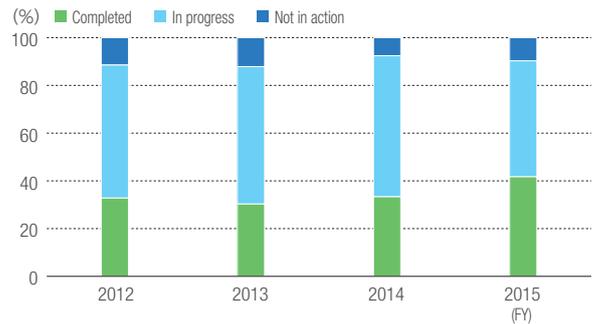
Securing Internal and External Means of Communication



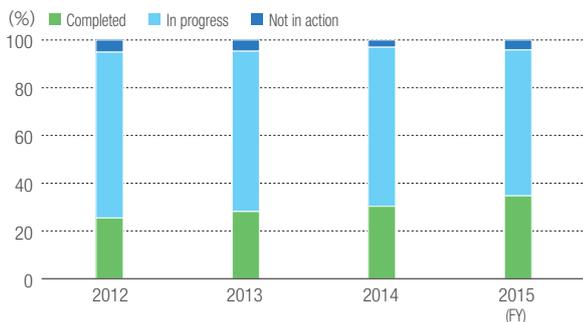
Implementation of Emergency Drills in the Event of a Tsunami



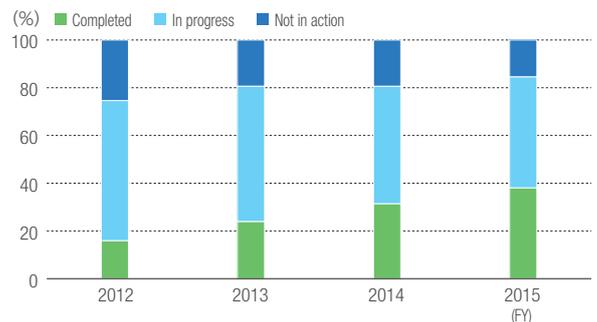
Securing Supply Responsibility



Seismic Diagnosis on Facilities and Reinforcement Work



Protection of Facilities against Tsunamis



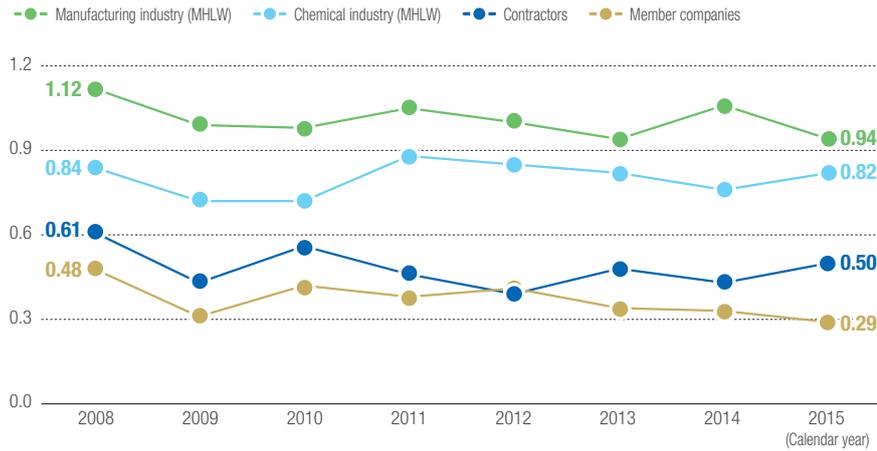
Occurrence of Occupational Accidents

Lost Time Injury Rate (LTIR)

$$\text{LTIR} = \frac{\text{Number of lost time injuries}}{\text{Total working hours (per one million hours)}}$$

*Lost Time Injury rate: Indicator that shows the frequency of lost time injuries

LTIR Trends

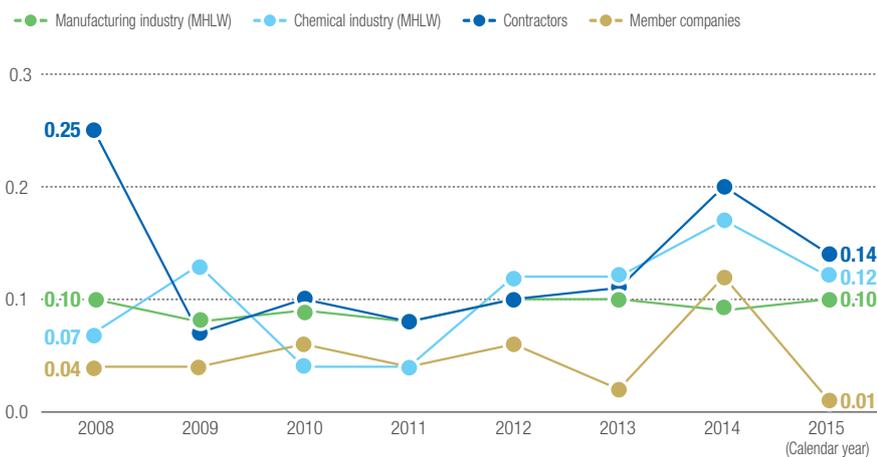


Lost Time Injury Severity Rate* Trends

$$\text{Lost Time Injury Severity Rate} = \frac{\text{Number of work days lost}}{\text{Total work hours (per thousand hours)}}$$

*Lost Time Injury Severity Rate: Indicator that shows the severity of occupational accidents

Overall Severity Rates



Number of Fatalities from Occupational Accidents

(Calendar year)

	2008	2009	2010	2011	2012	2013	2014	2015
Member companies	1	1	2	1	2	0	5	0
Contractors	6	1	1	1	2	2	4	1
Chemical industry (MHLW)	28	19	11	13	17	17	11	22
Manufacturing industry (MHLW)	260	186	211	182	199	201	180	160

LTIR Trends

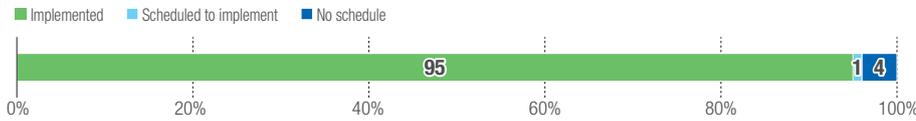
In 2015 LTIR for member companies and their contractors was lower than in the manufacturing industry as a whole and in the chemical industry as a whole, although the figure is hovering around the same level.

Lost Time Injury Severity Rate Trends

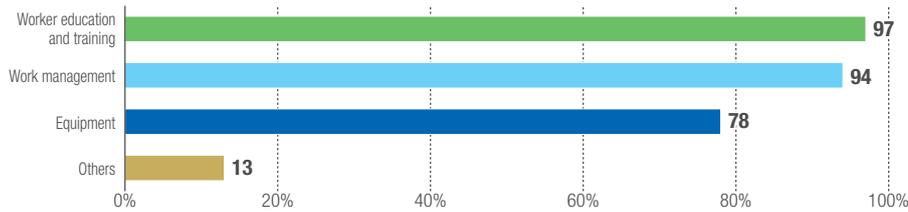
The severity rate of the member companies and their contractors in 2015 improved compared to 2014. However, further efforts for improvement by contractors continue to be needed.

Efforts to Prevent Occupational Accidents

Review and Strengthening of Countermeasures



Main Targets of Review Countermeasures (Multiple answers allowed)



Specific Review Examples

Promotion of risk assessment; strengthening of danger prediction; strengthening of measures for dangers inherent in the workplace, such as rotating objects; review and compilation of standards; implementation of safety-awareness education; etc.

State of Preparedness for the “Mandatory Risk Assessment of Chemicals” Required by the Revised Industrial Safety and Health Act

Percentage of Member Companies dealing with 640 Substances which require Risk Assessment



Assessment level of Usage status of 640 Substances



Readiness for the Risk Assessment Requirements (at present)



Efforts to Prevent Occupational Accidents

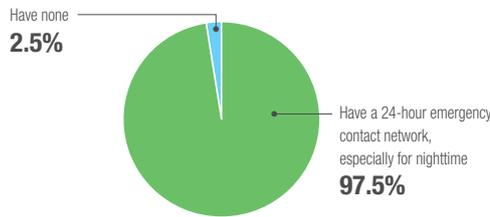
In recent years many member companies have been reviewing and strengthening their worker education and training, work management countermeasures, and equipment countermeasures. Furthermore, member companies have been actively investing in safety and disaster-prevention measures. (See section 2-1 Process Safety, Investment in Safety, Security, and Disaster-Prevention Measures.)

State of Preparedness for the “Mandatory Risk Assessment of Chemicals” Required by the Revised Industrial Safety and Health Act

The act to partially revise the Industrial Safety and Health Act (Act No. 82, 2014) was issued on June 25, 2014. Among the revised items in the Act was “mandatory risk assessment of chemicals,” enforced in June 2016. We surveyed the current state of members’ preparedness for addressing the requirements.

Response to Distribution Accidents

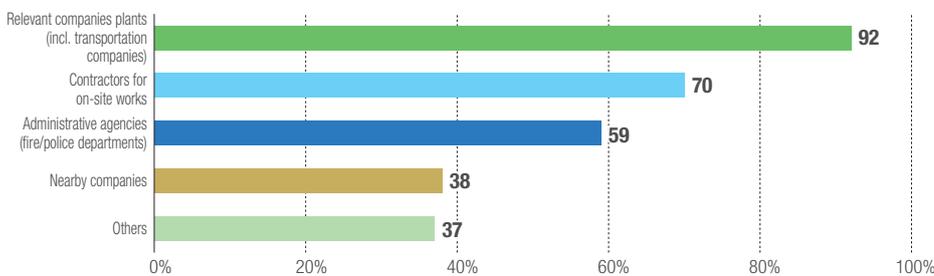
Emergency Contact Arrangements for Distribution Accidents



Response to Distribution Accidents

In preparation for unexpected accidents, member companies implement emergency-response training for distributors. Almost all member companies have emergency-response manuals and have established 24-hour emergency-response contact networks.

Mutual Support Partners for Emergencies (Multiple answers allowed)



Mutual Support in Accidents and Emergencies

Also, about 90% of member companies have established mutual support systems for emergencies involving combustible solids, liquids, gases, high-pressure gases, corrosive substances, and acute toxic substances.

Emergency Drills with Mutual Support Partners (Multiple answers allowed) (%)

Type of training	Communication training	Desktop training	Field training
Mutual support partners			
Administrative agencies	45	24	40
Nearby companies	27	22	28
Relevant companies plants (incl. transportation companies)	69	40	66
Contractors for on-site works	63	37	69

Emergency Drills with Mutual Support Partners

Furthermore, about 90% of member companies implement emergency-response drills with mutual support partners.

Possession of the Yellow Card and Availability of the Container Yellow Card labeling system

Check of Yellow Card Use

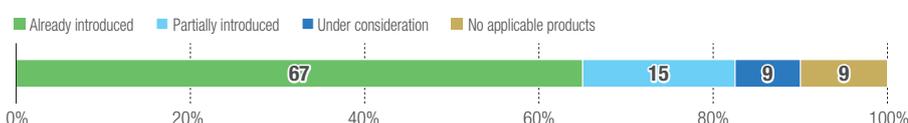


Possession of the Yellow Card*

As a means of providing information to parties responding to emergencies, member companies have prepared and promote the carrying of Yellow Cards.

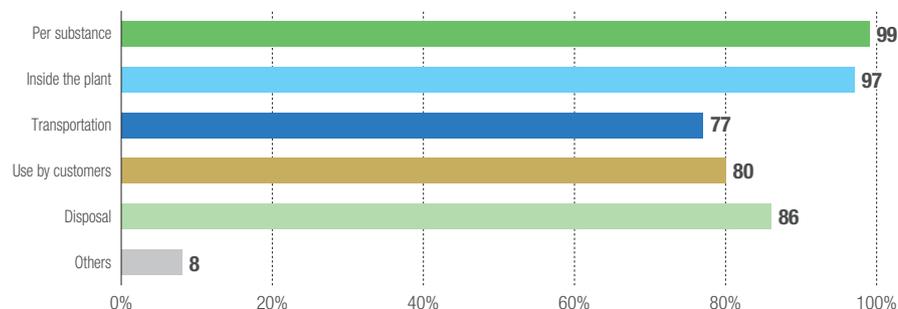
*Yellow Card: A card for a driver containing necessary information for emergency response.

Introduction of Container Yellow Cards labeling system



Prior Safety Assessment

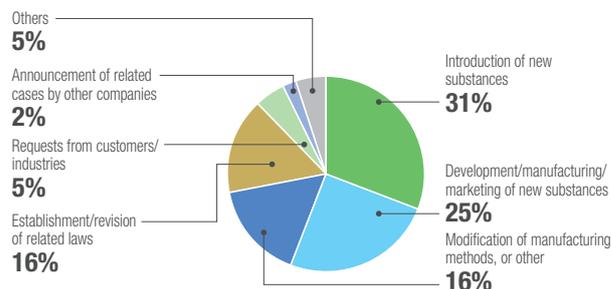
Application of Prior Safety Assessment (Multiple answers allowed)



Factors Covered by Prior Safety Assessment (Multiple answers allowed) (%)

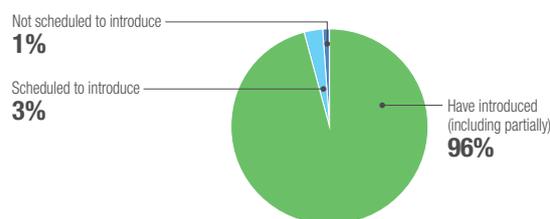
	Health of handlers	Safety of handlers	Explosiveness and inflammability	Environmental impact of emissions	Others
Per substance	99	97	97	95	5
Inside the plant	97	99	97	95	4
Transportation	73	80	81	76	3
Use by customers	80	78	72	72	3
Disposal	76	76	76	80	4
Others	10	10	9	8	3

Reasons for Implementing Prior Safety Assessment

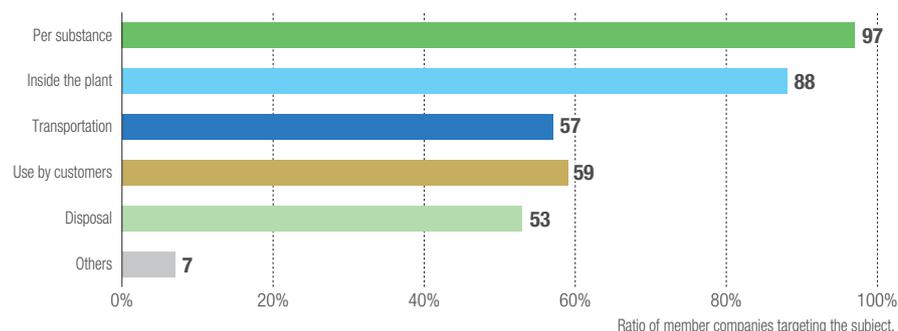


Management of Chemicals Based on Risk Assessment

State of Introduction of Risk Assessment for Chemical Substance Evaluation



Targets of Risk Assessment (Multiple answers allowed)



Prior Safety Assessment

All member companies implement prior safety assessment to specify the safety of chemical substances and evaluate their impact on the health of people handling them and the environment. Prior safety assessment is conducted not only by substance and inside the plant but also more broadly for transportation, use by the customer, disposal, and so on.

Factors Covered by Prior Safety Assessment

Prior safety assessment covers such factors as the health and safety of handlers, explosiveness and inflammability, and the environmental impact of emissions.

Reasons for Implementing Prior Safety Assessment

Almost all member companies implement prior safety assessment every year not only for the development, manufacture, and sale of new substances but also when existing substances are newly introduced or when methods of manufacturing, transportation, use, and disposal are changed.

State of Introduction of Risk Assessment for Chemical Substance Evaluation

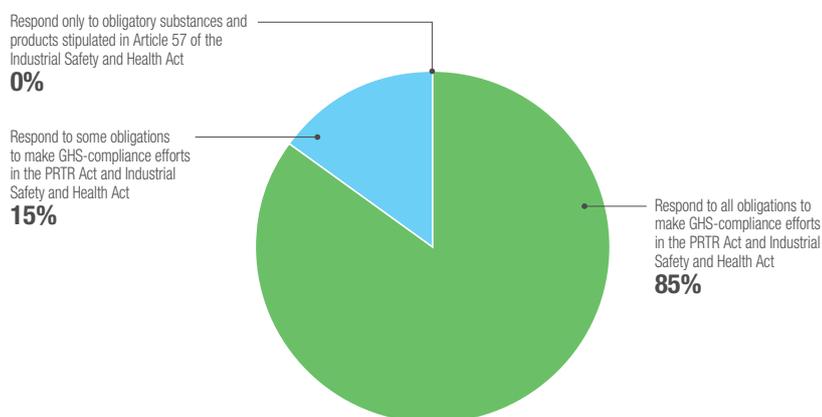
A new initiative is the management of chemical substances on the basis of risk assessment. 96% of member companies have already incorporated risk assessment in their chemicals management, a significant increase from the 83% recorded in last year's survey data.

Targets of Risk Assessment

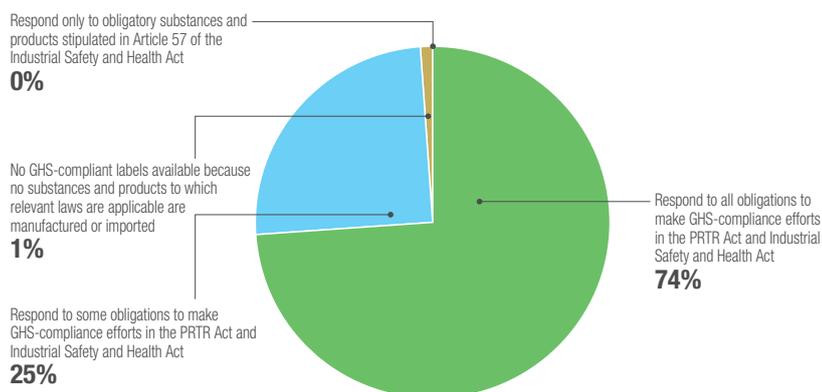
Risk assessment covers the entire lifecycle of chemical substances, from R&D and manufacturing to disposal.

Provision of Information on Products

GHS Compliance of SDSs in Member Companies



GHS Compliance of Labeling in Member Companies



Understanding of Purpose and Use of Supplied Products (%)

	Customers' intended use	Usage by customers (in terms of safety)	Intended use of final products	Usage of final products (in terms of safety)
80% or over	85	53	52	38
50% or over	11	27	37	32
Under 50%	3	15	11	20
Don't understand	1	5	0	10

GHS* Compliance of SDSs in Member Companies

While substances for which it is obligatory to provide Safety Data Sheets (SDSs) are stipulated by the PRTR Act, Industrial Safety and Health Act, and Poisonous and Deleterious Substances Control Act, almost all member companies also voluntarily issue SDSs for substances (products) for which there are no legal requirements. In their compilation of SDSs, most member companies endeavor to fulfill the obligation to make efforts to comply with GHS.

* GHS (Globally Harmonized System of Classification and Labelling of Chemicals): A system to communicate hazard information on labels and Safety Data Sheets. The information provided is classified according to the type and severity of hazards of chemicals according to globally standardized rules.

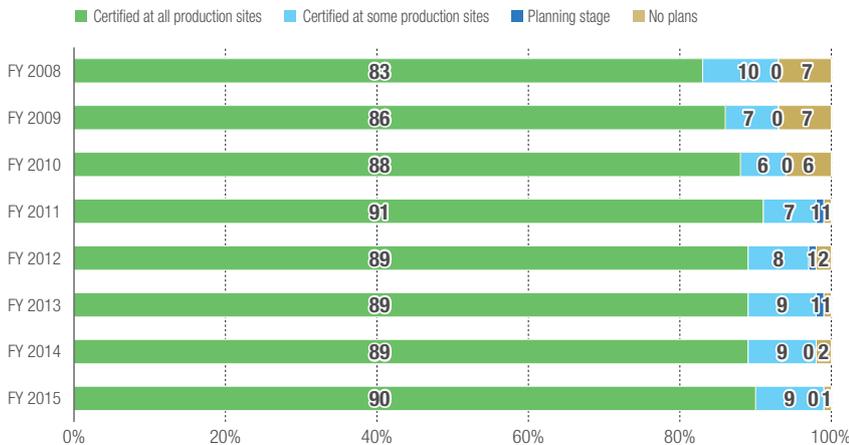
GHS Compliance of Labeling in Member Companies

Regarding labeling as well, most member companies endeavor to fulfill the obligation to make efforts to comply with GHS.

Understanding of Purpose and Use of Supplied Products

Furthermore, from the perspective of Responsible Care, it is important to understand how your company's chemical products are being used and processed by customers and what products are finally made from them and delivered to consumers. Most member companies therefore make efforts to find out about usage by customers and so on.

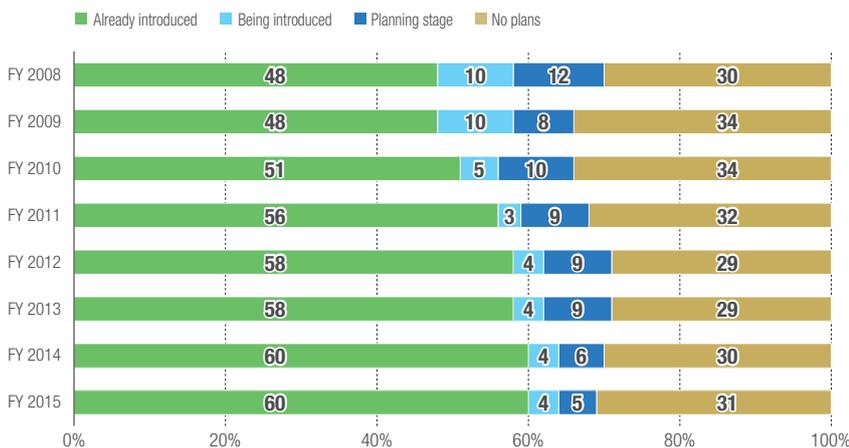
Status of Environmental Management Systems (EMSs) Certification



Status of Environmental Management Systems (EMSs) Certification

The introduction of Environmental Management Systems (EMSs) is steadily increasing: about 90% of the member companies have acquired some kind of EMS certification, such as ISO 14001, for their entire production sector (plants).

Trend in Adoption of Occupational Safety and Health Management Systems (OSHMSs)

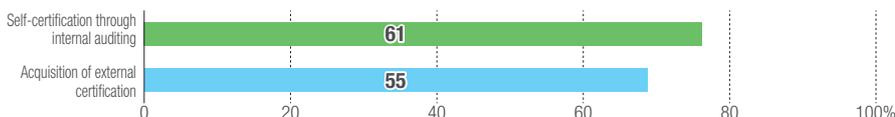


Trend in Adoption of Occupational Safety and Health Management Systems (OSHMSs)

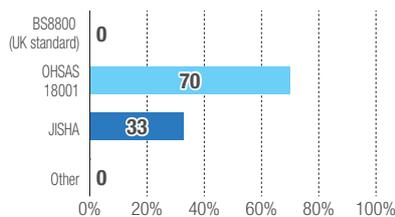
The number of member companies introducing Occupational Safety and Health Management Systems (OSHMSs) is steadily increasing as well; the ratio of members with such systems is now 64%.

Furthermore, the establishment of such systems is verified by the acquisition of external certification, such as OHSAS18001, or internal auditing with reference to the standards of such organizations as the Japan Industrial Safety and Health Association (JISHA).

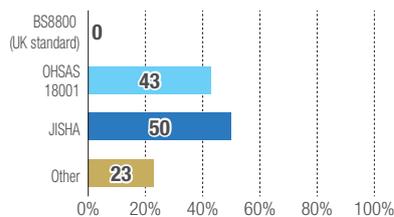
Verification of System's Establishment (Multiple answers allowed)



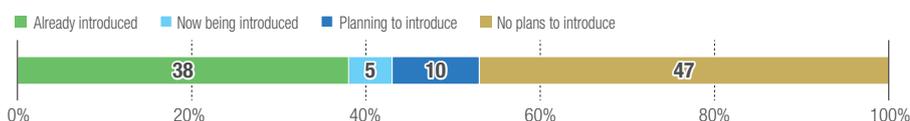
External Certification Acquired (Multiple answers allowed)



Reference Standards for Self-Certification (Multiple answers allowed)



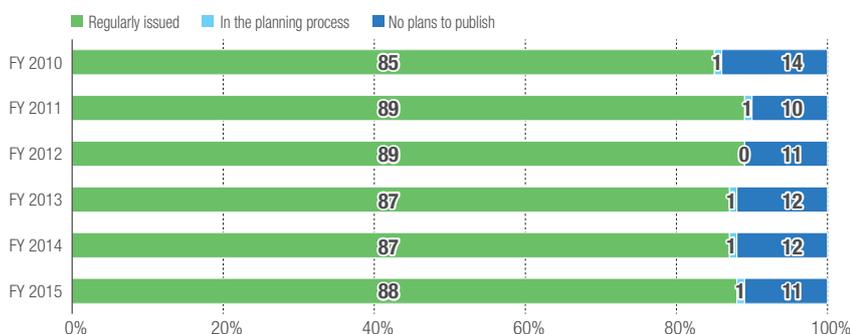
Global Reporting Initiative



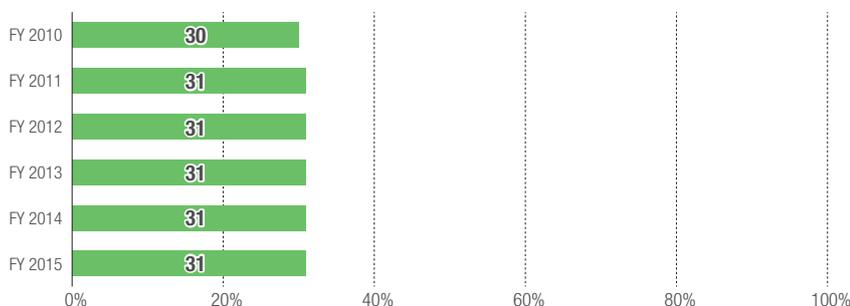
Global Reporting Initiative

GRI (Global Reporting Initiative) is a non-profit organization whose mission is to develop globally applicable guidelines for global sustainability reporting. Companies have started to adopt sustainability reporting, including not only environmental but also social and economic dimensions, according to the indicators developed by the GRI.

Publication of Responsible Care Reports



Publication of Site Reports



Contents of Responsible Care Reports

Contents		Coverage (%)
Basic items	RC-related management policy, declaration, philosophy, etc.	100
	RC-related management setup and organization	96
Environmental protection	Industrial waste	100
	Energy saving and global warming prevention	100
	PRTR, harmful atmosphere-polluting substances	100
	Atmospheric pollution countermeasures, water pollution countermeasures	100
Process safety and disaster prevention	General content	97
	Emergency response inside and outside company at time of serious accident	86
	Prior safety evaluation of facilities	72
Occupational health and safety	General content	100
	Consideration of safety at affiliate companies, such as safety education	72
Chemicals and product safety	General content	99
	Supply of information through material safety data sheets, etc.	89
	Prior safety evaluation of chemical substances	82
Distribution safety	Response to distribution accidents (setup, training)	69
	Implementation of Yellow Cards and labeling	69
Social dialogue	Present state of employee education relating to RC and plans	73
	Dialogue with the local community	92

Publication of Responsible Care Reports

The ratio of member companies issuing Responsible Care Reports in FY 2015 was about 90%, almost the same as in previous years. If group publications are included, the ratio rises to about 100%.

Publication of Site Reports

More than 30% of the member companies issued local site reports. This trend has remained the same for the last few years.

Contents of Responsible Care Reports

Most of the reports carried the result of activities in the six main areas of Responsible Care, namely, environmental protection, process safety and disaster prevention, occupational health and safety, chemicals and product safety, distribution safety, and social dialogue.

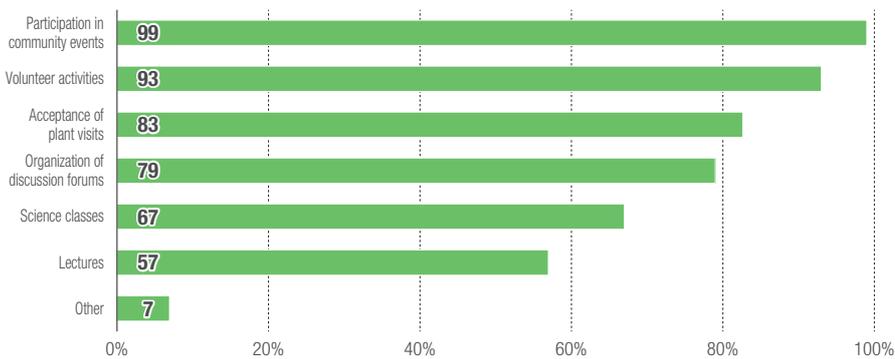
In particular, at a time when global environmental problems are attracting the attention of society, all of the reports carried the results of activities in the category of environmental protection.

Implementation of Regional Dialogue Meetings

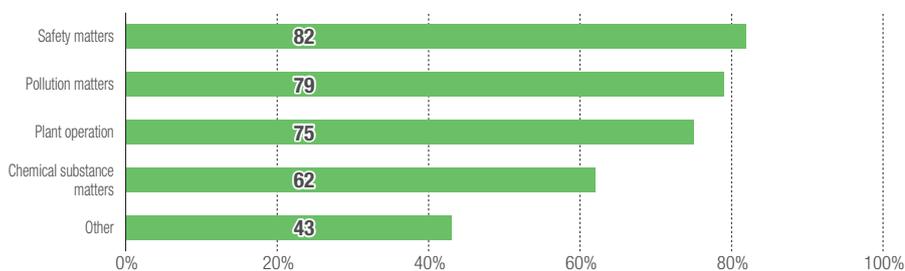
Areas where implemented in FY 2015	Niigata-Kita, Yamaguchi-Nishi, Kawasaki, Sakai & Senboku, Oita, Iwakuni & Otake, Toyama & Takaoka
Areas where implemented in FY 2014	Yamaguchi-Higashi, Osaka, Chiba, Aichi, Yokkaichi, Kashima, Okayama, Hyogo

Other Community Activities

Means of Communication (Multiple answers allowed)



Agenda Items in Discussion Forums (Multiple answers allowed)



Implementation of Regional Dialogue Meetings

Responsible Care Committee holds dialogue meetings with local communities once every two years in areas where there is a concentration of member company sites, especially chemical complexes.

Other Community Activities

Besides these meetings, member companies endeavor to promote communication with the local community by participating in and supporting community events and volunteer activities, hosting plant visits for local residents and elementary and junior high school students, and giving lectures at schools and civic groups. In FY 2015, 79% of member companies created opportunities for exchange with local residents, and dialogues were conducted on a total of 790 occasions in 159 areas.

Agenda Items in Discussion Forums

The discussions often involved matters closely related to the local community, such as safety (accident- and disaster-prevention measures, etc.), pollution, chemical substances, and plant management (the construction of new facilities, site changes, etc.).

Details of Self-Assessment Scores (Average scores for all member companies based on a five-level assessment system)

Code	MS	EP	PS	OSH	DS	CPS	SD
Assessed item	Important items						
Policy	4.5	4.4	4.3	4.4	3.7	4.2	4.2
Identification of striking environmental aspects, identification of dangerous and harmful factors, etc.	4.3	4.3	4.5	4.5	3.7	4.3	—
Legal and other requirements	4.6	—	—	—	—	—	—
Objectives	4.5	4.2	4.1	4.2	3.6	3.8	3.4
Plans	4.5	4.0	4.2	4.4	3.7	4.0	3.7
Organization	4.2	—	—	—	—	—	—
Education and training	4.1	4.5	4.2	4.3	3.8	3.9	3.5
Communication	4.1	3.8	3.6	4.5	4.0	4.0	3.8
Documentation and document management	4.2	—	—	—	—	—	—
Operation management	4.2	3.6	—	—	3.8	3.3	—
Response to emergency situations	4.3	—	4.0	—	3.3	—	—
Inspection and monitoring	4.4	4.3	4.3	4.2	3.6	4.2	3.5
Corrections and preventive measures	4.4	4.2	4.4	4.4	3.9	4.3	—
Collection of information and management of records	4.3	—	—	—	—	—	—
Auditing	4.5	—	—	—	—	—	—
Revisions by management	4.5	—	—	—	—	—	—
(Overall assessment)	4.4	4.2	4.2	4.4	3.8	4.1	3.8

Abbreviation	Code	Self-assessment score	Classification
MS	Management system	4.5 points or over	Very satisfactory
EP	Environmental protection	3.5 to under 4.5 points	Just about satisfactory
PS	Process safety and disaster prevention	2.5 to under 3.5 points	Somewhat unsatisfactory
OSH	Occupational health and safety	Under 2.5 points	Unsatisfactory
DS	Distribution safety		
CPS	Chemicals and product safety		
SD	Social dialogue		

Details of Self-Assessment Scores (Average scores for all member companies)

On a scale of 5, scores in the 4-point range were recorded for all of the important items in the categories of management system and occupational health and safety, showing that the PDCA cycle is rotating at a high level in these categories.

In the category of environmental preservation, more efforts should be made to improve communication and operation management.

In the category of process safety, enhanced communication is desirable.

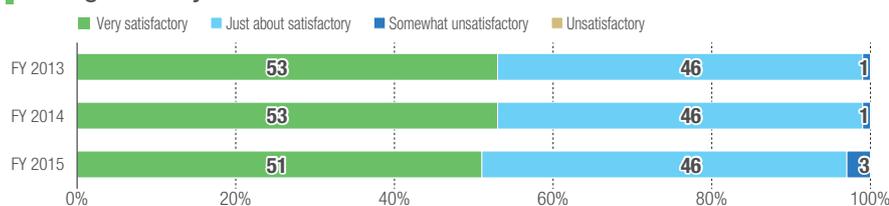
In the category of distribution safety, there are issues especially in the response to emergency situations.

In the category of chemical product safety, the improvement of operation management is desirable.

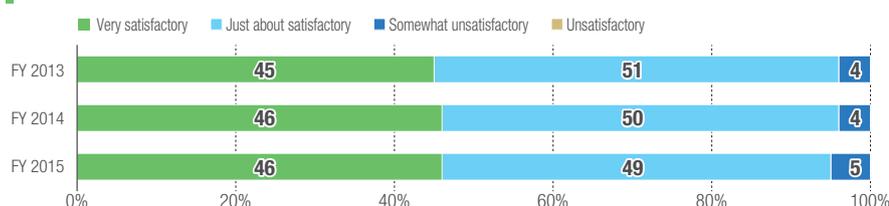
In the category of social dialogue, there are still many issues, such as objectives, education and training, and inspection and monitoring.

Change in Comprehensive Assessment

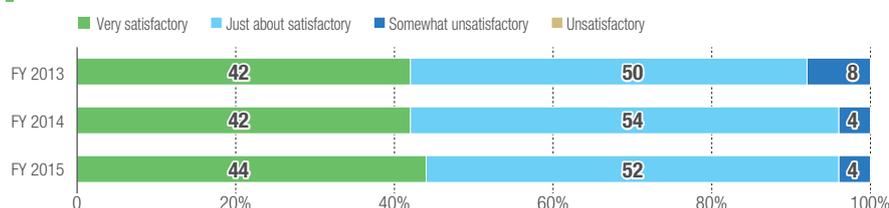
Management System



Environmental Protection



Process Safety and Disaster Prevention



Management System

Regarding trends over the last three years, in the category of management system, the ratio of member companies replying "very satisfactory" or "just about satisfactory" has maintained a high level of over 90%.

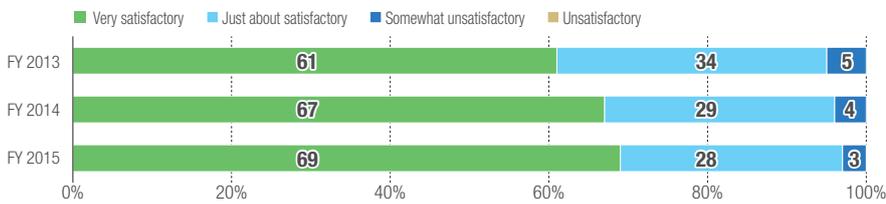
Environmental Protection

In the category of environmental protection, the ratio of member companies replying "very satisfactory" or "just about satisfactory" has maintained above 90%.

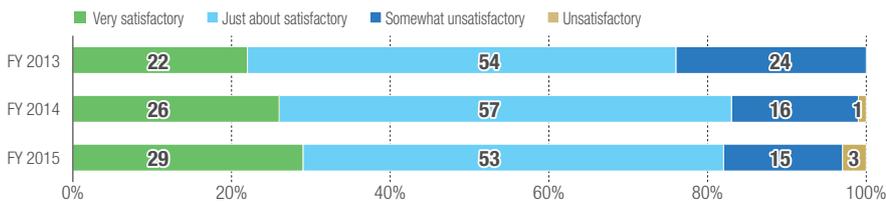
Process Safety and Disaster Prevention

In the category of process safety and disaster prevention, the ratio of member companies replying "very satisfactory" or "just about satisfactory" has maintained above 90% and on an upward trend.

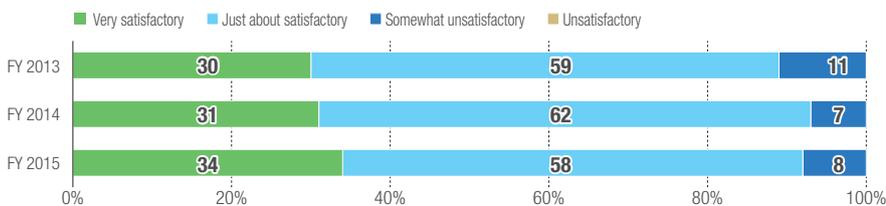
Occupational Health and Safety



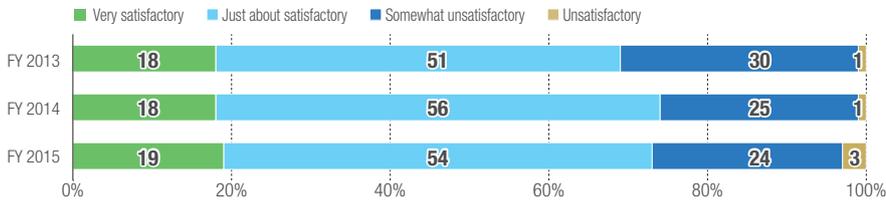
Distribution Safety



Chemicals and Product Safety



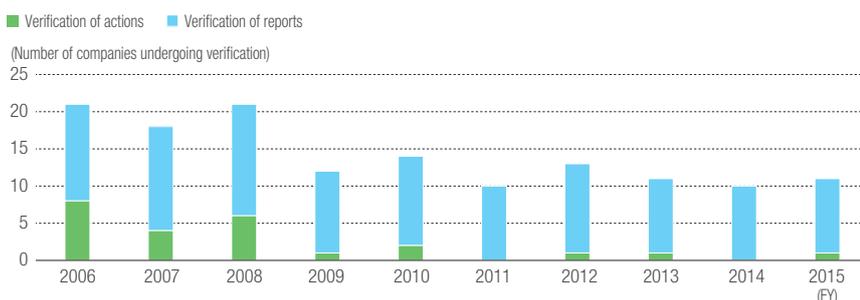
Social Dialogue



9-1

Responsible Care Verification

Companies Undergoing a Responsible Care (RC) Verification



Occupational Health and Safety

In the category of occupational health and safety, the ratio of member companies replying “very satisfactory” or “just about satisfactory” has remained above 90%, and the ratio replying “very satisfactory” is now approaching 70%.

Distribution Safety

In the category of distribution safety, the ratio of member companies replying “very satisfactory” or “just about satisfactory” accounts for more than 80%.

Chemicals and Product Safety

In the category of chemicals and product safety, the ratio of member companies replying “very satisfactory” or “just about satisfactory” is almost 90%.

Social Dialogue

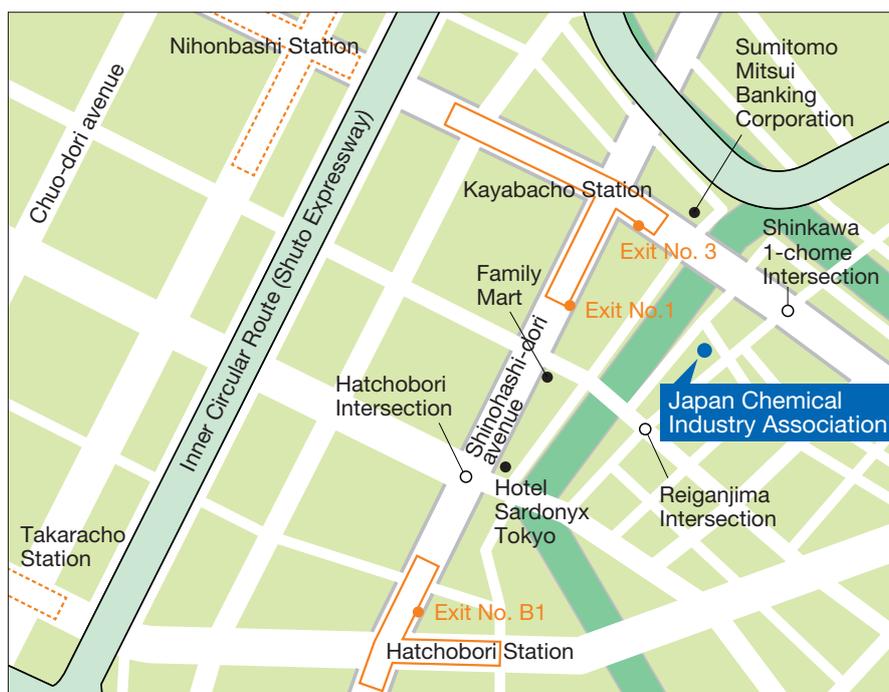
In the category of social dialogue, the ratio of member companies replying “very satisfactory” or “just about satisfactory” accounts for more than 70%.

Companies Undergoing a Responsible Care (RC) Verification

In FY 2015, 11 companies underwent a responsible care verification (10 for verification of reports and 1 for verification of actions). The total number of companies that have undergone an RC verification is 185 (140 for verification of reports and 45 for verification of actions).

Verification of reports (10 companies): Sanyo Chemical Industries, Ltd., Daicel Corporation, Nippon Shokubai Co., Ltd., Asahi Kasei Corporation, Kaneka Corporation, Ube Industries, Ltd., JSR Corporation, Shin-Etsu Chemical Co., Ltd., Sumitomo Seika Chemicals Company Limited, and Nippon Soda Co., Ltd.

Verification of actions (1 company): Nihon Nohyaku Co., Ltd.



Access

Kayabacho Station (Tokyo Metro Hibiya and Tozai Lines)

Walk straight ahead from Exit No. 3 and turn right at the Shinkawa 1-chome Intersection.

Approximately 3 minutes on foot

Kayabacho Station (Tokyo Metro Hibiya Line)

Walk straight ahead from Exit No. 1, turn left at the intersection with the Family Mart store, and then turn left at the Reiganjima Intersection.

Approximately 3 minutes on foot

Hatchobori Station (JR Keiyo Line)

Approximately 8 minutes on foot from Exit No. B1

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Responsible Care Department

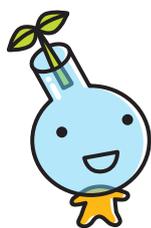
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Nikka-chan:
JCIA's official character



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JCIA Annual Report 2016 Reference Materials



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