

CSR



Top Commitment

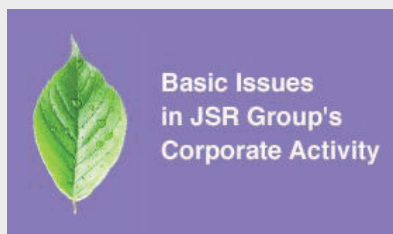


JSR Group's CSR



Dialogue with Stakeholders

JSR Group CSR Priority Issues and FY2017 Progress of Initiatives



Editorial Policy

ESG Data
(PDF 576KB)

List of Targets and
Results (PDF 436KB)

GRI Guidelines
Comparison Table

Evaluation by Outside Organization

- ▶ Evaluation by Outside Organization
- ▶ Third-Party Opinion
- ▶ Independent Review

Report Downloads

- ▶ CSR Report
- ▶ CSR Report (Group Companies)
- ▶ RC Site Report
- ▶ Corporate Brochure
- ▶ Annual Report

Corporate Information

- ▶ About JSR Group
- ▶ JSR Group Products
- ▶ Financial Data on the IR Site

Submit Comments concerning
the CSR Report Here

Top Commitment

JSR's Sustainability

- Preparing for accelerating change in our times and society -



Aiming to maintain sustainable growth in 2020 and beyond

The international situation has been undergoing dramatic changes in recent years. With such developments as the UK's decision to leave the EU, the US president's declaration of an "America first" policy, and the general secretary of the Communist Party of China's declaration that his nation is becoming a world leader, the world's power balance has collapsed and uncertainty about the future is growing. Meanwhile, advances in science and technology are gaining momentum in such areas as AI, big data, and "smart factories," and the wave of digitalization is coming with greater speed. I would like to begin this Top Commitment by looking back at JSR Group's course between FY2011 and FY2017 and examining how we have prepared for this age of accelerating change.

Aiming to achieve an ideal vision of itself in 2020 and beyond, JSR Group has been formulating and advancing mid-term business plans through three phases that began in FY2011 and will extend to FY2019. JSR20i3 (FY2011 to FY2013) was the first phase. Seeing the Petrochemical Products Business and Fine Chemicals Business as key JSR businesses, it anticipated slower growth in markets and looked for new business opportunities. The next mid-term business plan, JSR20i6 (FY2014 to FY2016), focused new attention on the Life Sciences Business and established it as a "third mainstay business" alongside the Petrochemical Products Business and Fine Chemicals Business. The current plan is JSR20i9 (FY2017 to FY2019). As fears of a shrinking domestic market and slower growth in our client markets finally become realized, this plan looks to produce higher profits by leveraging SSB (solution polymerization styrene-butadiene rubber) for fuel-efficient tires, the Semiconductor Materials Business, and the Life Sciences Business as three growth drivers. During the plan's initial fiscal year, FY2017, we successfully achieved strong performance based on increased sales of automobile tire materials and semiconductor materials and on growth in the Life Sciences Business.

The Life Sciences Business is the target of particular focus as we strive to become a company that can maintain sustainable growth in 2020 and beyond. We began research in this field in the early 1980s, and over the next 30 years or so have developed it into a key business for the next generation. We established JSR Life Sciences Corporation in 2012, and this company is now fully engaged in the development, manufacture, and marketing of medical products. Moreover, in 2016, we acquired KBI Biopharma of the United States and made Medical & Biological Laboratories Co., Ltd., a consolidated subsidiary. And in October 2017, we opened the JSR-Keio University Medical and Chemical Innovation Center (commonly known as JKIC) to develop through joint research with Keio University the innovative materials and products that will support new medical fields. Sales by the Life Sciences Business amounted to roughly 26 billion yen in FY2017 and are growing at a rate that should reach 40 billion yen in FY2018.

Looking ahead, JSR Group will strive to breathe new value into the life science market, using the strengths that come with being a chemicals company that is an "engineering" leader. As an example, we want to help lower swelling medical costs, which constitute a major social problem. Medical costs are skyrocketing primarily because of the long time and great expense required for new drug development. It is said that, on average, development takes about twelve years and costs between 300 billion and three trillion yen. We want to tackle this problem and spark innovation using the technologies JSR Group has developed in data science and other areas.

Responding to digitalization in specific business segments

We executed a series of actions in response to ever-accelerating digitalization in FY2017. The most important is the cultivation of data scientists. Some ten employees who received training at an American company last year can now handle programming on their own. They have produced tremendous results, including completing in two hours analyses that used to take three days. However, what is important here is not simply to have data scientists available. Instead, it is for all employees to eliminate their mental barriers to the dramatic changes that digitalization will inevitably bring, and for them to be ready to understand and utilize it. I think the first step toward responding to digitalization is to understand what programming is, what it can do, why it is necessary, and how it can be applied.

In our businesses, we executed a name change and reorganization of our Fine Chemicals Business's segments to create a new "Digital Solutions Business." Our aim here is to achieve a better fit with the coming digitalization age and generate greater growth.

Additionally, we are making steady preparations to fully revamp JSR Group's core information systems into a platform that will make our daily corporate activities responsive to the digitalization age. This effort is linked to our vision of the ideal JSR in 2020 and beyond.

Contributing to the arrival of a sustainable society


Over its history, JSR Group has advanced its business with the aim of resolving social issues. It has done so with constant awareness of the impacts that it, a chemicals company that supplies materials, has on downstream companies and end users. At the present time, we place particular focus on three social issues: "the environment," "work styles," and "safety."

For "the environment," we are working under independently-set targets to tackle the challenges of Climate Change Mitigation and Environmental Impact Reduction. Within this context, we recognize that greenhouse gases and marine plastics are significant issues for us as a chemicals company. As for reducing our CO₂ emissions, we are making preparations toward seeing what JSR Group can do, including applying new technologies, based on guidelines of the Japan Chemical Industry Association, which is a participant in Keidanren's "Commitment to a Low Carbon Society."

We see reexamination of "work styles" to be an important challenge in achieving productivity capable of responding to coming changes. We are thus advancing reform that emphasizes changing the quality of work styles, rather than simply reducing overtime hours. As part of this, we have renamed our effort "work-style innovation" in order to avoid falling into "reform for the sake of 'work-style reform.'" However, in evaluating our efforts thus far, I keenly feel that a top-down approach is as indispensable as a bottom-up approach. For example, changing work styles sometimes requires tremendous investment for the renovation of information systems and the like. Decisions concerning such investment are made in management meetings. Therefore, I think it may be necessary to change how management meetings are run in some cases.

And in the area of "safety," overall awareness of this issue is rising among employees based on our "Basic Philosophy for Occupational Health and Safety," formulated in 2016, and the "Courses of Action" that was put in place to implement it. We are now seeing the effects of this. On the other hand, a number of significant matters have also become evident. They include the necessity of safety education for specific age groups and the full implementation of safety measures in Group companies. We are currently exploring specific measures for resolving these matters and achieving even greater safety awareness. We will continue pushing JSR20i9 forward to address the challenges I have just described and realize a JSR Group that will grow sustainably in 2020 and beyond.

Moreover, we will practice corporate management that responds to the Ten Principles of the United Nations Global Compact and precisely grasps the SDGs^{*} and other social issues. And we will contribute to the arrival of a sustainable society as a chemical company that proudly stands by its Corporate Mission: "Materials Innovation - We create value through materials to enrich society, people and the environment."



Mitsunobu Koshiba
Representative Director and President
JSR Corporation

^{*}Sustainable Development Goals (SDGs): International goals for the year 2030 that were set forth in "Transforming our World: The 2030 Agenda for Sustainable Development," a plan for action that was adopted at a UN summit in September 2015. They are comprised of 17 goals and 169 targets for achieving a sustainable world.

JSR Group's CSR Corporate Mission and CSR Philosophy

To create a corporate culture in which sustainable growth is achieved constantly regardless of changes in personnel or organizational form, and to ensure that such a culture permeates across JSR Group, we established our Essential Elements and have been promoting them to be shared among the employees within the Group as common values so that each employee can act with responsibility and confidence. The Essential Elements consists of the Corporate Mission, the Management Policies, and the Course of Action.

1. Corporate Mission and CSR Philosophy

CSR is a key element of management. CSR is included as part of the management policies by clearly indicating that "responsibility to stakeholders" and our management consists of CSR as an essential element.

Corporate Mission and CSR Philosophy

Integration of management and CSR creates benefits for both society and JSR Group through its contribution to the development of a sustainable global environment and society.

Under the corporate mission of "Materials Innovation - We create value through materials to enrich society, people and the environment," JSR Group aims to build and maintain good relations with all of our stakeholders and become an indispensable corporate citizen. We intend to resolve social issues by integrating management and CSR as well as demonstrating our corporate mission with actual results.

JSR Group's Corporate Mission and Priority Issues



JSR Group's Corporate Mission and Priority Issues ([PDF 463KB](#))

The scope of JSR Group's business activities is in the process of shifting from a Japan-centric focus to a truly global focus. In order to carry out global business activities, we need to have a deeper understanding of worldwide issues and the problems faced by regions throughout the world.

On the other hand, these issues and problems can be turned into opportunities for new businesses. By actively seeking to identify these business opportunities, we are working to expand the scope of our business.

Participation in the United Nations Global Compact

JSR Group became a participant in the United Nations Global Compact in April 2009. As such, we will more proactively fulfill our corporate social responsibilities with recognition that businesses operating on a global level must make a greater commitment to human rights, labor, the environment and anti-corruption, as expressed in The Ten Principles of the United Nations Global Compact.

We will also advance initiatives oriented toward achieving the "Sustainable Development Goals" (SDGs) that were adopted by the United Nations in 2015 through our business activities.



Mitsunobu Koshihara
Representative Director and President
JSR Corporation



The Ten Principles of the United Nations Global Compact

- 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- 2: make sure that they are not complicit in human rights abuses.
- 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- 4: the elimination of all forms of forced and compulsory labour;
- 5: the effective abolition of child labour; and
- 6: the elimination of discrimination in respect of employment and occupation.
- 7: Businesses should support a precautionary approach to environmental challenges;
- 8: undertake initiatives to promote greater environmental responsibility; and
- 9: encourage the development and diffusion of environmentally friendly technologies.
- 10: Businesses should work against corruption in all its forms, including extortion and bribery.

The Sustainable Development Goals (SDGs)

The SDGs are comprised of 17 goals and 169 targets that all United Nations member states will strive to achieve by 2030 for the purpose of bringing sustainability to the global environment and people's lives. In addition to conventional development goals, such as eradicating extreme poverty and hunger, the SDGs also cover challenges faced by developed countries, among them the promotion of gender equality, creation of a strong employment environment, reexamination of production and consumption, conservation of marine and forest resources, and development of safe communities.

[UN SDGs https://sustainabledevelopment.un.org/?menu=1300](https://sustainabledevelopment.un.org/?menu=1300)

SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



As a Global Compact participant, we prepare "Communication on Progress" (COP) reports detailing our fulfillment of the compact's principles.

2. Corporate Mission

Materials Innovation

We create value through materials to enrich society, people and the environment.

The corporate mission of JSR Group clearly identifies the company's raison d'être.
By supplying materials that are indispensable to human societies, JSR aims to be trusted.

3. Management Policies - JSR's Fundamental Pillars of Management

Continuous Creation of Businesses

As society evolves, so does the demand for specialized materials and advanced products. JSR continuously evolves to anticipate and respond to changing marketing needs and, in doing so, achieves dynamic growth.

Enhancement of Corporate Culture

As society evolves, so will our organization. JSR will build on its existing positive corporate culture to create an organization and management style with the vitality to keep evolving.

Increase in Corporate Value

Aiming to increase corporate value by creating business opportunities through materials. To this end, we will focus on customer satisfaction and the fulfillment of employees.

4. Management Policies - Responsibility to Our Stakeholders

Responsibility to Our Customers / Business Partners

When interacting with our business partners and customers, JSR Group will:

- Constantly evolve to meet the demand for new materials
- Always strive to increase customer satisfaction
- Act in good faith and maintain fair and equitable business relations
- Continue to be socially and environmentally conscious throughout the supply chain

Responsibility to Our Employees

All employees should expect:

- To be evaluated and rewarded based on fair standards
- Continuous opportunities to grow by challenging themselves
- Acceptance of the diversity of fellow colleagues and to be provided a place where all employees can work together as a team

Responsibility to Society

All members of JSR Group will honor our responsibility to both the local and global communities through:

- Responsible and respectful business practices (Responsible Care) that considers the environment and safety
- Support for environmental conservation by providing eco-friendly products
- Reduction of our environmental impact throughout the entire product lifecycle
- Active contribution to conserving biodiversity throughout its business activities and the entire product lifecycle

Responsibility to Shareholders

JSR Group will maintain its responsibility to its shareholders by:

- Aiming to increase corporate value by creating business opportunities through materials
- Constantly enhancing its management efficiencies
- Inspiring trust by being highly transparent and conducting sound corporate management practices

5. 4C Course of Action

CHALLENGE

All employees of JSR Group should share a common, global focus and desire to succeed. Employees should feel confident to autonomously take on new challenges, learning from successes while viewing setbacks as opportunities to learn, grow and improve.

COMMUNICATION

All employees should feel comfortable and confident maintaining open lines of bi-directional communication at all levels within JSR Group. Employees should strive for organizational transparency through direct conversations as the best means to share value and achieve common goals, especially in the face of growth and diversification.

COLLABORATION

Employees will work together in the spirit of cooperation, valuing common, corporate goals over internal or departmental barriers. Employees will also be encouraged to actively collaborate with external resources and not be bound to conventional ideas.

CULTIVATION

All employees will cultivate an environment that supports bi-directional communication between managers and subordinates and provides opportunities to develop together as individuals and as members of productive, supportive teams.



JSR Group's CSR

CSR Management and Advancement Structure

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. CSR Management and Advancement Structure

- 1) The Corporate Ethics Committee
- 2) The Responsible Care (RC) Committee
- 3) The Risk Management Committee
- 4) The Social Contribution Committee

- (1) JSR Group Principles of Corporate Ethics
- (2) Approach to Workplace Safety, the Environment, Quality, and Product Safety
- (3) Approach to Risk Management
- (4) Approach to Social Contribution
- (5) Approach to Taxes
- (6) Approach to Human Rights
- (7) Approach to Procurement

2. Key Stakeholders Involved with JSR Group

Under the corporate mission "Materials Innovation - We create value through materials to enrich society, people and the environment," JSR Group aims to build and maintain good relationship with all of our stakeholders and become an indispensable corporate citizen. To succeed, we are working to resolve key social issues by integrating management and CSR and demonstrating our corporate mission with actual results.

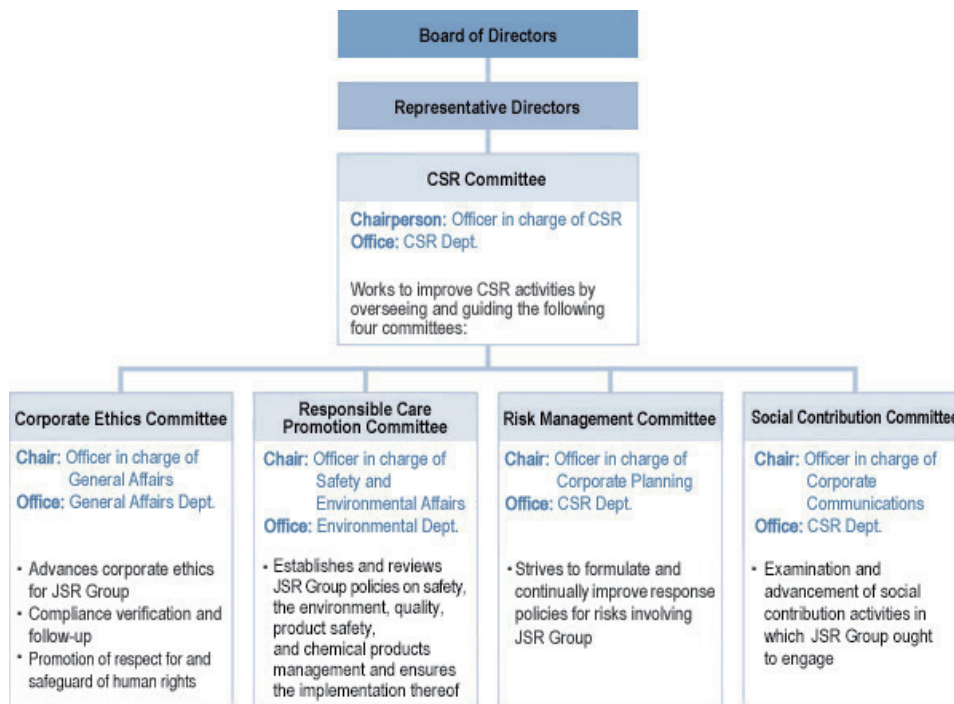
1. CSR Management and Advancement Structure

JSR has established a CSR Committee that reports directly to the Representative Director to promote JSR Group's CSR. Four committees are set up under the CSR Committee: The Corporate Ethics Committee, Responsible Care (RC) Committee, Risk Management Committee, and Social Contribution Committee. The CSR Committee supervises and guides the four committees and endeavors to strengthen CSR management through regularly scheduled meetings (held four times annually) as well as extraordinary meetings.

Chaired by the officer in charge of CSR, the CSR Committee's meetings are attended by officers responsible for manufacturing, manufacturing technologies, safety and environmental affairs, research and development, human resources development, accounting and financial affairs, corporate planning, corporate communications, legal affairs, general affairs, the Elastomers Business, the Digital Solutions Business, and the Life Sciences Business. Also attending and participating are the offices of the four aforementioned committees. The committee operates with a structure that covers all businesses and functions of JSR Group. We endeavor to build confidence among our customers and a sense of security among those who live near our facilities by disclosing information on the content and results of those activities in the CSR Report.

Moreover, we strive to raise CSR Report's reliability and transparency by having the report undergo third-party certification.

- [Click here for more information concerning third-party certification.](#)



1) The Corporate Ethics Committee

JSR Group practices and promotes corporate ethics by setting down the JSR Group Principles of Corporate Ethics—a code of conduct for fulfilling our "responsibility to our stakeholders," one of the management policies that support the realization of our management philosophy—and establishing a Corporate Ethics Committee chaired by the officer in charge of general affairs.

The Corporate Ethics Committee makes certain that JSR's Course of Action is recognized throughout the organization as a statement demanding compliance in the Group's daily corporate activity. The committee also regularly confirms the circumstances of compliance each year and works to continually improve them.

Our concern for ethics also extends to our internal reporting system. For employees, we have an internal hotline connected to the Corporate Ethics Committee, an external hotline connected to a designated independent attorney, and an external hotline connected to an independent and specialized outside organization that is capable of handling communication in English, Chinese, Korean, and Thai. We have also set up an external hotline for our business partners.

- [Click here for details concerning our corporate ethics and compliance-related initiatives.](#)

2) The Responsible Care (RC) Committee

We engage in responsible care based on our belief that "making sustainable development possible" is a form of corporate responsibility. Seeing this as a key issue that is fundamental to management, we are working for the effective promotion of company-wide responsible care-related activities by establishing a Responsible Care (RC) Committee that is chaired by the officer in charge of safety and environmental affairs.

The committee approves plans that concern responsible care and evaluates and verifies the results of related activities. It also works to maintain and improve the level of responsible care practiced in such areas as the elimination of accidents, reduction of environmental burden, chemical management, and product safety.

- [Click here for details concerning our responsible care-related initiatives.](#)

3) The Risk Management Committee

We believe that preventing major crises and minimizing their effects on business activities should they occur are important management challenges. Given this, we have formulated Risk Management Policies and established a Risk Management Committee that is chaired by the officer in charge of corporate management.

The Risk Management Committee promotes continuous improvement of response guidelines and response plans for both manifested and potential crises.

- [Click here for details concerning our risk management-related initiatives.](#)

4) The Social Contribution Committee

We established a Social Contribution Committee that is chaired by the officer in charge of corporate communications. The committee studies new activities and advances existing activities based on JSR Group's Philosophy for Occupational Health and Safety.

- [Click here for details concerning our social contribution-related initiatives.](#)

(1) JSR Group Principles of Corporate Ethics

The JSR Group Principles of Corporate Ethics stipulate our corporate code of conduct. This code must be adhered to by all JSR Group executives and employees (full-time, contract, part-time, and temporary employees) so that we may fulfill the individual responsibilities to our stakeholders that are spelled out in our management policies; namely, Responsibility to our Customers/Business Partners, Responsibility to our Employees, Responsibility to Society, and Responsibility to Shareholders.

- [Click here for JSR Group Principles of Corporate Ethics \(PDF 2,192 KB\)](#) 

(2) Approach to Workplace Safety, the Environment, Quality, Product Safety, and Chemical Management

- **Safety:** Continue our record of accident- and disaster-free operations to ensure the safety of our employees and the local community as we coexist with society.
- **Environment:** Reduce environmental impact throughout our entire business cycle, from product development to product disposal, doing our part to preserve the environment.
- **Quality:** Offer quality products and services that both meet customer requirements and ensure user safety.
- **Product Safety:** Verify safety at all stages, from raw materials to finished products, protecting the health and property of all individuals involved.
- **Chemical Management:** Strive to manage our entire supply chain and promote self-motivated initiatives to comply with regulations by utilizing a globally standardized method.

(3) Approach to Risk Management

- Our Group believes that preventing a major crisis from occurring and minimizing the influence of any crisis that may occur on business activities is an important role of management. The Group has established a Risk Management Committee, and actively pursues risk management activities.

(4) Approach to Social Contribution

- Our Corporate Mission dictates that we make a contribution to society through our business activities. Further, we are actively engaged in fulfilling social requirements and addressing issues as a responsible member of society.
- We are continuously engaged in positive social contribution activities, capitalizing on our chemical and technological knowledge and skills that form the core of JSR's business.
- Every employee is a point of contact between the Company and society, and we actively support our employees in their voluntary participation in social contribution activities.

(5) Approach to Taxes

JSR Group supports the following philosophy as provided by the Chief Financial Officer (CFO).

- JSR Group will comply with the taxation laws of each country in which it does business, including that regarding transfer pricing and tax havens.

(6) Approach to Human Rights

- We will respect the human rights and individuality of each person and will not discriminate in terms of employment or working conditions on the basis of sex, age, nationality, ethnic group, race, origin, religion, beliefs, social position, physical disability, or sexual orientation.
- In all transactions, we will consider our social responsibilities in legal and regulatory compliance, resource protection, environmental conservation, safety, and human rights throughout the entire supply chain, with the fundamental focus on fair and transparent transactions that are based on economic rationality.
- We will respect and uphold basic human rights, such as the Universal Declaration of Human Rights, declared internationally and protected under the constitutions and legal precedents of each individual country, and will not infringe on basic human rights.

(7) Approach to Procurement

- When making purchases, we will give sufficient consideration to safety, human rights, legal and regulatory compliance, resource protection, environmental conservation, biodiversity, and other factors that lead to a sustainable society.
- We never permit the direct or indirect use of conflict minerals.

2. Key Stakeholders Involved with JSR Group

Our involvement with the key stakeholders that are involved with JSR Group is based on the understanding that everything begins from society's expectations. We emphasize dialogue with our stakeholders to avoid self-serving decisions.



Management Policy - Responsibility to our stakeholders

Responsibility to our customers / business partners

When interacting with our business partners and customers, JSR Group will:

- Constantly evolve to meet the demand for new materials
- Always strive to increase customer satisfaction
- Act in good faith and maintain fair and equitable business relations
- Continue to be socially and environmentally conscious throughout the supply chain

Responsibility to our employees

All employees should expect:

- To be evaluated and rewarded based on fair standards
- Continuous opportunities to grow by challenging themselves
- Acceptance of the diversity of fellow colleagues and to be provided a place where all employees can work together as a team

Responsibility to society

All members of JSR Group will honor our responsibility to both the local and global communities through:

- Responsible and respectful business practices (Responsible Care) that consider the environment and safety
- Support of environmental conservation by providing eco-friendly products
- Reduction of our environmental impact throughout the entire product lifecycle
- Active contribution to conserving biodiversity throughout its business activities and the entire product lifecycle

Responsibility to shareholders

Group will maintain its responsibility to its shareholders by:

- Aiming to increase corporate value by creating business opportunities through materials
- Constantly enhancing its management efficiencies
- Inspiring trust by being highly transparent and conducting sound corporate management practices

- [Click here for more information on JSR Group's communication with stakeholders.](#)

JSR Group's CSR

Priority Issues to be Addressed by JSR Group

As part of our efforts to integrate our management and CSR, we identify priority issues to help realize a sustainable global environment and society. To assist us in this process, we arrange issues using a matrix comprised of two axes; namely, "Importance for JSR Group (Internal Factors)" and "Importance for Stakeholders (External Factors)." We then identify those that have high priority for our Group and for our stakeholders as "Priority Issues Considered by JSR Group." In April 2017, which marked the start of our mid-term business plan "JSR20i9," we rearranged priority issues into three categories—"Social Issues that JSR Group Can Help Resolve," "Social Issues Attributable to JSR Group's Corporate Activity," and "Basic Issues in JSR Group's Corporate Activity"—with a view to advancing our CSR activities.

Social Issues that JSR Group Can Help Resolve	Social Issues Attributable to JSR Group's Corporate Activity
Eco-Friendly Products Health and Longevity Better Access to Healthcare and Medical Care Quality of Life and Happiness	Health and Safety Initiatives Environmental Impact Reduction Climate Change Mitigation Water Resources Conservation Waste Reduction Human Rights Labor Environment Diversity Supply Chain Management Communication with Shareholders
Basic Issues in JSR Group's Corporate Activity	
Corporate Governance Compliance Risk Management Responsible Care	

We believe that the priority issues will evolve with changes in society's demands on us and in accordance with our various stakeholders' views and needs. We will therefore review and re-specify them through the following operations.

- 1) We will confirm the issues' validity each year by conducting checks through engagement with experts, employees, responsible care activities, and the like.
- 2) We will periodically review priority issues while maintaining the transparency and acceptability of the process for specifying them by exchanging views with experts whenever we formulate a new mid-term plan.

In FY2018, we held a dialogue with experts on the theme of "Work-Style Innovation x Digitalization." In it, we addressed the priority issues of labor environment and diversity, items that are among the Social Issues Attributable to JSR Group's Corporate Activities. The dialogue identified challenges that JSR Group must address from the standpoint of sustainability.

■ Primary topics of discussion during previous meetings with experts

- 1) Annual discussions to confirm issues' validity

2010: Diversity

2012: Conservation of Biodiversity

2014: JSR Group Environmental Protection Efforts
2015: Corporate Mission and CSR through Business
2017: Work Styles and the Development of the Human Resources that will Lead JSR Group in the Next Generation
2018: Work-Style Innovation x Digitalization

2) Discussions for periodic review
2013: JSR Group CSR
2016: Verification of Priority Issues to be Addressed by JSR Group

JSR Group's CSR


JSR Group's Mid-Term CSR Plan

JSR Group formulated the following "JSR Group Mid-Term CSR Plan JSR20i9" based on a vision of itself vis-à-vis CSR around the year 2030. The plan is linked to the "JSR Group Mid-Term Business Plan" that came into effect in FY2017.







Basic Issues in JSR Group's Corporate Activity

Basic Issues in JSR Group's Corporate Activity	Long-term goals (to 2030)	Initiatives under JSR20i9	Goals under JSR20i9	Related SDGs
Corporate Governance	A firm management system oriented toward sustainable growth is functioning and trusted by society.	Continued response to the Corporate Governance Code and improved effectiveness	<ul style="list-style-type: none"> Expansion of opportunities to provide information to stakeholders 	—
Compliance	Behaviors that are based on pride and responsibility are being practiced by executives and employees throughout JSR Group.	<ul style="list-style-type: none"> Compliance with the laws and regulations of all countries Precise response to legal revisions Reinforcement of monitoring Continued instruction on corporate ethics 	<ul style="list-style-type: none"> Reinforcement of legal compliance in major countries Continued implementation of education on laws and regulations, public announcement of cases of inappropriate behavior within the Group, and stronger awareness of compliance and corporate ethics with the CSR explanatory briefings 	—
Risk Management	Responses for reducing risk and preparations for emergencies are ready throughout the entire Group.	<ul style="list-style-type: none"> Risk is understood and shared throughout the entire Group and appropriate measures are established Reinforcement of information security 	<ul style="list-style-type: none"> Identification of risks corresponding to changes and application of PDCA to them Formulation of business continuity plans for domestic Group companies Reduction in the number of information risk cases 	—

Social Issues Attributable to JSR Group's Corporate Activity




Social Issues Attributable to JSR Group's Corporate Activity	Long-term goals (to 2030)	Initiatives under JSR20i9	Goals under JSR20i9	Related SDGs
Health and Safety Initiatives	JSR's safety culture is developed, the value of "safety first" reaches all employees, and safe and secure	<ul style="list-style-type: none"> Safety foundation Reinforcement of the safety foundation for eliminating workplace accidents and process accidents 	<ul style="list-style-type: none"> Shift from "reactive"* approach in which action is taken only after something happens Laying of groundwork for a shift from "dependent"* 	 8 DECENT WORK AND ECONOMIC GROWTH

	workplaces are maintained.	<ul style="list-style-type: none"> ● Safety culture Penetration of safety values and maintenance of personnel 	<p>approach (focusing on own tasks only and leaving the rest to others) to "independent"* approach (each person takes the lead in safety activity)</p> <p>* Safety culture evaluation indicator based on DuPont's "Integrated Approach for Safety"</p>	
Environmental Impact Reduction	<ul style="list-style-type: none"> ● Reduced impact on the air environment ● Steady reduction of chemical substance emissions (VOC, PRTR, etc.) 	<ul style="list-style-type: none"> ● Continuation of management using per-unit-of-sales index ● Reduction of chemical substance emissions (VOC, PRTR, etc.) 	<ul style="list-style-type: none"> ● SOx, NOx, and dust emissions: Continued management using per-unit-of-sales index (not to worsen compared to the present state) ● VOC emissions, PRTR emissions: Formulation of continuous improvement measures (Clarification of direction of improvement through improvement of material balance precision and screening of reduction measures) 	<div>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</div> <div>13 CLIMATE ACTION</div> <div>14 LIFE BELOW WATER</div>
Climate Change Mitigation	Continued contribution toward achieving the Paris Agreement's goals and development of a low-carbon society (CO2 emissions: Achieve reductions with attention to government goals)	Promotion of lower CO2 emissions and energy savings in response to the Paris Agreement	<ul style="list-style-type: none"> ● Promotion of efforts for reductions with attention to government goals ● 1% annual reduction in specific energy consumption in line with the Energy Savings Act 	
Water Resources Conservation	Impact on water resources is reduced to near zero in all areas and sustainable water use becomes possible.	<ul style="list-style-type: none"> ● Higher recycling rate and contribution to biodiversity preservation with better water quality preservation technology and facilities ● Higher water use efficiency 	<ul style="list-style-type: none"> ● Wastewater: Response to the 8th water use regulations (YP) and continuous improvement in the use-per-unit-of-sales index (COD, total phosphorus, total nitrogen) ● Intake water: Maintenance of current amount of recycled water 	
Waste Reduction	Reduced total amount of generated waste 15% reduction compared to the FY2013 level by 2030	Reduction of amount of waste generated, including waste discharged from outside worksites	<ul style="list-style-type: none"> ● Amount of waste for final disposal: Continued landfill percentage of all generated waste of no more than 0.05% ● Total discharged amount: Continuous improvement toward long-term goal (The target during the mid-term plan will be roughly 1/3 of the long-term goal.) 	
Human Rights	<ul style="list-style-type: none"> ● Human rights-related issues that must be addressed in the Group and globally are identified and being addressed. ● Human rights issues in major suppliers are understood. 	Promotion of and response to human rights due diligence	<ul style="list-style-type: none"> ● Introduction of systematic implementation of human rights training (implemented for three years for all executives and employees) ● Implementation of surveys based on an "expanded version of CSR/sustainable procurement" for major suppliers and 100% application of feedback 	10 REDUCED INEQUALITIES

Labor Environment	Highly motivated workplaces where employees have job satisfaction, where pride and morals are shared, and where initiatives that pay attention to pride and responsibility can be executed are maintained and developed.	<ul style="list-style-type: none"> Promotion of employee health and building of motivation Promotion of work-life balance Further enhancement of HR development 	<ul style="list-style-type: none"> Continuous improvement of a corporate culture based on the results of employee awareness surveys Promotion of health measures using data analysis Establishment of PDCA and KPI for health management Promotion of initiatives for reducing overtime work Further adjustment of attendance management Implementation of measures to promote the taking of paid annual holidays Promotion of work styles that pay attention to productivity (free address, etc.) Study toward introduction of a telecommuting system Enhancement of in-house education and expansion of off-the-job training that fit with the career ambitions of individual employees 	<div>8 DECENT WORK AND ECONOMIC GROWTH</div> 
Diversity	Diverse values are created in line with JSR's status as a global company and are accepted	Promotion of employment and appointment of women and people with diverse nationalities, and development of a culture that accepts and applies different values	<ul style="list-style-type: none"> Promotion of understanding of the significance of diversity and how it applies to everyone Promotion of activities to spread the concepts of diversity and inclusion throughout the company Promotion of increases in the number of female candidates for management positions and utilization of foreign employees Preparation of daily life guidelines for foreign employees and provision of support for them 	<div>5 GENDER EQUALITY</div>  <div>10 REDUCED INEQUALITIES</div> 
Supply Chain Management	CSR/sustainable procurement is practiced throughout the entire supply chain, and JSR is contributing to the resolution of social issues in cooperation with suppliers.	Maintenance of stable procurement and quality improvement by promoting CSR/sustainable procurement	<ul style="list-style-type: none"> Implementation of surveys based on an "expanded version of CSR/sustainable procurement" for major suppliers and 100% application of feedback 	<div>10 REDUCED INEQUALITIES</div>  <div>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</div> 
Communication with Stakeholders	<ul style="list-style-type: none"> JSR is a manufacturer that is trusted by communities Financial information and non-financial information are appropriately disclosed and communication with shareholders 	<ul style="list-style-type: none"> Promotion of social contribution activities that highlight JSR's sustainable orientation (visiting lessons, etc.) Promotion of communication with the communities Appropriate disclosure of financial information and stronger disclosure of non-financial information 	<ul style="list-style-type: none"> Continued implementation of visiting science lessons and lectures, etc. Support for discussions and active communication with plant neighbors Timely and appropriate information disclosure with website renewals 	<div>17 PARTNERSHIPS FOR THE GOALS</div> 

	and investors is maintained.			
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Social Issues that JSR Group Can Help Resolve

Social Issues that JSR Group Can Help Resolve	Long-term goals (to 2030)	Initiatives under JSR20i9	Goals under JSR20i9	Related SDGs
Eco-Friendly Products	The company's eco-friendly products lineup is enhanced and contributing to the resolution of environmental impact and other social issues, and is achieving higher corporate value as a result.	<ul style="list-style-type: none"> Expansion of sales of eco-friendly products in accordance with the new definition Start of operation of an in-house authentication system that uses the JSR Sustainability Index 	<ul style="list-style-type: none"> Over 30% sales share of eco-friendly products (Targets to be set in a manner linked to the mid-term business plan's sales targets for relevant businesses.) 	<div>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</div>  <div>13 CLIMATE ACTION</div> 
Health and Longevity	The company is helping promote a "shift from treatment to prevention" and "personalized care," and is achieving higher corporate value as a result.	Expansion of the Life Sciences Business with focus on "advanced diagnosis" and "biopharmaceutical processing," and development of businesses that make contributions to treatments and drug discovery	<ul style="list-style-type: none"> Achievement of the goals of the mid-term business plan Realization of technical development that contributes to advanced diagnosis and personalized care 	<div>3 GOOD HEALTH AND WELL-BEING</div> 

Dialogue with Stakeholders

Achieving JSR's Sustainability: Considering Work Styles of the Future (1)



In the interest of integrating its management and CSR, JSR Group identifies priority issues and presents them in its CSR reports to help realize a sustainable global environment and society. For this year's report, we discussed themes concerning the labor environment that are part of "Social Issues Attributable to JSR Group's Corporate Activity."

When people hear the phrase "work-style reform," they tend to think of main efforts to achieve numeral targets in terms of shortening overtime hours, taking of childcare leave, and so on. However, JSR Group takes a different approach. It refers to this concept as "work-style innovation" and defines it as going beyond just efforts to reduce work hours and achieve work-life balance.

We recently invited experts on this topic to join with employee representatives for a discussion intended to verify that this is an issue concerning sustainability.

We selected "work-style innovation x digitalization" as the discussion's theme. The participants addressed the theme through in-depth dialogue that was primarily based on the following two perspectives.

1. Future work styles in a progressing "digital society"

Discussion of the required abilities and skills and the ways employees and management should change in the social environment of 2025 or 2030, when artificial intelligence (AI) will become commonplace.

2. Current HR management challenges

Discussion of assessment systems improvement, diversity issues, achieving greater work efficiency, etc.

The employee representatives who participated in the discussion were mainly mid-career employees. They are people who are leading the company into the next generation and are symbolic of "today," a time when the words "digitalization" and "diversity" are routinely used. We anticipate that they will apply the new insights and perspectives that they gained through their interaction with experts in JSR Group's future activities.

Participants (honorifics omitted)

The outside experts



Hiroko Nomura

**Professor, School of Expression Studies,
College of Humanities, Shukutoku
University**

Professor Nomura is a graduate of Ochanomizu University's Faculty of Letters and Education. After working at the employment information company U.P.U., she joined the start-up team for Nikkei Anthropol, a monthly magazine for businesspeople published by Nikkei Home Publishing, in 1988. She became a deputy editor-in-chief for Nikkei Woman in 1995 and editor-in-chief in January 2003. In December of 2006, she became editor-in-chief of Nikkei EW, Japan's first magazine for female leaders. She joined Nihon Keizai Shimbun Inc.'s editorial board in September 2007 and became a deputy editor-in-chief of Nikkei Money in April of 2012. She has been a professor in Shukutoku University's College of Humanities since April 2014. She serves as a member of various bodies, including the Fiscal System Council and Japanese National Commission for UNESCO.



Mizuto Aoto

**Representative of DAnCing Einstein (DAE)
and Neuro-Inventor.**

Mr. Aoto graduated as an accelerated placement student from the Department of Neurology of the University of California, Los Angeles (UCLA) in the United States. He is the representative of DAnCing Einstein, a venture company that he founded in 2014 based on his passions for the brain and education. Having launched a field called "NeuroEdTech"—the first in the world to link the brain, education, and IT—DAE creates new learning experiences for the world and designs fun and exciting approaches to learning and teaching. Neither a cerebral research organization nor educational institution, DAE connects neuroscience and many other technical fields to highly imaginative education and HR development settings.

JSR



Kei Sawada

(Production Technology
Department)



Satomi Inomata

(Corporate Communications
Department)



Ikuyo Kamiya

(Research and Development
Department)



Takeshi Yuasa

(Research and Development
Department)



Daichi Suemasa

(Research and Development
Department)



Yoshikazu Yamaguchi

(Senior Officer)

Moderator: Hidenori Imazu

Program member of the academic association "Japan Forum of Business and Society"



[Go to Part 1 "Future work styles in a progressing 'digital society' "](#)

Dialogue with Stakeholders

Achieving JSR's Sustainability:
Considering Work Styles of the Future (2)

Future work styles in a progressing "digital society"

Considering the roles of AI and people in the future

Aoto: Quite honestly, no one knows how people will be working in 2025 and 2030. Nonetheless, I think daring to think about what isn't known and which doesn't seem to have an answer is one of the abilities that people will need in the future. Conversely, I think that patterned work in which answers are drawn out quickly, for example, is something at which AI excels.

Suemasa: My department's work is in R&D and the creation of new inventions, so I don't think it will be replaced by AI. For us, the question will be how to make such creative work more efficient. For example, I believe the aggregation of data and knowledge and the expansion of person-to-person links will become important.

Yuasa: I agree. The R&D activity of existing businesses can probably be made more and more efficient with AI. But if we're starting a new business, no practical data exist, so AI cannot provide best performance. Indeed, I think humans must think about such areas where answers are not readily available.

Sawada: Right now, a lot of work is going into gathering data to advance AI's application. However, this work will be eliminated in the future as IT advances. As routine tasks are eliminated on the one hand, data will continue to expand. Therefore, people will likely need skills in arranging and distinguishing that data and, further, creativity in determining how the data will be used.

Aoto: AI runs on programs and data that are provided to it by human beings. However, in the field of neuroscience, the mechanisms of the brain are being understood biologically, and the generation of AI based on speculation on how the brain may react to interpersonal services is already beginning. Perhaps there will be new innovation in the design of data points. Additionally, AI has the ability to randomly extract various forms of information, which is something people are not very good at. I sense that this will produce seeds for innovation. I feel that new creativity will be needed for determining how people will handle the seeds that AI produces.

What people will need as they learn to coexist with AI

Nomura: AI is writing articles on financial statement announcements for the Nikkei online edition. This and other developments show that AI is beginning to appear in fields that no one thought possible just a few years ago. Some years ago, a study by Oxford University created a stir when it concluded that 49% of Japan's jobs could be replaced by artificial intelligence and robots. I

don't think we need to accept this figure at face value. However, the report stated that "creativity" and "cooperation" will be needed for the jobs that cannot be replaced by AI and that



only people can do. The word "cooperation" can be replaced with "social intelligence." I believe that we will need to polish this ability in the years ahead.

Aoto: One point mentioned as necessary for accepting future uncertainty is "adaptability." The human brain has evolved to produce a negative emotional reaction to unseen phenomena as a means of protection from danger. That's why it's so hard for us to accept new things. On the other hand, we can process information on things we are familiar with efficiently. This is because when we use the same neural circuits in the same way repeatedly, the neurons there develop and information is transmitted with just a small electric impulse. It is for this reason that people tend to choose things they are familiar with. We also know that men and women grasp environmental changes differently. I think that, first of all, we must consider things based on recognition of the nature and diversity of human beings.

Inomata: I think that's right. I think we will increasingly need communication skills in the future. If we look at tools for communication, first email appeared and then LINE* arrived. At first, I thought, "I don't need LINE." But when I started using it, I found it to be quite handy. New and different communication tools will probably appear, so I think we must have the ability to adapt to those new tools.

* LINE is a communication app that was released in June 2011. It is reportedly used by more than 217 million people worldwide. Among its features are one-on-one and group chat functions and free calling.

Aoto: I think that as we hand over to AI more and more tasks that can be entrusted to it, people will become more human. What I mean is, we will act more with feeling, say emotion or a sense of unity. Even when viewed in terms of the brain, although we understand that each of the systems of theory and emotion operate in completely different parts of the brain, we largely see the significant degree to which emotional factors affect people's decision-making. Right now, we are often told "Don't get emotional" in the workplace. But I think that, conversely, it is possible that emotions will come to be valued.

Yamaguchi: Undoubtedly, there are many ways in which we move with emotion. Indeed, feelings of frustration can be a major driving force for people.

Aoto: It seems to me that great value remains in human beings' efforts to process information that is difficult to arrange into a pattern and non-linguistic information within the brain. For example, there is the feeling of "strangeness" that we experience from time to time. You feel that something is odd, but you can't put it into words. This comes from the part of the brain called the anterior cingulate cortex. I think its ability to produce this feeling is a very important capability. Normally, if you say to your boss, "Something is odd here," your boss will immediately reply, "OK, explain why." But I think the time will come when this feeling will have importance precisely because there is no reason why.

Sawada: Certainly, unexpected malfunctions can occur at manufacturing sites, perhaps due to gradually aging equipment, but sometimes the people there sense that something is wrong before it happens.

Suemasa: Even in research, there are times when an experiment fails for an unknown reason, and we use AI to analyze its causes. But because AI makes its evaluation based on data supplied by human beings, it of course reaches the same conclusions. We then consider what to do next using clues gleaned from people's sense of strangeness and awareness.

Aoto: It's not just a feeling of strangeness. If we sense that "something about this is interesting" or "this may go well," that feeling can lead to innovation. Isn't that the feeling that Steve Jobs and Kazuo Inamori* were so exceptional at grasping?

* Kazuo Inamori:

A distinguished Japanese businessman and corporate manager. He is the founder of Kyocera

Corporation.

Kamiya: It is said that even academic researchers benefit from the hope of encountering serendipity in their research. What becomes necessary for researchers and developers is foresight, or thinking about things that seemingly have no answer. I think the question of how well engineers can refine this will become more and more important in the future.

Failure brings forward progress.

Aoto: Failure is also very important. Mistakes happen, and because they do, we can make new discoveries from them. This is also one of the values that people bring. If we view failures in a negative light only, we will learn nothing and be left with nothing more than a bad feeling. That's why in our company we hold weekly presentations to learn by finding ways to laugh about our failures.

Yuasa: In fact, until a great success is achieved, more than 90% of the trial and error data results in failure. However, thanks to the lots of failures, remarkable improvements are made and eventually the innovation occurs. Even in my own experience, it sometimes happens that an unintended failure actually turned out new discoveries. Therefore, what humans will need to do going forward might be to fail or to take on challenges freely without constraints.

Aoto: I think that to do this, it is important to have education that changes the way we look at failure, beginning particularly at a very young age. One of my favorite phrases is "An activity that stops at failure becomes a failure. If you continue until you succeed, the activity will become a success." It adds that "A person who can see his failure as a good lesson is a person who will grow later." Even when viewed from a scientific perspective, this conforms with the principle of rewriting emotions. If you fail, it is important to find ways to view that failure positively.

Nomura: The company must have a culture that accepts failure. Having the ability to learn from failure is also very important in career development.

Yamaguchi: Looking at the importance of failure, in one area, ten-thousand prototypes are made but only twenty are accepted. What this means is that 9,980 failures are allowed. In recent years we have been hearing the phrase "fail fast," but JSR has had such a culture for a long time. No one knows what will happen when something becomes a project or business. Those of us in management must convey this to our employees.



[Go to Part 2 "Current HR Management Challenges"](#)

Dialogue with Stakeholders

Achieving JSR's Sustainability:
Considering Work Styles of the Future (3)

Current HR Management Challenges

Challenges concerning the current assessment system

Suemasa: Looking at challenges concerning current human resources management, I think one point worth discussing is that the assessment method ultimately assesses progress toward initially-established targets. I think that we will need to have agile assessment that includes acceptance of failure as uncertainty grows in the years to come.

Yamaguchi: That's right. In addition, although the assessment system has rules to some extent, there are aspects of it that depend on interpretation by the supervisors who are managing personnel. So I think the system should be made to have clearer numerical values for more objective assessment. I think consideration is needed in terms of what should be done so that the assessment system improves employees' motivation.

Aoto: Although assessment of results is important, it is also necessary to grasp the entire process. This is because the brain learns through what is called "episodic memory" (memory based on individual experiences). Emotional memory is always linked to episodic memory. The emotions that are manifested during a project remain as memory and become motivation for the next project. For example, if a person does a project and only the final results are evaluated, and only the pay received leads to positive feelings about the project, the person's motivation when doing the next similar project that comes along will be money alone. On the other hand, if a person has an experience in which he was able to solve a mystery through repeated failure or made a new discovery or shared an emotion with other team members, his brain will spontaneously link to it and learn. If this happens, the motivation will be more than just money.

With diversity, awareness must go beyond systems.

Inomata: JSR is also tackling diversity issues, and part of its effort includes a variety of initiatives that involve utilizing women. However, I feel that no matter how many new mechanism we put in place, we won't make much progress unless awareness and thinking change with respect to individual women.

Nomura: The problem of awareness is quite important, isn't it. "Unconscious bias" is receiving attention in diversity now. No matter how we develop our various systems and conduct various forms of training, this issue does not penetrate through the organization as well as it should because it is unconsciously imprinted upon the organization's fabric that men and women should be a certain way. We must first get people to realize the fact that we are bound by such unconscious prejudice.

Aoto: By nature, men and women have differences that come biologically from their chromosomes. So I think it's pointless to consider men and women exactly the same in all instances. Men and women have different brain structures and their corpora callosa, which link the brain's left and right sides, have different sizes. It is also known that women are better at multitasking. Unless we develop a perspective that accepts these differences between the sexes and creates

circumstances in which each can succeed and work comfortably, real equality will be unattainable.

Nomura: There is one more thing I would like to mention. If we think about why there are so many calls for the utilization of women, it is because, in today's Japan, the difference between men and women in terms of share of management and continuous service years is too great compared to Europe and the United States. In other words, it is because women's abilities are not being fully utilized. If we let things take their natural course, I think it will take a hundred years before we achieve a society in which men and women can participate actively and equally. That is far too long. If we don't shorten this to at least 20 years or so, Japan will be fall behind the rate of change in the world. I think Japanese companies should be fully aware of this issue and execute measures.



Aoto: It may be possible to achieve HR management that puts the right people in the right positions, regardless of whether they are men or women, by accepting individuals and individual differences and applying AI to discern their particular abilities and character as well as likes and dislikes.

What should be done to raise job efficiency?

Sawada: I think there are still cases where efficiency improvement has not been achieved. Sharing information takes time and effort—for example, when the production technology sector and manufacturing sites share data to study processes.

Nomura: That's probably an area where there's room to apply IT.

Yuasa: One problem I see is how to take measures against the increasing number of discussions and meetings. Even if we change the way we work by bringing in useful tools and the like, we end up losing time we can control for ourselves when more and more meetings are scheduled.



Kamiya: In my department, after we took Six Sigma* training, teams were formed to tackle the problem of overly long meeting times. The teams move meetings along by preparing a suitable agenda and assigning facilitators (people who move the meeting along in a productive direction) and timekeepers. I think these teams have done a good job of shortening meeting times. We have also introduced the free address system to our offices. This improves work efficiency by making it easier for us to communicate with each other, including with people with whom we had little interaction before. In this sense, I feel we are beginning to make progress in visible ways.

* Six Sigma is a quality control and management method that was developed by Motorola of the United States.

Nomura: As you just mentioned, you have positive examples for dealing with discussions and meetings. Why don't you try extending them laterally to other parts of your organization? Things may change even with just a little information-sharing in your company. I also think that speaking frankly on a routine basis will help shorten meeting times. It might be a good idea to introduce mechanisms that support informal communication.

Kamiya: However, over the past few years, we have been implementing various approaches, starting with work-life balance followed by work-style reform projects. But there is talk that these approaches are not about reducing overtime. So, honestly, we're not really sure which direction we're going. I get the sense that ordinary employees don't really grasp what these efforts are about.

Yamaguchi: That's a problem on the management side. One item included in the fiscal 2018 schedule for the mid-term business plan is "reconfirm the vision and provided value of each department." In other words, it is a call to reexamine why we do a certain operation—for what end, for whom, and for what purpose. This may eliminate the need to prepare documents and reduce work as a result. From this perspective, changing the way we work is work-style innovation.

Nomura: The true objective of work-style reform is not to reduce overtime work. I think it is important for management to strongly communicate this message. If the purpose of the program is not communicated, overtime work might become something done for free and you could end up putting employees in a tough spot. I should add with regard to advancement of women's participation and work-style reform that there is data showing that productivity does not improve much when only systems are changed but does improve when those efforts are combined with IT. So it seems you still have room to consider ways of combining them.



Connecting the ideas of young people to the next generation

Yamaguchi: Returning to the topic of work styles of the future, traditionally, if you mentioned the word "work," people thought of doing a job and receiving pay for it. But I feel that there will be a change from this concept. When I was in university, I heard the phrase "the dictionaries that are in our heads contain the word kando (movement based on emotion) but not rido (movement based on reason)." I always thought that was the truth. People do not act based on reason alone. We stay up to play games and read books even when we're tired because we find them interesting. People do not act unless they feel some kind of empathy or inspiration. Looking at this from my perspective, I am reminded that getting employees to feel that in their work and working with enthusiasm is the challenge.

Aoto: Summing up our discussion today in my own way, I'd say that it's about "enjoying Chaos as individuals." A world heretofore unimagined will be born and uncertainty will increase with the growing presence of AI. This means we will need is a state of mind oriented toward enjoying it. As a result, people will become more human and each individual will become more like him or herself. And I think that we will enter a time when individual differences are valued.

Nomura: I think we will enter a time when stronger human communication skills are required. Efforts to reform work styles and advance women's participation are unlikely to succeed unless we practice a different kind of communication. For example, women who work short hours must talk with their supervisors about their current circumstances and their needs. Their supervisors won't understand those matters unless women actively communicate with them. At the same time, supervisors must also create an environment that permits their subordinates to speak comfortably. In this sense, I think you could say that work-style reform equals communication reform.

Yamaguchi: We have had a very meaningful time today, having heard two experts and young JSR employees discuss some important topics. I feel that the most important thing is to link the ideas that you,

the members of the younger generation, expressed today to the next generation. It is our job in management to continuously lay the groundwork so that even one or perhaps two of the things we discussed today will be realized ten or twenty years down the line. The exact same thing will be applicable when the time comes for you young people to enter management. I think this will give JSR Group sustainability in its true sense. Let's continue steadily creating opportunities to do this and share awareness of these issues. Thank you all for a very enlightening discussion.

May 9, 2018, at JSR Corporation Headquarters

Basic Issues in JSR Group's Corporate Activity

Corporate Governance

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy

It is JSR Group's goal to make steady progress in realizing its corporate mission (Materials Innovation: We create value through materials to enrich society, people and the environment).

This shall be done through efficient and transparent business management by sustaining sound and healthy business practices.

The Group will also continuously strive to create new corporate values with the hope of becoming an attractive corporation that can earn the trust of and satisfy the interests of all our stakeholders.

For the purpose of achieving sustainable growth and enhance mid-long term corporate value and in response to the corporate governance code set, the Group has been endeavoring to further develop systems that ensure prompt management decisions while maintaining transparency and fairness thereof and satisfying accountabilities to stakeholders.

2. Corporate Governance Structural Diagram

As a company with Audit & Supervisory Board members, JSR strives to strengthen and expand its corporate governance system based on a system whereby its Board of Directors and Audit & Supervisory Board members monitor and supervise the execution of duties by directors and management.

We have endeavored to strengthen management supervision functions, ensure rationality in decision-making and business execution, and achieve greater speed and efficiency by introducing an officer system, appointing independent outside directors possessing extensive business experience (three directors) and independent and outside Audit & Supervisory Board members possessing broad expertise and abundant experience (two members). We are also striving to improve the transparency and soundness of our business management and achieve higher medium- and long-term corporate value by, for example, setting policies for director appointments and remuneration through the establishment of a Nomination Advisory Committee and Remuneration Advisory Committee, the majority of whose members are outside directors and whose chairpersons are outside directors, and the introduction of performance-linked remuneration covering the short and medium term.

The Board of Directors conducted a "board of directors' effectiveness evaluation" with the help of outside experts. The evaluation appraised the Board of Directors' size, composition, specific management policies, and other matters and confirmed that the board is operating appropriately. We will continue aiming for constant improvement in our corporate value by evaluating our Board of Directors' effectiveness each year and striving to achieve even higher board effectiveness.

Current as of June 15, 2018



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Basic Issues in JSR Group's Corporate Activity Compliance

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

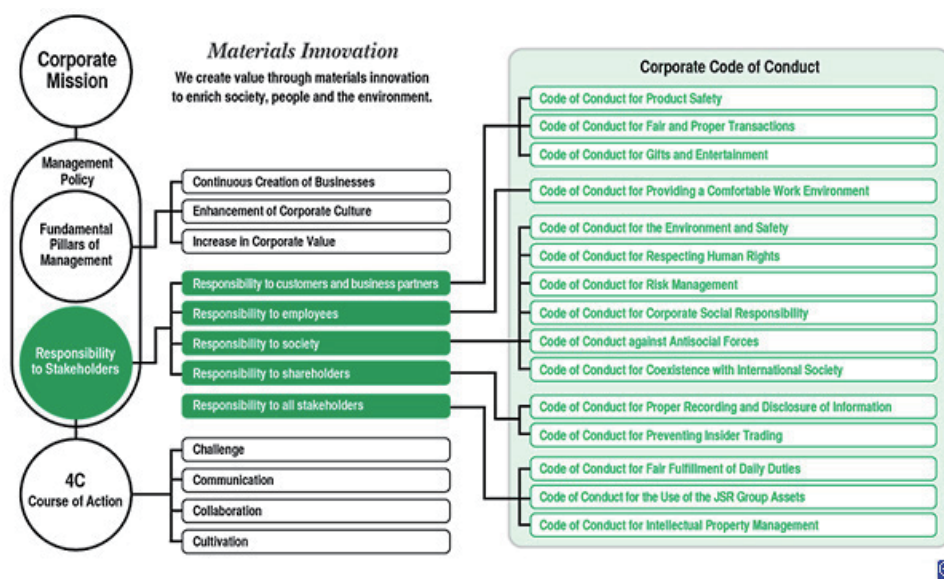
1. Philosophy

JSR Group has been endeavoring, by building up and maintaining good relationship with all our stakeholders, to become a trustworthy and indispensable corporate citizen.

We have been vigorously performing our Code of Conduct in order to materialize "Our Responsibility to our Stakeholders", an essential part of our Management Policies, as well as to ensure compliance with the relevant laws and regulations during the course of our business.

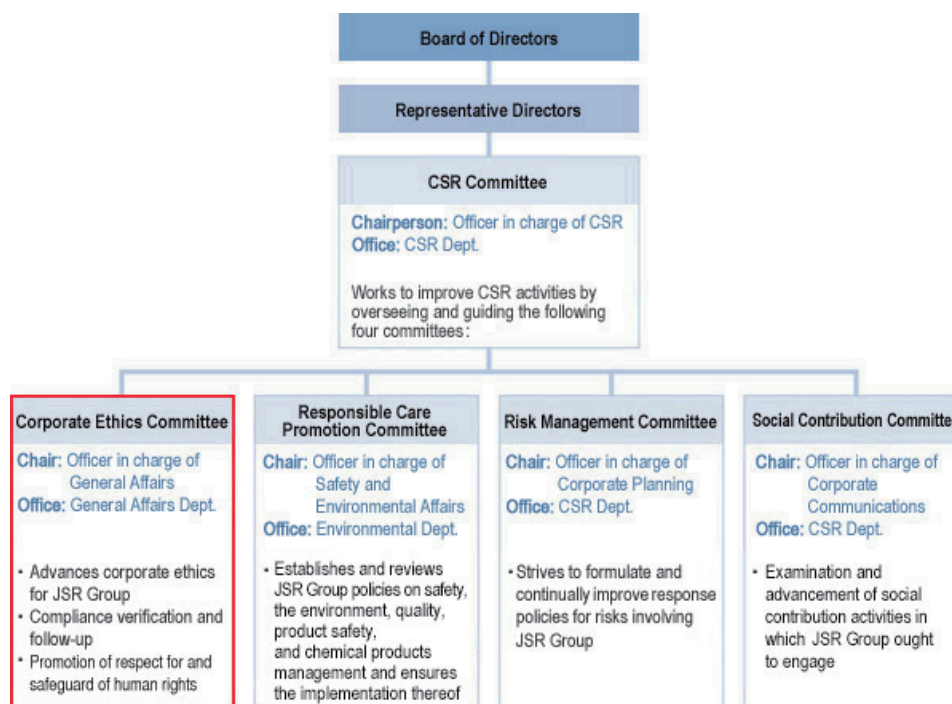
2. JSR Group Principles of Corporate Ethics

JSR Group is advancing corporate ethics activities in an integrated manner at all Group companies both at home and abroad. To achieve this, we have formulated the JSR Group Principles of Corporate Ethics as a concrete guideline for globally-shared corporate ethics that reflects our "Essential Elements." The principles serve as a Code of Conduct that all directors and employees (full-time, contract, part-time, and temporary employees as well as employees on short-term contracts) of JSR companies should comply with in order to develop our corporate activities while fulfilling the management policies spelled out in "Our Responsibility to our Stakeholders." JSR Group shall never require directors and employees of Group companies to act in violation of this Codes of Conduct. Additionally, JSR Group shall not disadvantage any director or employee who refuses to execute an order to perform an act that is in violation of the Code of Conduct because of that refusal.



3. Structure

Corporate Ethics Committee of JSR is responsible for advancing the Group wide activities such as promotion of corporate ethics activities, monitoring and enhancing legal compliance, and promotion of respecting and safeguarding human rights.



4. Corporate Ethics Activities

JSR Group has been pursuing the following 3 major corporate ethics activities;

(1) Education on JSR Group Principles of Corporate Ethics

JSR Group formulated the JSR Group Principles of Corporate Ethics to serve as a globally-shared Code of Ethics. By preparing English, Simplified and Traditional Chinese, Korean and Thai versions in addition to the Japanese version, we are ensuring that directors and employees at all Group companies can become acquainted with the JSR Group Principles of Corporate Ethics in their native language or in a language in which they are proficient. Moreover, each year we provide an e-learning program on the Principles of Corporate Ethics for all employees of JSR Group companies in Japan. During FY2017, we incorporated the themes of confidential information management, prevention of abuse of power, and prevention of data falsification into the program. We also conduct corporate ethics training for new recruits and newly promoted managers.

JSR Group Principles of Corporate Ethics

- Japanese ([PDF 2,527KB](#))
- English ([PDF 2,244KB](#))
- Simplified Chinese ([PDF 2,708KB](#))
- Traditional Chinese ([PDF 4,994KB](#))
- Korean ([PDF 2,386KB](#))
- Thai ([PDF 11,235KB](#))

(2) Corporate Ethics Awareness Survey

JSR Group works to grasp and improve corporate ethics-related issues by conducting annual surveys on corporate ethics awareness that target the directors and employees of JSR Group companies in Japan and overseas. The results are reported at the Corporate Ethics Committee and then to an Officers Committee. They are subsequently

fed back to employees by being posted in a summarized form on the company intranet together with a message from the assigned officer explaining issues and other matters gleaned from the results. Some overseas Group companies also strive to build awareness of corporate ethics and legal compliance among their employees, including their locally hired employees, using methods that are appropriate for the local culture.

(3) Hotline (Internal Reporting Channels)

- **Hotline for Employees**

The JSR Group has introduced a system of internal reporting channels called the "Corporate Ethics Hotline." The "internal hotline" is connected to the Corporate Ethics Committee in JSR or the relevant Group company. The "external hotline" is set up to connect to two contact points. One is a designated independent attorney and the other is an independent and specialized outside organization capable of handling communication in Japanese, English, Chinese, Korean, Thai, and Indonesian. This system is designed to facilitate use even by overseas employees. We encourage our employees to use these hotlines through promotions via internal newsletters and other media, and strive to build trust in the hotlines by ensuring confidentiality and prohibiting unfair treatment of hotline users. We also hold regular once-yearly meetings between the corporate ethics officers of domestic Group companies and JSR's Corporate Ethics Committee for the purposes of getting all Group companies in Japan on the same page and tackling ethics-related issues. Furthermore, we post and display guides for accessing the hotlines on the company intranet and online internal newsletters to make the hotlines easier to use.

Number of Reports to the Hotline

(calls or e-mails)

FY	2013	2014	2015	2016	2017
JSR	4	8	5	3	2
Group companies	8	6	11	3	4
Total	12	14	16	6	6

For each report that comes in, the office of the Corporate Ethics Committee in the company concerned asks the relevant department to ascertain the facts. The office then discusses and decides on responses based on the department's findings, and later follows up on the results. If the reporter desires feedback, the contact point that initially received the report contacts him or her with the results as well as the responses taken. Six reports were received during FY2017. Of them, four involved abuse of power. Suitable responses are being implemented in all cases.

- **Hotline for Business Partners**

JSR employs at its Procurement Department a "Suppliers' Hotline," an external reporting channel for business partners, namely suppliers and services providers, with whom domestic Group companies do regular business. It receives reports from business partners to quickly discover and resolve violations of the law as well as actual and possible violations of corporate ethics in business transactions. The Suppliers' Hotline is entrusted to the same outside organization employed for the employees' hotline.

(Calls or e-mails)

FY	2014	2015	2016	2017
JSR	0	0	0	0
Group companies	0	0	0	0
Total	0	0	0	0

5. Legal Compliance Measures

Every JSR Group member defines legal compliance regulations that form the basis of its legal compliance. Each company then uses the regulations to solidify its compliance through regular review and improvement as well as legal training to increase awareness of laws and regulations and instill commitment to compliance. JSR Group identifies laws and regulations that are particularly relevant to the execution of business as Overall Significant Laws and Legal Regulations, and concentrates on establishing individual systems to ensure compliance with these critical laws and regulations.

(1) Reviewing and Improving Legal Compliance

JSR Group identifies the laws and regulations that require compliance in each country, and confirms on a yearly basis that group business activities conform thereto. The regular sharing of information on cases of non-compliance within JSR Group is useful in preventing legal violations and quickly detecting and improving non-compliant situations. It also helps improve awareness of compliance.

The number of Group companies is growing as JSR Group's global activities expand, particularly in the Life Sciences Business. In light of this, we are focused on supporting the formulation of legal compliance regulations in all Group companies.

(2) Training and Increasing Awareness

1) Compliance Handbook

Group is thoroughly publicizing important points that demand legal compliance among employees in Japan, South Korea, and China by issuing Japanese, Korean, and Chinese versions of JSR's Compliance Handbook. The Chinese Version is issued to not only Group companies in China but also JSR departments and Group companies that sell products, supply samples, or otherwise engage in business dealings with Chinese enterprises. Through it, we are working to ensure thorough understanding and practice of legal compliance in China.

We revised the Compliance Handbook's Japanese version during FY2017 and redistributed to employees in April 2018. The revision covered content pertaining to recent cases of data falsification and fabrication at other companies and revisions of related laws.



Compliance Handbook

2) Seminars and E-Learning

We held periodic seminars and provided e-learning programs for directors and employees of all JSR companies as part of legal education to ensure full organizational knowledge of laws demanding compliance. The main seminars held in FY2017 were as follows.

February: Subcontract Act seminar

March: Export Control seminar

August, September, November, and December: Antitrust Act seminar

We also provided e-learning on the Subcontract Act, Antitrust Act, export control, and anticorruption-related laws in March.

We also provide legal education that has been customized to meet the requirements of individual departments and Group members. We provided individualized education for employees being sent to new assignments (training on the Antitrust Act, anticorruption laws, etc.). We also held chemical substances seminars at various locations in Japan and, as part of them, provided education on domestic laws (Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., Industrial Safety and Health Act, Poisonous and Deleterious Substances Control Act, etc.) and overseas laws.

6. Protection of Personal Information

JSR Group recognizes the importance of protecting personal information under the circumstances of highly advanced information and communication technologies. We have therefore formulated a Privacy Policy and Rules for Handling Personal Information that sets out our basic approach to the acquisition, use, and management of personal information based on the Act on the Protection of Personal Information. We have also established Rules for

Handling Specific Personal Information in response to the introduction of Japan's Individual Number system.

Moreover, in accordance with relevant laws and our privacy policy, we ensure the appropriate handling of specific personal information in the company by defining precautions and security standards necessary to ensure the proper use and protection of this information at each of the stages of acquisition, storage, use, provision, disclosure, correction, suspension of use, and deletion. Furthermore, for Group companies that will handle personal data covered by the EU's General Data Protection Regulation (GDPR), we are providing support for the development and operation of a GDPR compliance system to be applied to the acquisition, processing, and transfer of covered personal data.

Basic Issues in JSR Group's Corporate Activity

Risk Management

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy

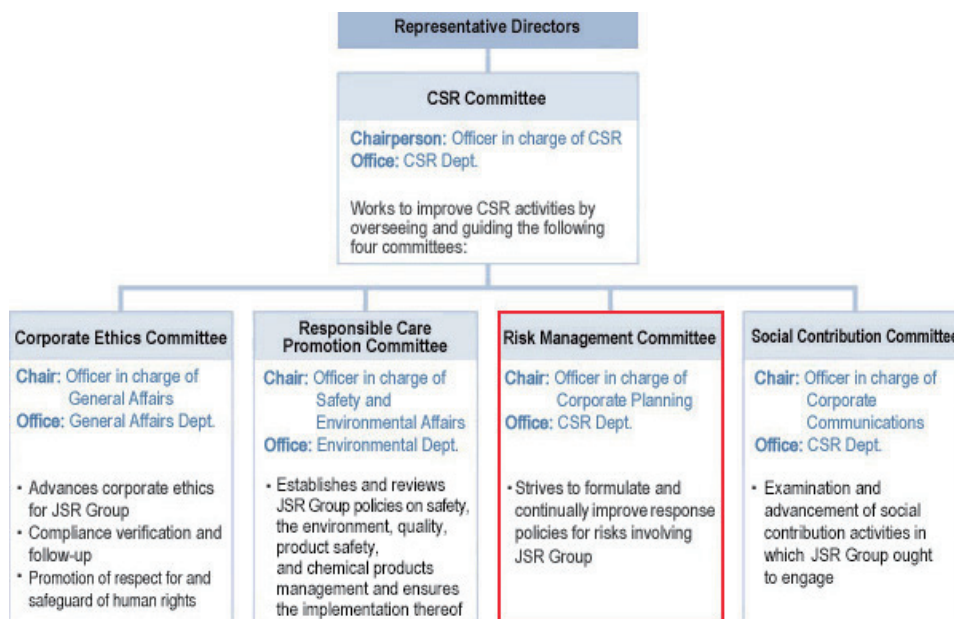
JSR Group believes that preventing a major crisis from occurring and minimizing its impacts on business activities is an important management role. The Group has formulated Risk Management Policies and established a Risk Management Committee through which it actively pursues risk management activities.

- [Click here for Basic Views and Policies on Corporate Governance of JSR.](#)
- [Click here for Page 5-6 Risk Information of Annual Report Financial Section \(PDF 909 KB\)](#) 

2. Risk Management System

JSR Group risk management is handled by the Risk Management Committee, which performs group-wide risk management and formulates response policies concerning actual and potential risks other than those arising in the normal course of business that are addressed in major conferences such as meetings of the Board of Directors*.

* Risks arising in the normal course of business that are addressed in major conferences, such as meetings of the Board of Directors are strategic risks that include those associated with capital investment and M&A.



3. Risk Management Measures

(1) Risk Management

Since FY2009, JSR Group has fulfilled group-wide annual risk management procedures using its unique risk management system under the initiative of the Risk Management Committee. For each division of JSR Group companies in and outside of Japan, we identify and evaluate all potential risks, and formulate measures to control such risks. In FY2015, we revised risk identification methods after reviewing the validity of previous JSR Group risk management. Utilizing a risk map that represents level of business impact and frequency of occurrence, we identify risks that could have a significant impact on business continuity and organize them risks into the JSR Group Risk Factors. By monitoring and regularly reviewing risks that senior management has personally ascertained, we are building and maintaining a system for prevention and crisis preparedness.

(2) BCM Enhancement

1) We have published BCM procedures

Procedures which comprises BCM/BCP* systems in place for both peacetime and emergency situations. These procedures define the BCM organization and the actual BCP, which includes stipulations on target recovery times, and BCP activation and cancellation standards. They also define the organizational structure that takes effect during activations of the BCP, and corresponding priority businesses and operations.

* BCM: Business Continuity Management/BCP: Business Continuity Plan

A BCP defines activities that need be conducted before the occurrence of an emergency situation that may threaten the survival of a company (large-scale natural disaster, explosion/fire, terrorist attack, etc.), judgment criteria and action guidelines that enable business continuity in the event of such emergencies, and other matters necessary for ensuring the continuity and early restoration of important businesses. BCM is a management system that has been developed to operate and continuously improve the BCP through a PDCA (plan-do-check-act) cycle.

2) Major Earthquake Preparations

JSR Group adopted a mid-term business plan in FY1995 concerning preparations for a major earthquake and has been conducting systematic activities to enhance those preparations. After FY2006, we began a seismic retrofitting project focused on high-pressure gas facilities in our plants, and installed an earthquake early-warning system at all JSR business sites. Based on lessons learned from the experience of the Great East Japan Earthquake, we are further reinforcing the anti-seismic capabilities of our buildings and implementing safety measures by incorporating the perspective of countermeasures against tsunamis. These initiatives are scheduled for completion by FY2020.

Yokkaichi Plant Administration Building

The Yokkaichi Plant Administration Building, completed in December of 2013, can withstand earthquakes of up to 600 Gals using two types of seismic isolators: laminated rubber and oil dampers. In addition, the lattice structure ground improvement method was used to prevent liquefaction to help further improve resistance to earthquakes. This building has warehouses in preparation for disasters and was designed to ensure enough space for the headquarter functions to continue in the event of disasters in the headquarter region (metropolitan Tokyo area). This building also functions as the Yokkaichi City Tsunami Evacuation Building for local residents.

Yokkaichi Plant Clean Room Building C

Completed in July of 2014, Yokkaichi Plant Clean Room Building C incorporates advanced soil liquefaction prevention measures and a seismic isolation structure to ensure the stable operation of precision instruments and resistance to earthquakes. Valuable equipment is installed in higher floors to prevent possible damage from tsunamis.

(3) Enhancement of Initial Response to Emergencies

1) Crisis Management Training

Since 2004, JSR has held crisis management training once a year to strengthen the ability of the headquarters for accident and crisis control in the Head Office (Minato Ward, Tokyo) to respond in a time of crisis. Members from the

headquarters participate in the training, and JSR's President acts as the headquarters' director. The training for FY2017 was based on a scenario in which an earthquake strikes Tokyo (specifically, a major earthquake centered in the northern area of Tokyo Bay), causing damage at not only the Head Office but also plants and offices in the Kanto area, including those of JSR Group companies. The scenario further assumed that the chief decision-maker in the headquarters is not present, making it necessary for another employee to take over the headquarters' operations.



The headquarters for accident and crisis control during the FY2017 crisis management training

In the past, the training was a simulation of responses on the day of a disaster, with the main focus being on verifying the headquarters' operation and coordination of information. However, in this year's training, primary attention was paid to the responses of each of the headquarters' teams on the second day following a disaster. It was conducted using a "blind scenario" format.* Some 50 people, including those affiliated with the Head Office's headquarters for accident and crisis control, participated. Each confirmed the personal and organizational actions that are demanded, including spontaneous information-gathering in an ever-changing situation and the establishment of response guidelines.

By conducting drills that anticipate a variety of potential disasters, we will continue to make the preparations needed to ensure safety, control damage, maintain business continuity.

* Blind scenario format

A drill format that gives participants a constantly changing disaster or damage situation based on an undisclosed scenario, and then asks them to independently consider, identify, and execute responses.

2) BCP Training for Group Companies

We held BCP training for JSR Group companies in Japan during FY2017.

The training was the first ever held for the purpose of strengthening the crisis response capabilities of headquarters for accident and crisis control in Group companies. Twenty people from seven Group companies participated. Through the training, the participants gained renewed recognition of the importance of setting decision-making standards for appropriate responses during emergencies in advance, and the importance of continually improving emergency-response manuals. We will continue implementing training that anticipates a variety of crises with Group companies. We will also continue making preparations that will allow JSR Group to limit damage and maintain business operations following a crisis.



BCP training for JSR Group companies

3) Disaster Management Training at each plant and laboratory

JSR Group conducts disaster management and evacuation training and drills on a regular basis. It is imperative that we minimize the impacts of emergencies and ensure business continuity in such situations.



General disaster drill conducted jointly by plants and offices in the Kashima District (JSR, Japan Butyl, and Kraton JSR Elastomers)

4) Safety Confirmation System

In FY2009, we introduced a safety confirmation system to promptly confirm the safety of our employees in the event of a large-scale earthquake or other disaster. In FY2011, we expanded the system's coverage to our Group companies and the families of our employees.

5) Infection Preparedness

In the case of an epidemic or the spread of influenza and other infections, we stockpile masks.

We also provide necessary information such as the announcement of flu outbreaks.

Prior to the 2017 flu season, we invited doctors and nurses to JSR's Head Office and the Yokkaichi, Chiba, and Kashima Plants to administer vaccinations to those who desired one. This activity was intended to keep infections from spreading in our workplaces and also to make sure that the cases of influenza that do occur stay minor.

6) [Click here for information on our responses to legal risks and compliance risks.](#)

(4) Enhancing Information Security

JSR Group adopted an Information Security Policy and is working to implement appropriate information management by informing all personnel of the policy.

Information Security Policy

- The JSR Group (the corporate group consisting of JSR Corporation and its subsidiaries) will observe laws and other social norms relating to the handling of information belonging to the Group and its customers, business partners, and other third parties, and will protect that information in appropriate ways.
- The JSR Group will strive to develop and actively use its information assets for the efficient execution of its business. The Group's officers and employees will only use these information assets for the purposes of their work and within the scope of their authority.
- The JSR Group will improve organizations and systems, provide education on information security, thoroughly disseminate this policy and related regulations, and implement measures to ensure information security.
- The JSR Group will implement appropriate human, organizational, and technological measures and work to prevent unauthorized access to information assets from outside the company, as well as leaks, falsification, loss, theft and destruction of information assets.
- If an information security-related problem occurs, the JSR Group will promptly identify the cause and take measures to minimize damage and prevent recurrences.
- The JSR Group will periodically assess and review its information security measures to respond appropriately to changes in external environments.

JSR Group is continually working together with external experts to increase our level of security and protect corporate information assets from cyber-attacks. In FY2014, we issued an Information Security handbook to raise employee sensitivity to information leakage risks and help ensure that employees are aware of and follow rules regarding information security. We also conduct targeted attack drills using fake viruses to raise prevention



awareness. In addition, we are engaged in raising awareness of the content in the Information Security handbook through e-learning and workplace meetings.

**Information
security
handbook**

Basic Issues in JSR Group's Corporate Activity

Responsible Care (RC)

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy
 - (1) Promotion Items and Policy
 - (2) International Initiatives
2. RC Promotion Structure
3. Environment and Safety Management
 - (1) Organization
 - (2) Compliance
 - (3) Environmental Management System
 - (4) Industrial Health and Safety Management System
 - (5) Certified High-Pressure Gas Establishment Audits
 - (6) Environment and Safety Audits
4. Quality and Product Safety Management
 - (1) Organization
 - (2) Product Liability Prevention (PLP) Activities
 - (3) Maintaining Transport Safety and Environmental Standards
 - (4) Quality Management System
 - (5) Quality Audits
5. Chemical Management
 - (1) Organization and Basic Policy
 - (2) Compliance
 - (3) Measures for Export Chemical Products
 - (4) Industrial and International Measures
 - (5) Initiatives in Supply Chain Management
 - (6) Safety data sheets (SDS)
6. Stakeholder Engagement

Dialogue with employees, local communities, customers, and shareholders
7. Disclosure of Legal and Regulatory Violations

1. Philosophy

JSR Group developed its Environment Safety Management Policy promotion items with reference to "Management Policies - Responsibility to Our Stakeholders" and the Japan Chemical Industry Association's "Guiding Principles for the Improvement of Environmental, Safety and Health Conditions." We use these items as the basis for formulating concrete activity plans and advancing our RC activities.

[Management Policies - Responsibility to Our Stakeholders](#)

What is RC?

RC is an acronym for Responsible Care®. In the chemical industry, each company handling chemical substances is responsible for ensuring that safety, health, and environmental issues are addressed throughout the chemical

lifecycle, from development and production to distribution, use and disposal, publishing the results of their activities and maintaining dialogue and communication with society - all voluntarily. This initiative is called "Responsible Care."



Source: Japan Chemical Industry Association pamphlet "Do You Know about Responsible Care?"

(1) Promotion Items and Policy

1) Development of Safety-Focused and Environmentally-Friendly Products

When developing new products, JSR Group evaluates the environmental, safety and health impact at every stage from research and development to production, transport, use and disposal, and makes the utmost effort to provide products that take such evaluations into consideration.

2) Provide Safety and Environmental Information Related to Products

JSR Group sets in place a system for the management of product-related safety and environmental information, and provides Safety Data Sheets (SDS) to customers and yellow cards to transporters as necessary.

3) Preserve the Environment and Assure safety for Local Communities

JSR Group takes a positive approach in its measures for preserving the global environment, facility safety, and protection against major earthquakes, taking into consideration the impact its business activities have on the environment. JSR Group's objective is to earn even greater trust at its business locations.

4) Reduce Environmental Impact

JSR Group conducts studies on the environmental impact of chemical substances and works toward the systematic reduction of emissions. JSR Group engages in thorough efforts to reduce sources of emissions, reuse materials, and recycle resources in order to reduce environmental impact.

5) Assure Safety and Environmental Preservation in International Operations

JSR Group cooperates with cross-border transfers of environmental and safety technologies. Regarding corporate activities overseas, JSR Group strictly complies with the regulations of Japan and other nations, and makes every effort to assure safety and environmental compliance at each operating site outside Japan.

6) Ensure Employee Health and Safety

Constantly at work on the pre-assessment of safety matters related to chemical substances and their handling, JSR Group is dedicated to improving operations and facilities, and to creating a healthy and safe workplace environment.

(2) International Initiatives

JSR Signs Declaration Supporting RC Global Charter

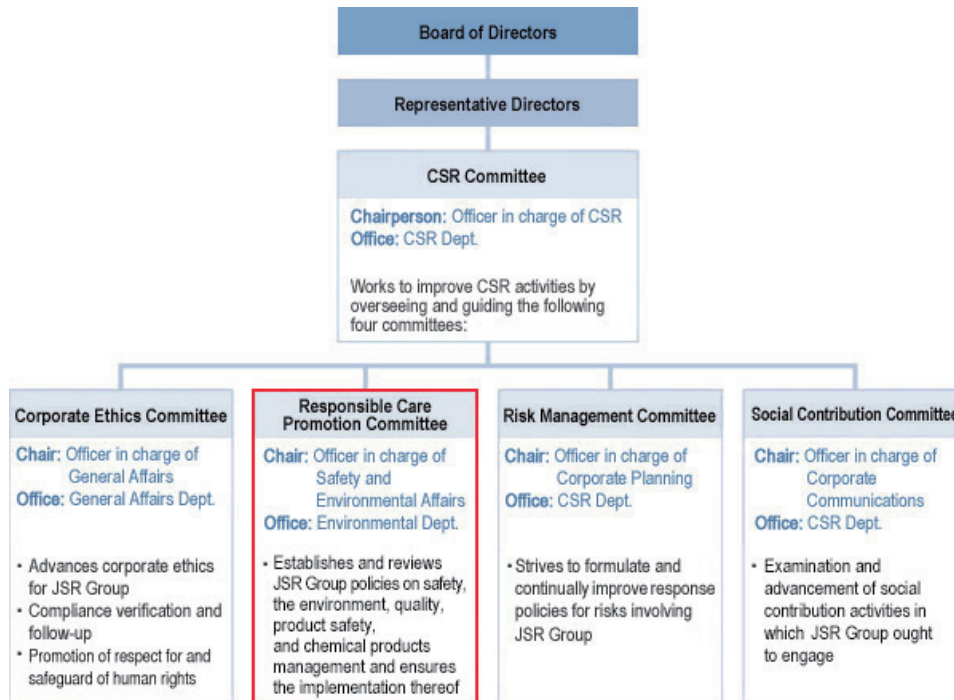
The Responsible Care (RC) Global Charter is a voluntary activity policy adopted by the International Council of Chemical Associations (ICCA) and shared by the chemical industry to enhance and reinforce RC activities around the world. JSR subscribes to this activity policy, and signed a declaration supporting the RC Global Charter in October 2008. JSR has also signed the revised RC Global Charter in March 2015. By signing the declaration, JSR has committed itself to making even greater contributions to health, safety, and environmental preservation not just in Japan, but around the world.



Declaration of support for RC Global Charter

2. RC Promotion Structure

Aiming to contribute to a sustainable society, we formulate our RC activity promotion policy and activity plans and verify the results of our promotion activities through the Responsible Care Promotion Committee.



The Responsible Care Promotion Committee is responsible for JSR Group's environmental and safety management, quality and product safety management, and chemical management.

3. Environment and Safety Management

(1) Organization

Established under the Responsible Care Promotion Committee are a Safety General Conference, an Environmental Protection General Conference, a Plant Safety Committee, and a Plant Environment Committee that are in charge of concrete operations and activity promotion. Progress reports are presented to the Responsible Care Promotion Committee for discussion and then go to the CSR Committee and senior management.



(2) Compliance

When environmental and safety laws are adopted, enacted, or amended, the Head Office distributes information to each business site to keep them fully informed. JSR Group identifies laws and regulations requiring compliance in each country based on compliance regulations and conducts annual self-checks to ensure that business practices conform with laws and regulations through the entire Group.

In the spirit of our Responsible Care philosophy, we strive to acquire our plant and operator certification under various security and safety laws. This enables plants and operators to create higher quality health and safety management systems in addition to clarifying their responsibilities and rights. As a result, certification plays an important role in improving safety technologies. At JSR, we are proceeding with efforts to have all plants acquire plant and operator certification under the High-Pressure Gas Safety Act, the Fire Service Act, and Industrial Safety and Health Act. We will continue to maintain and upgrade certifications with the aim of improving maintaining safety and preventing accidents.

Certification	JSR Plant	Date	Remarks
High Pressure Gas Safety Act Certification Inspector (Completion, Safety)	Yokkaichi Plant	September 2015	Certification renewal
	Kashima Plant	March 2016	Certification renewal
	Chiba Plant	March 2017	Certification renewal
Fire Service Act Test at Completion of Hazardous Materials Facility Upgrade	Yokkaichi Plant	March 2016	Certification renewal
	Kashima Plant	March 2016	Certification renewal
	Chiba Plant	June 2017	Certification renewal
Industrial Safety and Health Act Test of Class 1 Pressure Vessel Operation	Yokkaichi Plant	March 2018	Certification reacquired
	Kashima Plant	January 2017	Certification renewal
	Chiba Plant	March 2018	Certification renewal

(3) Environmental Management System

By 1999, all three main domestic JSR plants had acquired ISO 14001 certification, an Environment Management System that supports environmental management. We have kept our certifications up to date each year since. We proceeded with preparations in response to ISO 14001 revisions that were released in September 2015 and brought all three of our plants in line with them by January 2018.

Tsukuba Research Laboratory is restructuring its environmental safety promotion system in accordance with ISO 14001 standards due to the launch of JSR Life Sciences Corporation and the reorganization of the research laboratory.

ISO 14001 Certification

Japan (11 companies, 16 business establishments)	International (9 companies, 9 business establishments)
JSR Corporation Japan Coloring Co., Ltd. Techno Polymer Co., Ltd.* JSR Engineering Co., Ltd. Japan Butyl Co., Ltd.	Elastomix (Thailand) Co., Ltd. (Thailand) JSR Micro Korea Co., Ltd. (South Korea) JSR Micro, Inc. (United States) JSR Micro N.V. (Belgium) Tianjin Kuo Cheng Rubber Industry Co., Ltd. (China) Kumho Polychem Co., Ltd. (South Korea)

Elastomix Co., Ltd.	JSR BST Elastomer Co., Ltd. (Thailand)
JSR Micro Kyushu Co., Ltd.	JSR Micro Taiwan Co., Ltd. (Taiwan)
Emulsion Technology, Co., Ltd.	Elastomix (Foshan) Co., Ltd. (China)
JM Energy Corporation	
JSR Logistics & Customer Center Co., Ltd.	
Kraton JSR Elastomers K.K.	

* Techno Polymer Co., Ltd. merged with UMG ABS, Ltd. and became Techno-UMG Co., Ltd. on April 1, 2018.

(4) Industrial Health and Safety Management System

JSR builds and manages a health and safety system that is based on the Occupational Health and Safety Assessment Series (OHSAS). The system is designed to manage the industrial health and safety risks to employees and others concerned, continuously improve our industrial health and safety systems, and reduce workplace accidents and health disorders.

(5) Certified High-Pressure Gas Establishment Audits

Each year, we conduct headquarters audits of our certified plants - the Yokkaichi Plant, Chiba Plant, and Kashima Plant - as a certified high-pressure gas business. Through our FY2017 audits, we again confirmed that all of our certified plants are in compliance with our safety management system. We also looked for data mishandling as a special item and found no problematic incidents.

(6) Environment and Safety Audits

1) Headquarters Environment and Safety Audits

JSR Headquarters conducts annual audits of its plants and research laboratories with the president acting as head of the auditing team. Launched in FY2015, headquarters environment and safety audits involve holding discussions with each business establishment, sharing issues faced by audited departments, and tying the results to improvement. We set up dialogues between top management and employees that serve as opportunity for sharing the two sides' thoughts and stimulating environmental and safety activities.

In FY2017, audits verified that the thoughts of managers at each plant establishment had penetrated through their organization, and that activities matched to that particular location's operations were being carried out. They then identified common issues that also exist in other business establishments. Moreover, they went beyond just providing feedback to business establishments by extracting and providing suggestions for matters to be presented to management or headquarters. In FY2018, we will select departments to be audited based on key challenges, occurrence of accidents, organizational reform, and other matters and conduct audits with focus on responses to risks existing in those departments.



President Koshiba visiting a plant



A dialogue with President Koshiba



A top-level audit

2) Environment and Safety Audits in JSR Group Companies

At JSR, we implement environment and safety audits at our Group companies in Japan that are involved in production, transportation, and engineering processes in order to achieve integrated Responsible Care activities. We applied the JSR audit system to Group companies in Japan in FY2016 and expanded it to overseas Group companies in FY2017. The audits have allowed to verify activities in each company and share information on them. In addition to the audits, we held EHS (Environment, Health & Safety) meetings in Japan with JSR Micro Inc. and JSR Micro NV.

Audited Dept. of FY2017 Headquarters Environment and Safety Audits	
JSR (plants)	Yokkaichi Plant, Chiba Plant, Kashima Plant

JSR Group companies (in Japan)	Japan Butyl, Techno Polymer*, Elastomix, JSR Engineering
JSR Group companies (overseas)	JSR Micro Taiwan, JSR Micro Korea, JSR BST Elastomer

* Techno Polymer Co., Ltd. merged with UMG ABS, Ltd. and became Techno-UMG Co., Ltd. on April 1, 2018.

4. Quality and Product Safety Management

The Corporate Mission of JSR Group: "Materials Innovation - We create value through materials to enrich society, people and the environment."

We believe that an important role of JSR Group is to offer innovative materials and excellent products that meet customer needs and contribute to the making of a better society.

We strive to carry out initiatives to ensure the quality and safety of our products so that our customers can use them with peace of mind.

(1) Organization

We promote activities in accordance with corporate plans by establishing a PLP Promotion Conference and Group-wide Quality Policy Committee under the Responsible Care Promotion Committee. These bodies study and deliberate matters concerning the prevention and handling of product liability as well as matters concerning quality policy and quality assurance promotion plans. Reports on their deliberations are presented to the Responsible Care Promotion Committee for discussion and then go to the CSR Committee and senior management.



(2) Product Liability Prevention (PLP) Activities

In 1994, JSR enacted its Product Liability Prevention (PLP) Standards to reinforce product safety efforts. These PLP Standards have been revised as needed to provide various stipulations for the prevention of product-related accidents at all stages of the product lifecycle, including product design, manufacturing, sales, and distribution. One example is a system for new products to be introduced to the market whereby each product undergoes safety checks starting at the product design stage, and is put on the market only after having received approval from the department manager. Similar efforts are currently being made at Group companies as well.

To prevent accidents related to products, we also strive to improve quality management throughout our supply chains - everything from raw materials procurement through distribution - by acquiring information through communication with our customers and by strengthening activities to prevent product-related accidents, such as through the revision of our quality management system and the updating of assessment technologies.

(3) Maintaining Transport Safety and Environmental Standards

JSR outsources the distribution of its products. JSR has drivers carry a "Yellow Card" imprinted with special measures and telephone numbers in case of emergency, in addition to having logistics companies train them on

specific safety issues.

(4) Quality Management System

All main plants are ISO 9001-certified, including relevant divisions and indirect departments.

ISO 9001-certified plants:

Japan (11 companies, 16 business establishments)	International (9 companies, 9 business establishments)
JSR Corporation Japan Coloring Co., Ltd. Techno Polymer Co., Ltd.* Japan Butyl Co., Ltd. JM Energy Corporation JSR Life Sciences Corporation Elastomix Co., Ltd. JSR Logistics & Customer Center Co., Ltd. Kraton JSR Elastomers K.K. JSR Micro Kyushu Co., Ltd. Emulsion Technology, Co., Ltd.	Elastomix (Thailand) Co., Ltd. (Thailand) JSR Micro Korea Co., Ltd. (South Korea) JSR Micro, Inc. (United States) JSR Micro N.V. (Belgium) Tianjin Kuo Cheng Rubber Industry Co., Ltd. (China) Kumho Polychem Co., Ltd. (South Korea) JSR Micro Taiwan Co., Ltd. (Taiwan) JSR BST Elastomer Co., Ltd. (Thailand) PT. Elastomix Indonesia (Indonesia)

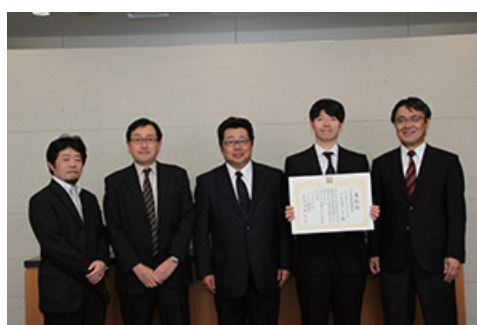
* Techno Polymer Co., Ltd. merged with UMG ABS, Ltd. and became Techno-UMG Co., Ltd. on April 1, 2018.

(5) Quality Audits

As a manufacturer, JSR Group has responsibilities to meet the quality, cost, and supply requirements of its customers. To fulfill these responsibilities, top management-led quality performance audits have been performed annually since FY2012 in place of the previously conducted head office quality audits. These audits include reports on plant QA activity concerns such as trends and corresponding solutions of claims and other issues, and activities to improve plant capability. They also include reports on customer satisfaction levels and presentations on quality improvement activities such as Six Sigma training and small-group improvement activities. The Quality Performance Audit is promoted as one of the drivers for quality improvement activities by combining the conventional QC method with the Six Sigma method in order to achieve the best possible balance between quality, cost, and stable supply. The sixth Quality Performance Audits were conducted at JSR's three plants in January and February of 2018.



A Quality Performance Audit being conducted by top management (JSR Corporation's Chiba Plant)



Presentation of a Quality Performance Audit's "highest excellence" award (at JSR Corporation's Head Office; March 27, 2018)

FY2017 Quality Performance Audits

Place	Date
Yokkaichi Plant	January 30, 2018
Chiba Plant and Kashima Plant (joint audit)	February 14, 2018

5. Chemical Management

(1) Organization and Basic Policy

In light of recent global trends in chemical management, JSR has established the following three basic policies in its environment and safety management organization.

- 1) Instead of hazard-based management,^{*1} we will endeavor to implement risk-based management.^{*2}
- 2) We will strive to manage our entire supply chain by utilizing a globally standardized method.
- 3) We will strive to comply with regulations and promote self-motivated initiatives to ensure the safety of our products.

^{*1} Management based solely on the hazardous properties of substances

^{*2} Management based on exposure to the hazardous properties of substances

(2) Compliance

1) Responding to the Amendment of the Industrial Safety and Health Act

In accordance with the amendment of the Industrial Safety and Health Act in 2014, starting June 1, 2016, manufacturers are required to label chemical substances, submit the relevant SDS and conduct risk assessments. This amendment significantly increases the chemical substances subject to labeling. We have completed steps to comply.

2) GHS Compliance

The Globally Harmonized System of Classification and Labeling of Chemicals (GHS) was developed as an international standard to classify and label chemicals, and includes the following elements: (a) Classification of chemical products according to hazard and toxicity; (b) Labelling on product packaging and containers; and (c) Documentation and provision of details in the SDS. In Japan, the Industrial Safety and Health Act and the Law concerning Pollutant Release and Transfer Register (the PRTR Law) stipulate mandatory application of GHS to the labels and SDS of products containing GHS-designated chemical substances. JSR has finished conducting hazard and toxicity classification for all products that contain applicable substances and has prepared appropriate labels for its products. We have also completed the application of GHS to SDS for all our domestic products. We will also strive to ensure our compliance with laws concerning this matter that are being enacted in other countries.

(3) Measures for Export Chemical Products

- European Union (EU): Compliance with REACH

REACH is a EU system for the "Registration, Evaluation, Authorisation and Restriction of Chemicals" that has been in effect since June 2007. REACH does not differentiate between existing chemical substances and new chemical substances. All chemical products manufactured in or imported by EU countries in volumes exceeding one ton per year, excluding certain chemicals, are required to be registered and accompanied by safety test results. We conduct verifications on a regular basis to check if we have any substances that require this registration in order to prevent issues developing with the manufacturing and importation of products in Europe.

- United States of America (USA)

The USA notification system for new chemical substances is stipulated in the Environmental Protection Agency's Toxic Substances Control Act (TSCA) and related federal regulations. We conduct legal procedures if substances exported to the U.S. are not on the existing chemical lists. We are also moving forward with legal procedures concerning existing chemical substance notifications and other matter based on the revised TSCA, which came into force in 2016.

- Republic of Korea (South Korea)

The South Korean notification system for new chemical substances has been defined on the basis of the Occupational Safety and Health Act regulated by Ministry of Employment and Labor on registering and verifying chemical substances. We conduct legal procedures on the Occupational Safety and Health Act if substances exported to the South Korea are not on the existing chemical lists.

- People's Republic of China (China)

The new chemical substances notification system in China is stipulated in the Measures for the Environmental

Management of New Chemical Substances ordained by the Chinese Ministry of Ecology and Environment. We conduct legal procedures if substances exported to China are not on the Inventory of Existing Chemical Substances in China.

- Taiwan

Products are exported to Taiwan in accordance with the Toxic Chemical Substances Control Act and the Rules on Hazard Communication of Dangerous Materials and Toxic Materials. A new chemical substance registration system was introduced in Taiwan in 2014. We are currently conducting legal procedures in accordance with this new chemical substance registration system.

(4) Industrial and International Measures

As voluntary efforts by the chemical industry, the Japan Chemical Industry Association (JCIA), to which JSR belongs, promotes JIPS^{*3} and LRI^{*4} activities; and our company contributes to these programs through participation in the association's working groups and by providing research funding. We are also proactively engaged in global warming mitigation in accordance with the corresponding JCIA policy.

^{*3} The Japan Initiative of Product Stewardship (JIPS):

An effort to implement the Global Product Strategy (GPS), which was presented by the International Council of Chemical Associations (ICCA) at the First International Conference on Chemicals Management (ICCM-1). The aim of GPS is to attain the WSSD 2020 target, an international goal to "minimize adverse effects that the manufacturing and use of chemical substances have on human health and the environment, by 2020," which was set at the World Summit on Sustainable Development (WSSD) held in 2002. In Japan, the JCIA has promoted JIPS activities to implement GPS. Manufacturers and importers of chemical substances are working on the proper management of chemical substances in supply chains by conducting risk assessment and releasing such assessment results and other information in cooperation with companies engaged in the processing, assembly and distribution of chemical substances.

^{*4} Long-range Research Initiative (LRI):

The Long-range Research Initiative (LRI) is one of the critical activities of the International Council of Chemical Associations (ICCA), and is a voluntary long-term research project for chemical substances that have an impact on the environment, safety and health. Since FY2013, JCIA has been engaged in new LRI initiatives to resolve the following five issues: (1) development and evaluation of the new risk assessment method; (2) study on the safety of new chemical substances including nano materials; (3) study on the effects of chemical substances on children, the elderly, and gene disorders; (4) evaluation of the impact on ecosystems and the environment; and (5) other issues that require an emergency response.

(5) Initiatives in Supply Chain Management

At JSR, we practice chemical management simultaneously with [CSR procurement](#), [green procurement](#), and [green purchasing](#) as part of our supply chain management. Please access the links for details.

(6) Safety Data Sheets (SDS)

JSR discloses environmental and safety information to its customers by preparing a Safety Data Sheet (SDS) for all products containing polymers, regardless of whether they contain hazardous or toxic substances or not. In Japan, our current SDS items all comply with JIS Z 7253, the Industrial Safety and Health Act, the Law concerning Pollutant Release and Transfer Register (PRTR Law), and the Poisonous and Deleterious Substances Control Act. Our new SDS electronic data management system has been in operation since its creation in 2002 to provide customers with SDS that contain the most accurate information possible about each product. This system includes user management, chemical substance database management, creation support, and publication (revision) history. This allows us to accurately and quickly provide environmental and safety information related to JSR products.

6. Stakeholder Engagement

By applying the PDCA cycle based on dialogue with our various stakeholders, we identify new issues, make frequent improvements and responses, and contribute to the building of a better society. Please access the links for

more details.

Employees:	Employee awareness surveys, activities to ensure penetration of the Corporate Mission, the CSR & RC Caravan program, etc.
Local communities:	Environmental activities, regional dialogue meetings, etc.
Customers:	Customer satisfaction surveys, responses to CSR questionnaires, winning of awards, etc.
Shareholders:	Shareholders' meetings, communication with shareholders and investors, information disclosure, etc.

7. Disclosure of Legal and Regulatory Violations

There were no legal or regulatory violations of laws pertaining to the environment, safety, quality, product safety, or chemicals in FY2017.

We are working to prevent recurrence of the types of cases that occurred in the past by continuing preventative measures and providing periodic education on those cases.

Social Issues Attributable to JSR Group's Corporate Activity

Health and Safety Initiatives

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy and Promotion Organization

(→ [Responsible Care: Philosophy, Promotion Organization](#))

2. Basic Philosophy and Course of Action for Occupational Health and Safety

(1) Basic Philosophy for Occupational Health and Safety

At JSR Corporation, safety is our highest priority and the foundation of all of our activities.

Accordingly, we will create safe worksites and strive to maintain physical and mental health, with the goal of ensuring a safe return home at the end of each workday.

(2) Courses of Action

1. No matter the situation, we will act with safety foremost in mind.
2. We will comply with established rules and never fail to act in accordance with safety basics.
3. We will maintain safety by identifying and eliminating both actual and potential hazards.
4. We will strive to create comfortable work environments and promote physical and mental health.
5. Through communication and ingenuity, we will aim to achieve 100% employee participation in all safety activities.

3. Health and Safety Vision for 2020 (Basic Policy for Security Management)

We are moving toward becoming a mutually enlightened organization in terms of (1) extremely safe behavior, (2) enhanced human resources and organizational strength, and (3) optimal risk management and security measures as a vision of where we want to be in FY2020.

(1) Extremely Safe Behavior

The Basic Philosophy for Occupational Health and Safety has penetrated through the organization, the Courses of Action are established as applying to everyone, and safety competency is improving through independent safety activities.

(2) Enhanced Human Resources and Organizational Strength

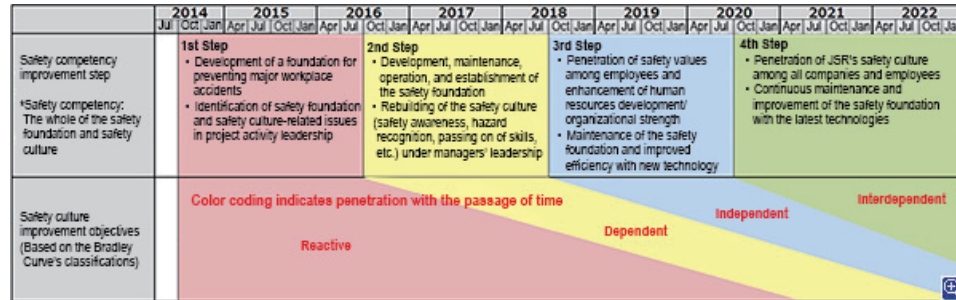
High personal skills, organizational ability, and a healthy organizational culture are being maintained with the establishment and execution of the education and training programs needed for organizational management.

(3) Optimal Risk Management and Security Measures

Security measures corresponding to risk importance are being efficiently and effectively implemented using new technologies.

* Regular activity verifications (by JSR and third parties) will be conducted to confirm progress toward fulfilling the vision.

Medium-Term Plan



Notes:

Reactive: No action unless an accident happens; response by instinct

Dependent: Management by a supervisor/safety officer; doing what one is told to do

Independent: Action on a personal level; ability to act alone without being told

Interdependent: Working on colleagues; mutual awareness with colleagues)

(Source: DuPont)

4. FY2017 Activities

In FY2017, we efficiently operated the safety foundation we have developed heretofore and worked to improve our safety technologies. We also strengthened our activities in process safety. As for our safety culture, we focused on initiatives for passing on technologies from older to younger workers and building risk recognition, and continued our efforts to spread safety-related values among our employees. We intend to continue these activities and verify their effects in FY2018.

(1) Promoting Safety Assessment

We unfailingly promote independent safety activities as part of our approach to process safety and workplace safety. One important basis for these activities is risk assessment.

Using multiple risk assessment methods to ensure completeness, we identify serious risks and execute both infrastructure- and human-based countermeasures to deal with them.

Targets of Risk Assessment and Identification of Hazards

Items for evaluation	Facility accidents	Workplace accidents	
	Fire, explosion, abnormal reaction, equipment damage, leak, etc.	Accident caused by the physical action of machinery and equipment (catching, entanglement, crashing, falls, burns, etc.)	Accidents caused by the toxicity of chemical substances (acute toxicity, irritation, carcinogenicity, etc.)
Equipment, devices, facilities, structures (Evaluated separately)	Risk assessment by 4M analysis, etc.		
Operations			
Chemical substances (Evaluation based on GHS and other information concerning danger and toxicity)	Risk management of chemical substances (danger)	Risk management of chemical substances (toxicity)	
Chemical processes (Evaluation in terms of facilities)	HAZOP		

(2) Optimizing Organizations and Systems for Safe Plant Operation

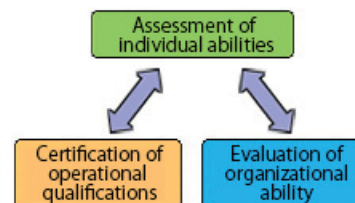
Review of manufacturing-related organization and operations

We reexamined the number of people needed in each manufacturing section, split organizations so that managers can fully grasp what is happening within them, and expanded staffs. We are now seeing improved workplace communication and other benefits as a result. We will continue ascertaining the effects of this organizational review and also look at how functions and roles are shared with other concerned departments.

Improvement of the educational system

We have set desired levels for ranks of the job hierarchy and are striving to provide HR education that allows employees to reliably achieve those levels. We are also conducting assessments of individual employees' ability to operate specific equipment items and processes as well as their comprehensive abilities, and using them to maintain and improve organizational strength.

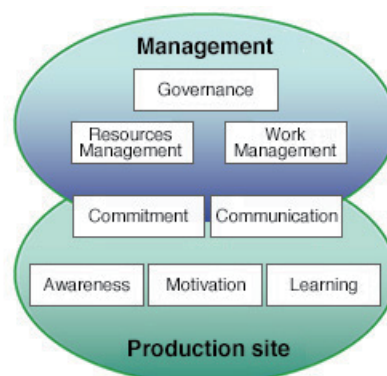
The Educational System (Conceptual Image)

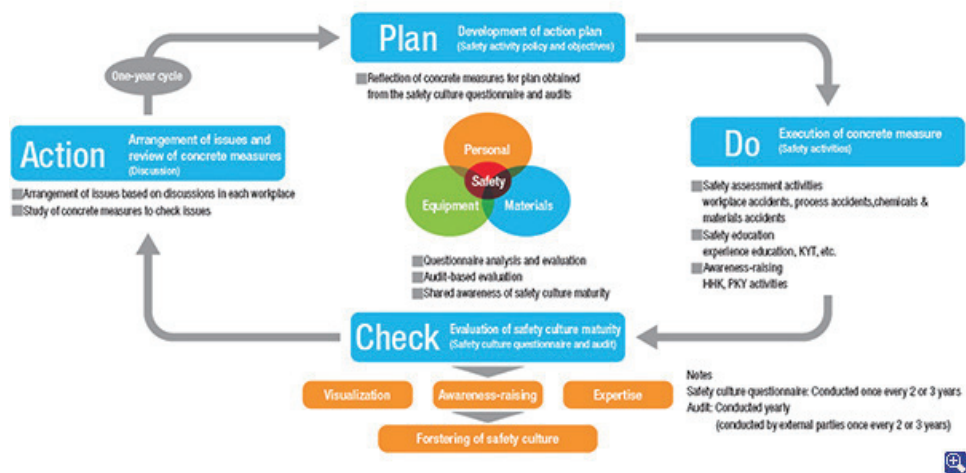


(3) Building of a Safety Culture-Level Self-Diagnosis System

Because "safety culture" differs greatly depending on the company, business location, or workplace, it is important for organizations to accurately grasp their own safety culture level when building it. To periodically monitor the safety culture level of each workplace, we prepared a safety culture questionnaire based on eight safety culture axes and began using it primarily in manufacturing-related departments. In FY2017, we acted to improve the precision of our safety culture maturity evaluations by having an outside organization conduct a third-party evaluation and then comparing the results to results of our own questionnaire. We will continue improving and evaluating this questionnaire so that we may ascertain strengths and weaknesses at the company, business location, and workplace levels and tie what we learn to the building of our safety culture.

Organizational safety culture "8 axes"





(4) The Safety and Health Activity Forum

The Safety and Health Activity Forum is a JSR Group initiative at which all business establishments of the Group present exemplary safety and health activities. Its objectives are to improve employees' safety awareness and to raise the quality of safety and health activities. Each year, we select presentation themes after conducting a careful screening of examples of safety activities that were nominated by each establishment.

The FY2017 forum was held on July 21, "Safety Day." The following presentations were made. After the presentations, a panel discussion was held by the presenters and became the scene of a lively discussion on "eradicating unsafe behaviors."

Presenting group	Title	Content
Yokkaichi Plant Development Dept.	Cultivating and Strengthening Safety Activities	As sections with many changes or irregular operations grapple with personnel turnovers and generational transition, the department is creating mechanisms for passing on the knowledge, experience, and tacit knowledge of older workers to younger ones. (1) Mutual KYK with other groups to permit hazard identification from various perspectives (2) Onsite hands-on training with traps using pilot equipment to build recognition and understanding of equipment and process anomalies
Chiba Plant Environmental Safety Dept.	Reducing Risks in the Chiba Plant's Disaster Response	Whenever public firefighters arrive at the plant, they require information to conduct firefighting (e.g., the fire's location, incendiary substances, nearby combustible materials, firefighting methods, etc.). However, the existing system was unable to accurately and quickly provide this information, in part due to a lack of experience, which caused anxiety in the department. For this reason, the department devised a system that can retrieve and print out information to be provided to firefighters (e.g., facilities, used and stored chemicals, chemical characteristics, firefighting methods, etc.) by clicking on the area on a screen. This allows those in charge to respond precisely and promptly to firefighters' requirements (i.e., by preparing the information they need upon arrival when a fire occurs) with peace of mind.
Kashima Plant Manufacturing Dept.	Safety Activities for Improving Emergency Response Capability and Safety Awareness	Under the department's youth-centered operations scheme, whereby everyone except for team leaders is under 30, there were worries about employees' ability to

		<p>responding to emergencies. To address these worries, the department is providing blind quick-response training with focus on the following points to improve response capabilities.</p> <p>(1) Training on gathering information, making appropriate decisions, and taking initial actions based on gas detection reports and other alarms alone.</p>
Yokkaichi Plant Testing Dept.	Department-Wide Safety Promotion Activities	<p>In an environment in which there are many section employees, evaluation offices are dispersed, and shift work takes place, managers have difficulty keeping an eye on everything. This makes it necessary to ensure safety by improving individual employees' safety awareness and promoting integrated safety activities. The Testing Department is tackling this need by augmenting managers' top-down activities with action centered on safety leaders who have a strong understanding of operations and personnel and using it to stimulate bottom-up solutions.</p>
Yokkaichi Plant Manufacturing Dept.	Focusing on Safety following a Major Workplace Accident	<p>Ever since in a major workplace accident occurred in 2014, JSR has been implementing a number of infrastructure and human-based safety measures. What has been the mindset of department members as they implemented those measures in the wake of the accident? The department reported on how its members' thinking has changed and remaining issues.</p>

5. Results

(1) Number of Workplace Accidents

As listed in the following table of the number of workplace accidents that occurred over the last five years, there were two accidents at JSR, one accident at a Group company (in Japan), and four accidents at manufacturing partners in FY2017. The two accidents at JSR involved young employees and veteran employees, and therefore we will strengthen efforts that are matched to the characteristics of particular age groups. Meanwhile, workplace accidents associated with construction have occurred at JSR's manufacturing partners. We will tackle this problem by reinforcing collaboration with our partners and continuing effective activities. And, just as in Japan, accidents involving tripping, falling, entanglement with operating equipment, and other mishaps are occurring at overseas Group companies. We will continue providing assistance to rectify this situation.

Information on workplace and facility accidents that occurred at JSR is quickly and effectively communicated to all employees via the company intranet. This ensures that all group companies and employees share and understand the information, which helps prevent occurrence of similar accidents in the future.

Number of Workplace Accidents (JSR)

FY	2012*	2013*	2014*	2015	2016	2017
Number of Cases	0	3	1 (Fatal accident)	1	0	2

* Figures for 2012 to 2014 are fiscal year figures.

Number of Workplace Accidents (Group Companies)

FY	2012*	2013*	2014*	2015	2016	2017
Number of Cases	0	1	1	2	2	0

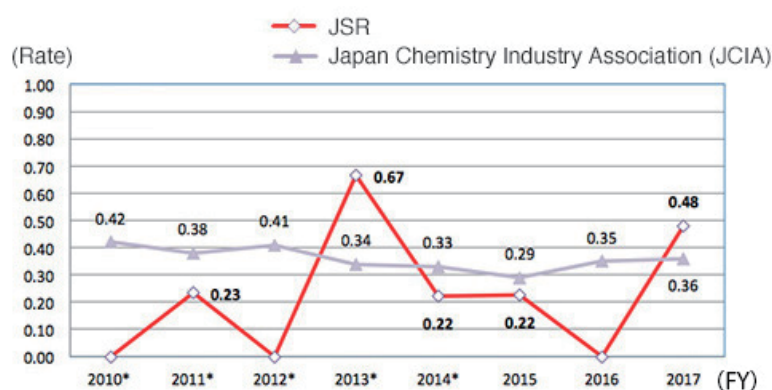
* Figures for 2012 to 2014 are fiscal year figures.

Number of Workplace Accidents (Manufacturing Partners of JSR or Group Companies)

FY	2012*	2013*	2014*	2015	2016	2017
Number of Cases	2	2	2	3	2	4

* Figures for 2012 to 2014 are fiscal year figures.

Lost-time accidents (rate)



Lost time accidents rate = (Number of victim in fatal or lost-time accidents/extended working hours) X 1 million

* Figures for 2010 to 2014 are fiscal year frequencies.

(2) Number of Facility Accidents

As listed in the following table, the number of facility accidents at JSR in FY2017 was two and the number at Group companies was one. This information is reported to the government in compliance with the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities.

Facility Accidents Data (JSR)

FY	2012*	2013*	2014*	2015*	2016	2017
Number of Cases	2	2	2	1	1	2

* Figures for 2012 to 2015 are fiscal year figures.

Facility Accidents Data (Group Companies)

FY	2012*	2013*	2014*	2015*	2016	2017
Number of Cases	0	0	0	1	0	1

* Figures for 2012 to 2015 are fiscal year figures.

Accident Summary for FY2017

- (1) March 3: Butadiene gas leaked from raw material piping at JSR's Yokkaichi Plant. The leak was caused by pipe corrosion. Corrosion management was strengthened and measures to prevent recurrence were implemented.
- (2) April 20: Smoke was emitted from waste resin that was stored in the waste yard of JSR's Chiba Plant. The main cause was poor observance of storage rules. Steps to prevent recurrence were implemented, including reinforcement of education on principles and general rules as well as thorough observance of rules.
- (3) July 26: Raw material leaked from a tank used in resin manufacture at Techno Polymer (no Techno UMG's Yokkaichi Plant). The main cause was poor observance of facility management rules. Steps were taken to achieve thorough observance of the rules and prevent recurrence.

Like information on workplace accidents, information on facility accidents that occurred at JSR is quickly and effectively communicated to all employees via the company intranet. The information is also used in cause analysis and the results are applied to education. Through these actions, JSR is endeavoring to prevent occurrence of similar accidents in the future.

Social Issues Attributable to JSR Group's Corporate Activity

Environmental Impact Reduction

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for details concerning our philosophy and promotion organization.](#)

1. Environmental Impact of Business Activities

JSR Group strives to comprehensively and efficiently reduce its environmental impact by quantitatively ascertaining and closely analyzing its consumption of energy and resources in its business activities (input) as well as its product production, emissions into the environment, waste production, and other data (output).

The figure identifies and summarizes particularly important items from JSR Group's environmental impact in FY2017. It presents totals for energy consumption and water consumption as input and total product production, greenhouse gas emissions, wastewater production, and waste production as output. Please note that the particulars of the input data and output data, including other items not shown in the figure, are provided in ESG Data.

The Thinking Behind the E2 Initiative™

Because both humans and innumerable other living things share this planet Earth, we must make an earnest effort to deal with environmental issues. JSR Group has adopted its E2 Initiative™ as a concept to simultaneously reduce environmental impact and create new business opportunities using the environmentally-friendly aspects of our products.

The E2 Initiative™ is based on "Eco-Innovation," which is designed to create business opportunities based on the environment, and "Energy Management," which is focused on reducing CO2 emissions. It is a concept that allows us to create value both in [active](#) and passive ways.

Efforts to reduce environmental impact fall under the passive side of the E2 Initiative™.

Input and Output Data:



Products	
- Elastomer	
- Emulsions	
- Plastics	
- Digital solutions-related products	
- Others	
Total production	1,513,000 tons

Environmental impact	
Atmospheric emissions	
	1,437,000 tons - CO ₂
Wastewater	
	18,008,000 m ³
Wastes	
Waste generated	71,000 tons
Amount recycled (total amount on-site and off-site)	40,000 tons
Final off-site landfills:	900 tons

Social Issues Attributable to JSR Group's Corporate Activity

Climate Change Mitigation

FY : Fiscal Year means the year starting April 1st.

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[Click here for details concerning our philosophy and promotion organization.](#)

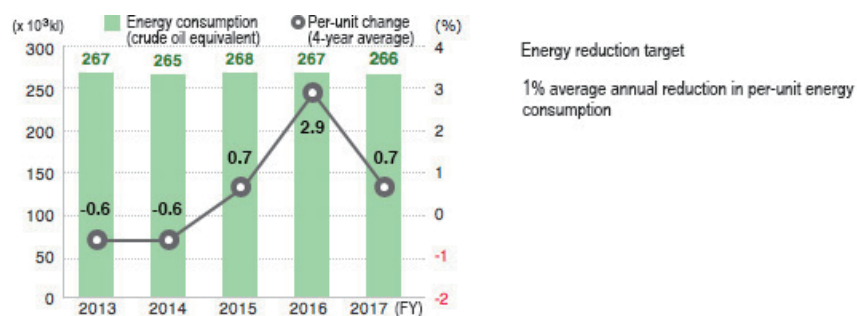
JSR Group contributes to climate change mitigation by reducing its consumption of necessary energy and greenhouse gas emissions in various product production and supply processes.

1. Energy Consumption
2. Initiatives to Reduce Greenhouse Gases
 - (1) Accounting for Greenhouse Gas Emissions Throughout the Supply Chain
 - (2) Actions for Scope 1 and Scope 2 (3) Actions for Scope 3

1. Energy Consumption

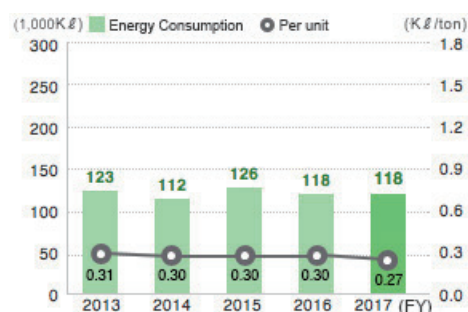
JSR's Responsible Care Committee adopted a "Medium-Term Environmental and Chemical Management Plan." This plan contains per-unit targets for energy reduction, which serve as measures to help prevent global warming. In order to reach these targets, JSR is engaged in "TSC Plus" cost-reduction activities targeted at reducing energy and resource use. The change in our per-unit energy consumption in FY2017 was 0.7%, which fell short of our per-unit energy reduction target. Nonetheless, JSR remains committed to energy conservation activities and will continue to work toward reducing energy consumption.

(1) JSR



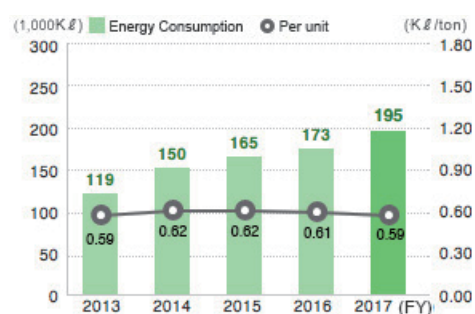
(2) Domestic Group Companies

Energy consumption



(3) Overseas Group Companies

Energy consumption



2. Initiatives to Reduce Greenhouse Gases

Amid a global trend whereby businesses are managing greenhouse gases indirectly emitted from their supply chains and disclosing their emissions, JSR Group has launched initiatives to calculate and ascertain emissions and reduce emissions based on the Basic Guidelines on Accounting for Greenhouse Gas Emissions Throughout the Supply Chain issued by Ministry of the Environment, Government of Japan.

Scope 1: Direct greenhouse gas emissions by sources owned or managed by a company or household (use of fuel: factory, heater, private automobile, etc.)

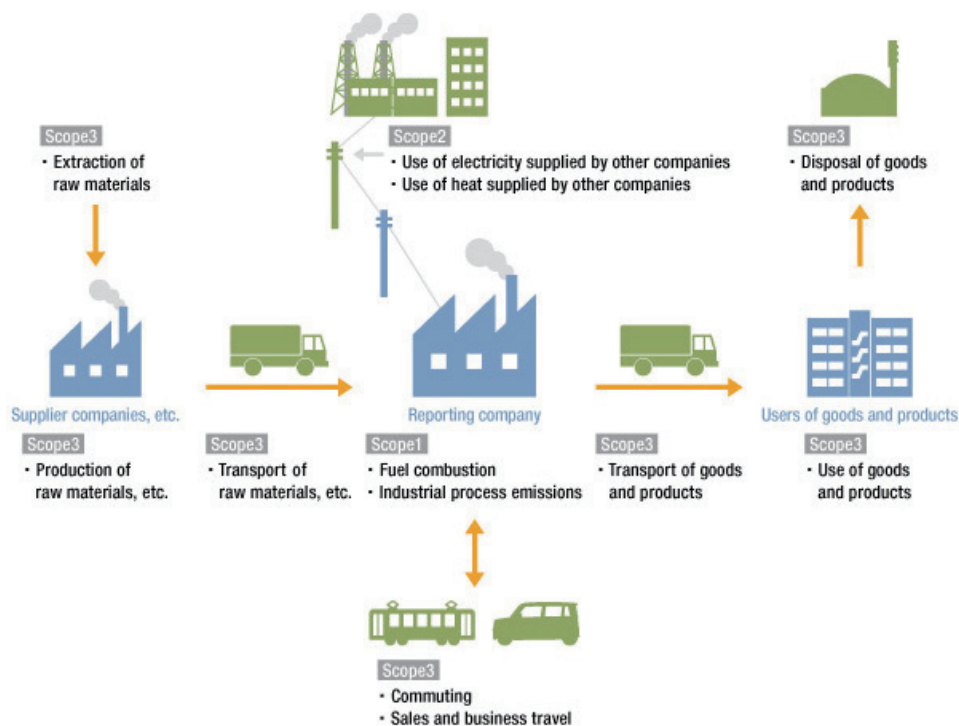
Scope 2: Indirect emissions from the use of electricity, steam, or heat (use of purchased electricity, etc.)

Scope 3: Other indirect emissions besides Scope 2.

("Company" includes the procurement of raw materials, employee business trips, subcontracting of waste disposal, etc.

"Household" includes the purchase of products, travel, subcontracting of waste disposal, etc.)

Scope of Greenhouse Gas Emissions from Businesses (conceptual illustration)



(1) Accounting for Greenhouse Gas Emissions Throughout the Value Chain

Category	Boundary	FY2016 emissions		FY2017 emissions	
		CO2 (t)	Percentage (%)	CO2 (t)	Percentage (%)
I . Direct emissions (Scope 1)	JSR Group	500,532	22.9	458,843	20.8
II . Energy-derived indirect emissions (Scope 2)		915,473	41.9	977,662	44.2
III . Other indirect emissions (Scope 3)		771,050	35.5	774,232	35.0
I . Direct emissions (Scope 1)	JSR	397,252	28.2	382,808	27.3
II . Energy-derived indirect emissions (Scope 2)		260,455	18.5	269,766	19.2
III . Other indirect emissions (Scope 3)		749,048	53.2	750,414	53.5
I . Direct emissions (Scope 1)	Domestic Group companies	94,251	30.9	66,970	24.0
II . Energy-derived indirect emissions (Scope 2)		200,558	65.8	201,172	72.0
III . Other indirect emissions (Scope 3)		10,179	3.3	11,233	4.0

I . Direct emissions (Scope 1)	Overseas Group companies	9,029	1.9	9,065	1.7
II . Energy-derived indirect emissions (Scope 2)		454,460	95.6	506,724	95.9
III . Other indirect emissions (Scope 3)		11,823	2.5	12,585	2.4

- [* See ESG Data for details.](#)

(2) Actions for Scope 1 and Scope 2

JSR is endeavoring to reduce its greenhouse gas emissions through various energy saving activities under the Medium-Term Environmental and Chemical Management Plan.

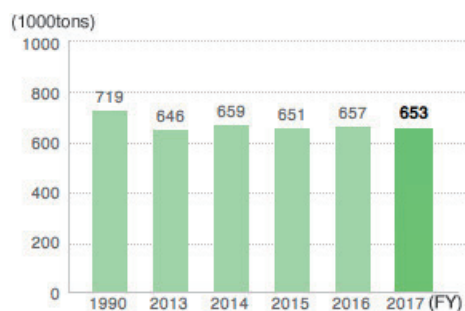
1. CO2 Reduction Targets and Current Emissions

CO2 Emissions Reduction Target

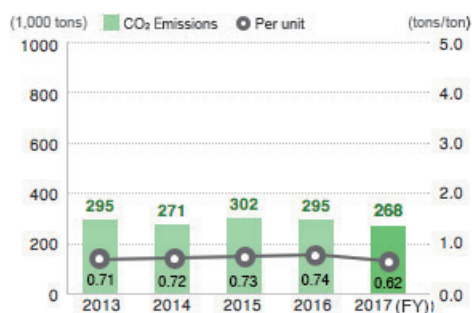
Promotion of CO2 reductions with attention to government goals

In FY2012, JSR established its "System to Reduce Total CO2 Emissions from Three plants by 6% Compared to FY1990" by upgrading its energy-saving technologies through the introduction of fuel conversion at the Kashima Plant (Kashima South Joint Power Corporation) and a sludge dewatering system at the Yokkaichi Plant. In FY2017, JSR successfully reduced CO2 emissions by approximately 9% over FY1990 levels.

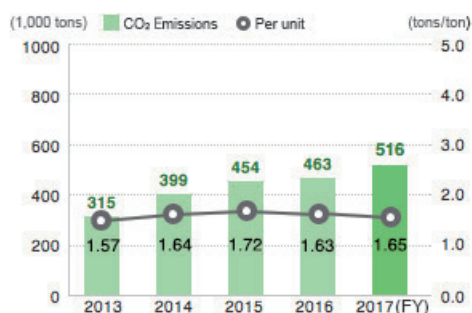
JSR



Domestic Group Companies



Overseas Group Companies



2. Examples of Measures Taken to Reduce CO2 Emissions

Example 1: Introduction of a natural gas-fired turbine cogeneration system

The Yokkaichi Plant installed a natural gas-fired turbine cogeneration system in April 2010. By using natural gas instead of coal, a heavy oil-fired steam boiler and condensing steam turbine system, this new system helped us to cut CO2 emissions by approximately 35,000 tons in FY2017.



Natural gas-fired turbine cogeneration system (Yokkaichi Plant)

Example 2: Introduction of a sludge dryer system that makes sludge combustible

In FY2012 a sludge drying system was adopted at the Yokkaichi Plant in order to dry the sludge generated from its general wastewater treatment facility. Previously, sludge containing a high percentage of water was burned with combustion support fuel (heavy oil); but drying allows us to use the sludge itself as fuel, which in turn allows us to reduce the amount of combustion support fuel we use. This led to a reduction in CO2 emissions of approximately 1,600 tons in FY2017.



Sludge dryer system (Yokkaichi Plant)

Example 3: Measures to Cut Power Consumption at the Head Office

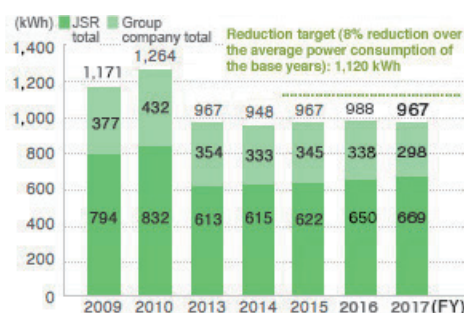
Power Saving Target for the Head Office

8% reduction compared to the average power consumption from the base years of FY2009 and FY2010

Major Efforts

- Policy of turning off lights and office equipment such as printers when not in use.
- Implemented the so-called "Cool Biz" dress code.
- Introduced a daylight savings time scheme on two days/week from June to September.
- Maintained a proper air-conditioned room temperature that achieves a balance between energy savings and operational efficiency.

Power Consumption at the Head Office



The Tokyo Metropolitan Government requires major tenants of a building occupying 5,000 square meters or more in floor area or consuming six million kWh or more of electricity annually to reduce its CO2 emissions

under the Tokyo Metropolitan Ordinance on Environmental Preservation.

Although we are not subject to this obligation, we are promoting energy conservation on our own initiative by voluntarily setting a specific power saving target.

In FY2017, as a result of these efforts, our power consumption decreased by 21% over the average consumption of the base years.

(3) Actions for Scope 3

1. Environmental Measure in Logistics: Improving Transport Efficiency

As part of our environmental efforts in transportation, we have taken steps to reduce our transport energy use as a designated shipper under the amended Energy Conservation Act. We are working to reduce per-unit transport energy by switching to large-scale transport and making a modal shift from road to rail and water transport.

In FY2017, as a result of policies to transport goods and raw materials by railway and ship, we achieved a modal share of approximately 86%, thus maintaining last year's high level, and successfully held down per-unit transportation energy.

Transport Statistics

FY	2013	2014	2015	2016	2017
Transport volume (million ton-kilometers ^{*3})	492	523	511	562	534
Rail/Sea transport ratio (%)	83	85	86	87	86
Energy consumption level (kiloliters: converted to crude oil)	9,026	9,388	9,112	9,898	9,899
Energy per-unit (kiloliters/1,000 ton-kilometers)	0.0184	0.0180	0.0178	0.0176	0.0178
CO2 emission level (tons)	22,960	23,984	23,333	25,495	24,437
- Transportation and delivery of raw materials and other materials (tons)	10,489	12,028	12,172	14,133	13,177
- Transportation of waste from plants (tons)	164	186	245	206	195
- Transportation and delivery of products (tons)	12,307	11,770	10,916	11,156	11,065

*3 Ton-kilometer: Freight Tonnage (Ton) x Transport Distance (km)

Example of an Initiative to Reduce CO2 Emissions

JSR Micro NV lends bicycles to 96 employees to help reduce CO2 emissions during commuting. The "1K Kyoto Project"^{*} is a campaign that has been continuing since 2005. It is designed to encourage employees to commute using sustainable energy. During FY2017, the project achieved a 9,596 kg reduction in CO2 emissions.

* 1K Kyoto Project

An initiative that was started by a local government in Belgium. It takes its name from the Kyoto Protocol.

Social Issues Attributable to JSR Group's Corporate Activity

Water Resources Conservation

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for details concerning our philosophy and promotion organization.](#)

1. Water Consumption

(1) Water Consumption (Industrial water, etc.)

JSR consumed approximately 14,238,000 cubic meters of industrial water, groundwater^{*1}, and tap water in FY2017.

30% of this volume was recycled effectively for use in various work processes at each plant. Key goals include the implementation of initiatives to improve water resource management and maintain the current level of water recirculation and reuse. The Yokkaichi Plant participates in the Yokkaichi Region Environment Council and continues to reduce water usage through the sharing of information on new water quality regulations.

*1 Groundwater is not used at the Yokkaichi and Chiba Plants.

1) JSR



Water Consumption (breakdown) and Intensity Index^{*2}

(x 10³ m³/year)

FY	1998	2013	2014	2015	2016	2017
Industrial water	15,196	14,733	14,359	14,190	13,916	13,667
Ground water	533	234	357	253	354	393
Tap water	174	147	139	138	153	178
Total Water Consumption	15,903	15,114	14,855	14,581	14,423	14,238
Intensity index ^{*2}	100	102	108	108	106	100
Usage of recycling water	0	4,496	4,249	4,159	4,193	4,250
Effective recycling ratio (%)	0	29.7	28.6	28.5	29.1	29.8
Seawater (coolant)	60,731	59,830	57,395	54,725	55,413	55,011

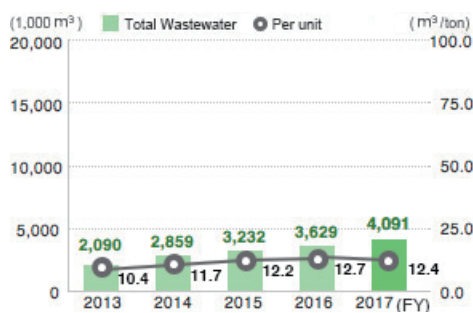
*2 FY1998 represents the 100 level.

$$\frac{[(\text{fiscal year water consumption})/(\text{annual production volume for the fiscal year})]/[(\text{FY1998 water consumption})/(\text{FY1998 production volume})]}{100}$$

2) Domestic Group Companies



3) Overseas Group Companies

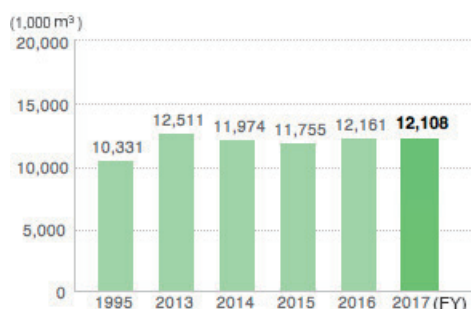


2. Preservation of Water Quality

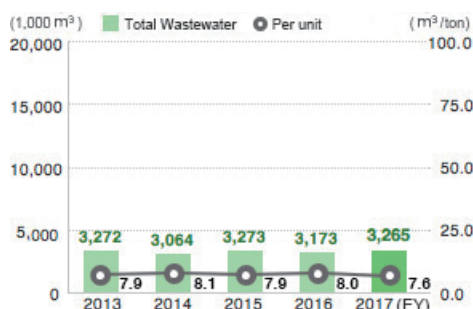
JSR performs rigorous wastewater management at all of its plants, and strives to maintain and improve water quality. JSR is in full compliance with the 7th Total Pollutant Load Control that was put into operation in April 2012. We will continue to strictly monitor water quality and strive to further reduce our impact on water in keeping with the 8th water-use regulations.

(1) Total amount of waste water

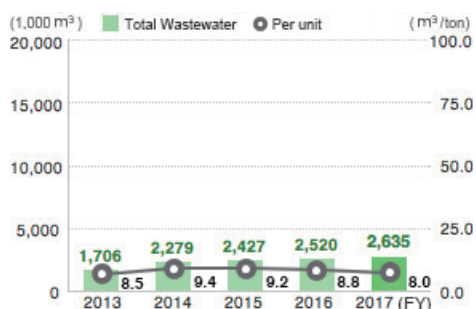
1) JSR



2) Domestic Group Companies



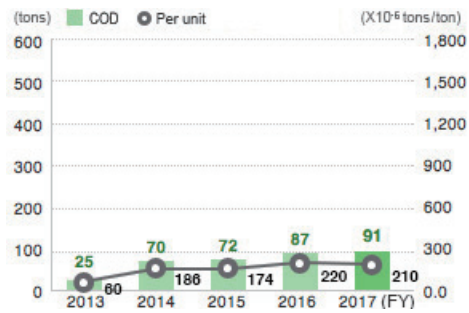
3) Overseas Group Companies



(2) Chemical Oxygen Demand Emissions

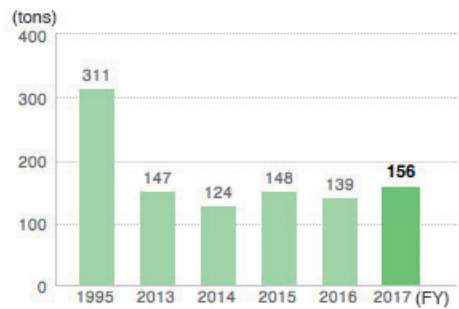
1) JSR

2) Domestic Group Companies

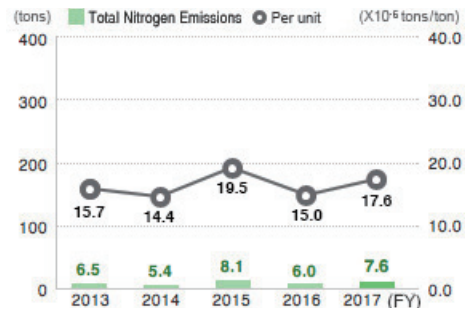


(3) Total Nitrogen Emissions

1) JSR

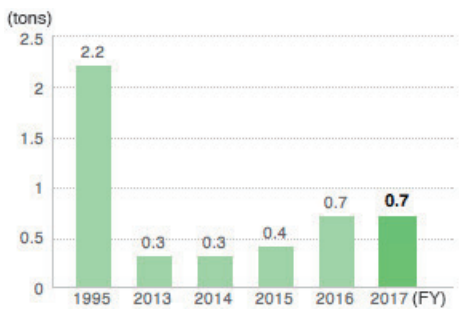


2) Domestic Group Companies

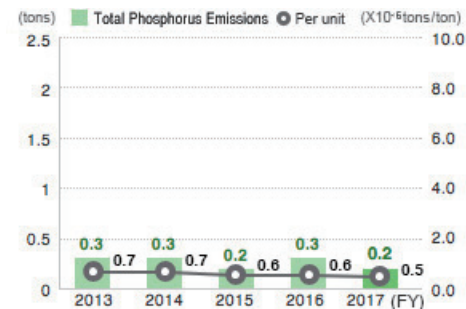


(4) Total Phosphorus Emissions

1) JSR



2) Domestic Group Companies



3. Assessment of Soil and Groundwater Pollution

Groundwater (Environmental Quality Standards for Groundwater Pollution) and soil (major items regulated under environmental standards) at all three of our plants are periodically inspected. As in previous years, no problems were found in FY2017.

Social Issues Attributable to JSR Group's Corporate Activity

Waste Reduction

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

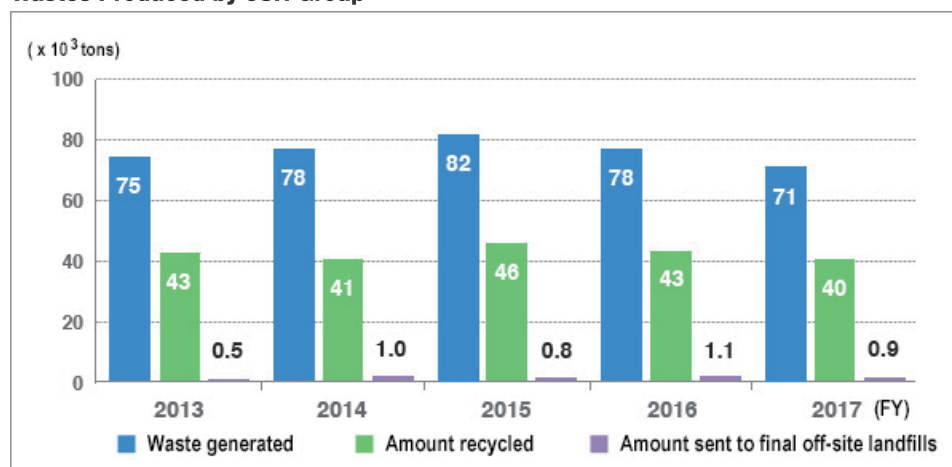
[Click here for details concerning our philosophy and promotion organization.](#)

1. Initiatives to Reduce Industrial Waste
2. Application of "3R" (Reduce, Reuse, Recycle) to Packaging Materials

1. Initiatives to Reduce Industrial Waste

JSR Group is controlling the amount of waste it produces, sorting waste, and searching for businesses that accept recyclable materials. In FY2017, the Group produced 71,000 tons of waste globally (down 9% from the previous year).

Wastes Produced by JSR Group



(1) JSR

Since FY2000, JSR has been implementing its goal of "zero waste"^{*1} through activities that include prevention of waste materials, sorting of waste, and the search for recycling locations throughout the company. In the period from FY2003 to FY2017, ongoing efforts have enabled us to reach our goals in zero waste activities. Searching for even more recycling locations and setting the goal of reducing waste by 15% in 2030 compared to the FY2013 level, we will continue working to reduce our environmental impact that is attributable to generated waste and help create a recycling-based society.

Examples of activities

We are continuing the following measures targeting 1) sludge (resulting from the activated sludge treatment of wastewater) and 2) coal ash (generated in the coal boilers used for on-site power generation), which account for about 90% of the total volume of generated waste materials.

- 1) Transforming sludge into a valuable material (conversion into fuel) with the introduction of sludge drying equipment (from December 2012, Yokkaichi Plant)

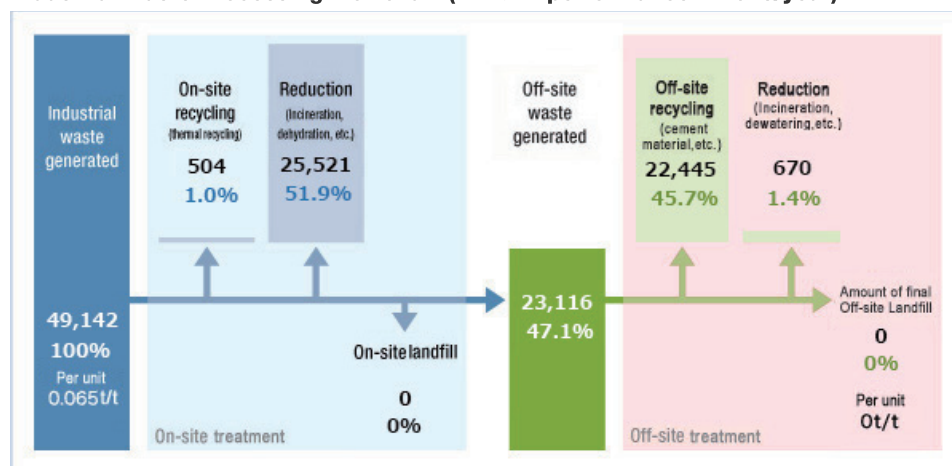
2) Recycling coal ash as cement material

Additionally, we promote the recycling of bottles, cans, drums, paper, fluorescent lamps, dry cell batteries, and organic waste. We also use waste oils and other materials as fuels.

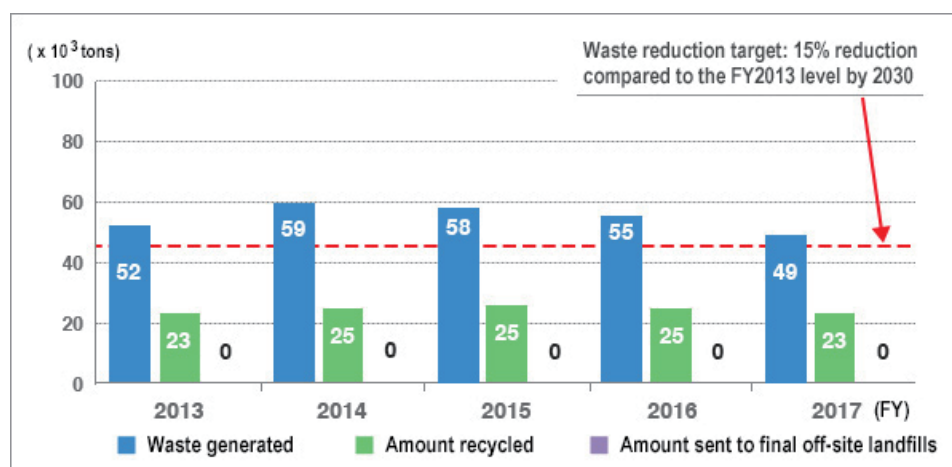
Furthermore, we participate in the Mie Prefecture Industrial Waste Solutions Promotion Committee with a view to appropriately disposing of industrial wastes and reducing the quantity of waste in cooperation with the local community. JSR serves an executive role in the committee.

*1 Zero waste: When the volume of final off-site waste buried at third-party landfills is less than 0.1% of the volume of waste generated

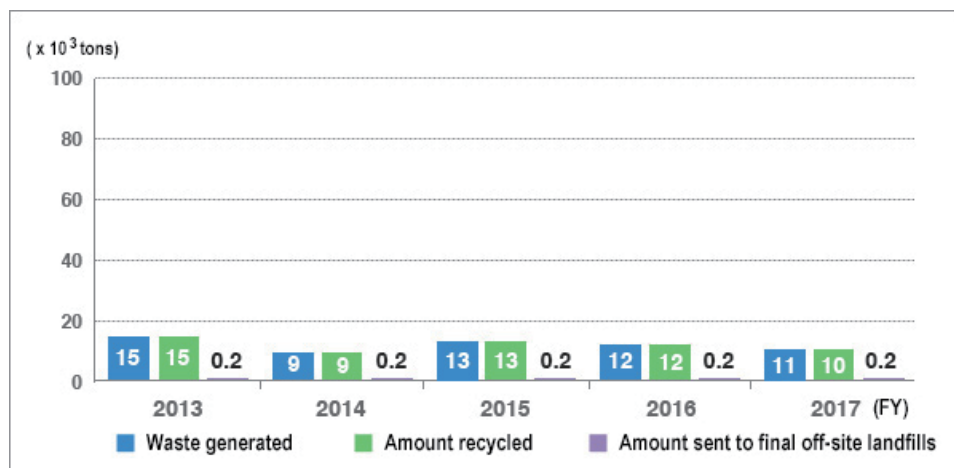
Industrial Waste Processing Flowchart (FY2017 performance in tons/year)



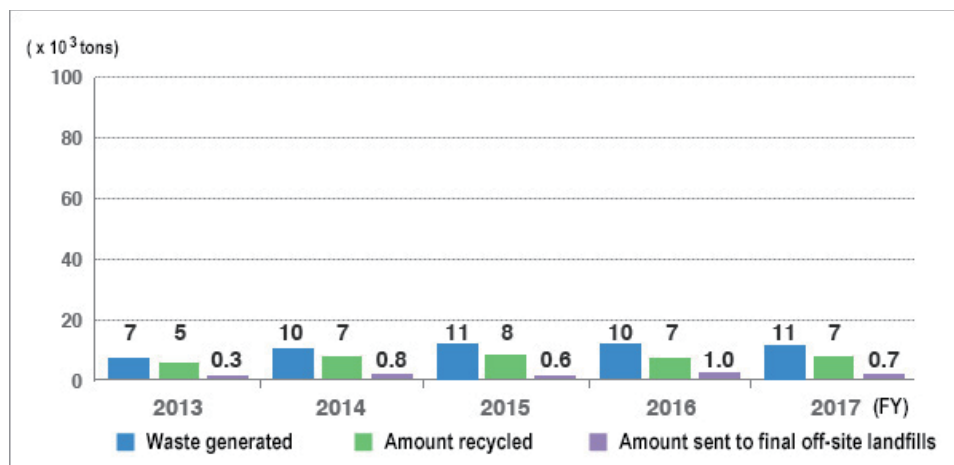
On an individual basis, JSR reduced its generated waste by 6% compared to FY2013. We will continue our initiatives to reduce industrial waste through the stable operation of comprehensive wastewater treatment facilities and sludge drying equipment.



(2) Domestic Group Companies



(3) Overseas Group Companies



2. Application of "3R" (Reduce, Reuse, Recycle) to Packaging Materials

JSR has always been serious about environmental measures in product packaging. Therefore, we promote "3R" (Reduce, Reuse, Recycle) to effectively utilize waste-free packaging materials and packaging containers.

Reduce: Reducing the weight of external cardboard boxes (two-tier construction to single-tier) and the weight of steel box pallets used as packing containers for synthetic rubber.

Reuse: Preventing the breakage of packaging materials that can be reused as intermediate product containers.

Recycle: Promoting a switchover to recyclable materials when selecting packaging materials.

JSR will actively engage in the above 3R activities for packing materials to promote recycling and effective use of resources.

Social Issues Attributable to JSR Group's Corporate Activity

Other Environmental Impact Reduction Efforts

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for details concerning our philosophy and promotion organization.](#)

1. Protection of the Atmospheric Environment
2. PRTR Support
3. Asbestos Measures
4. PCB Management
5. Improving the Local Environment
6. Biodiversity Conservation
7. Environmental Accounting
8. Maintenance Management Information Regarding Waste Treatment Facilities, By-Product Reduction Plan

1. Protection of the Atmospheric Environment

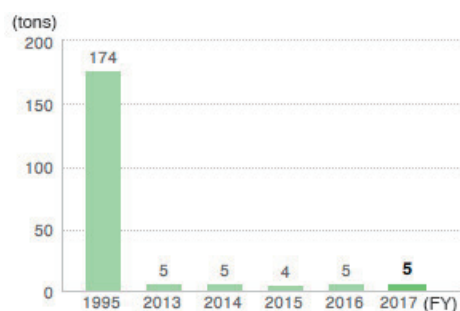
(1) Boiler Emissions Countermeasures

At the Yokkaichi Plant, which generates its own power, we installed flue gas desulfurization Equipment to reduce emissions of sulfur oxides (SOx). We also substantially cut emissions of nitrogen oxides (NOx) by installing burners with low NOx emissions and denitrification equipment. In FY2013, the fuel conversion (from heavy oil to public utility gas) change implemented at the Kashima Plant (Kashima Joint Power Generator) resulted in a reduction of both SOx and NOx emissions, an achievement that was maintained in FY2017.

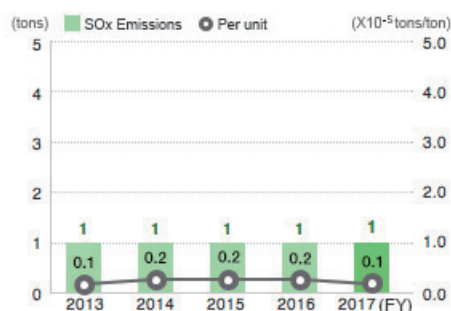
JSR will continue to adopt the best emissions reduction technologies, and will continue to make improvements.

SOx Emissions

JSR



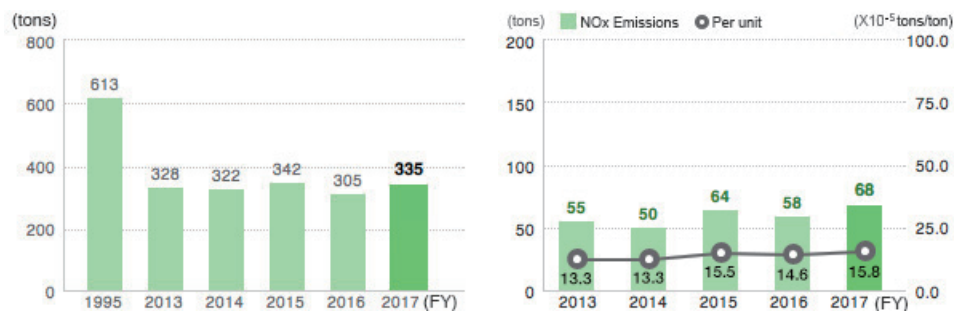
Domestic Group Companies



NOx Emissions

JSR

Domestic Group Companies



(2) Initiatives for the Reduction of VOCs^{*1} Emissions into the Atmosphere

Having set a high voluntary goal for the reduction of emissions of volatile organic compounds (VOCs) by 75% from FY2000 levels, JSR undertook large-scale investment between FY2006 and FY2009 to install five dried-synthetic rubber waste incinerators in three plants. We also carried out meticulous maintenance and management activities, including enhancing the airtightness of release points, improving the working method by adopting a closed system for chemical sampling and preventing leakage from bulbs. As a result, our VOCs emissions in FY2017 were 912 tons (78% reduction as compared to FY2000), in so doing, we reached our internal target. As we ramp up our production volume, we will maintain the level of the current voluntary goal (75% reduction from FY2000) without large-scale investment by ensuring the proper operation of dried-synthetic rubber waste incinerators and finely tuned maintenance and management.

^{*1} VOCs = Volatile Organic Compounds.

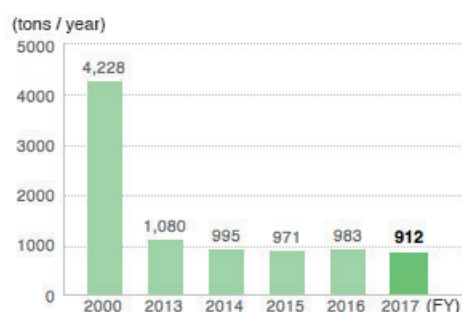
Reference: VOCs reduction targets

- 1) Air Pollution Control Act (enforced in April 2006): To achieve a 30% reduction in the amount of VOCs released into the atmosphere from the FY2000 level by FY2010 with the effective application of laws and regulations, along with operators' independent activities.
- 2) Japan Chemical Industry Association: To prevent any further negative impact over FY2010 levels by FY2015.

VOCs Emissions

JSR

(Includes Techno Polymer Co., Ltd., Kraton JSR Elastomers K.K., and Japan Butyl Co., Ltd. Kashima Plant)



*Techno Polymer Co., Ltd. merged with UMG ABS, Ltd. and became Techno-UMG Co., Ltd. on April 1, 2018.

(3) Measurement of Ozone-Depleting Substances

As part of compliance with the Act on Rational Use and Proper Management of Fluorocarbons established in April of 2015, all businesses that use designated products, including industrial air conditioners, refrigerators, and freezers, must perform basic inspections, periodic maintenance, and create inspection records. A total annual leakage of 1,000 tons or more of CO₂ must be reported to the acting minister.

For this reason, JSR has created management standards for devices that use freon and is continuing a policy that such devices be managed in accordance with these standards. The amount of freon leakage in FY2017 was 632 tons of CO₂.

We will continue to appropriately manage these substances in accordance with the act and tie this effort to reduced leakage.

2. PRTR Support

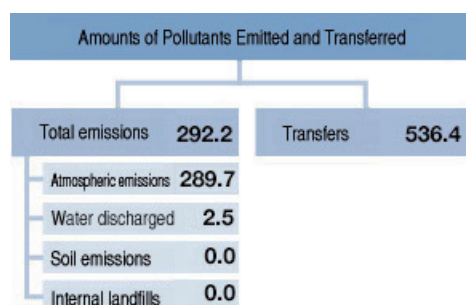
(1) PRTR^{*2} Activities

Based on the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof, JSR aggregates the amount of designated chemical substances emitted into the environment (atmosphere, water and soil), transferred by manufacturing, or used in the previous year, and notifies the government of Japan of the results. We have systematically implemented a range of measures primarily for substances that are emitted in significant amounts and have a great impact on the environment. Such measures include enhancing the airtightness of substance release sources, rendering substances harmless by incineration, and improving manufacturing processes. In FY2017, as a result of taking such measures, we reduced emissions of the substances designated by the PRTR (290 tons) by 89% from the FY1995 level.

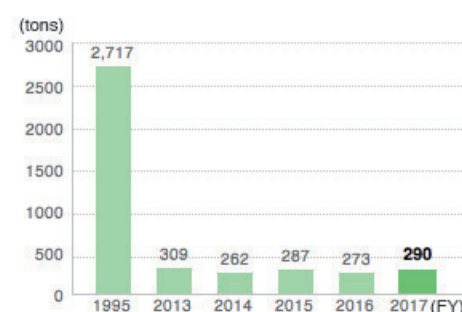
^{*2} Pollutant Release and Transfer Registers (PRTR): A system for registering the emission and transport of environmental pollutants

Amounts of Pollutants Emitted and Transferred in FY2017 (tons/year)

(Including Techno Polymer Co., Ltd.,^{*} KRATON JSR ELASTOMERS K.K. Japan Butyl Co., Ltd. Kashima Plant)



Amounts of Atmospheric Emissions of PRTR Applicable Substances



^{*} Techno Polymer Co., Ltd. merged with UMG ABS, Ltd. and became Techno-UMG Co., Ltd. on April 1, 2018.

FY2017 Emissions of Main Chemical Substances (PRTR)

Ordinance designated number	Substance Name	Amounts handled ^{*3} (t)	Emissions			Transfer Amount ^{*4} (t)
			Air (t)	Water (t)	Soil (t)	
9	Acrylonitrile	43,014.9	7.8	0.0	0.0	7.9
186	Dichloromethane (also called methylene chloride)	11.4	1.8	0.0	0.0	7.2
240	Styrene	127,075.1	20.4	0.0	0.0	8.7
300	Toluene	2,993.1	63.2	0.2	0.0	247.4
351	1,3-Butadiene	582,081.5	9.7	0.0	0.0	0.9
392	n-Hexane	1,199.2	181.5	0.0	0.0	82.3
243	Dioxins ^{*5}	—	0.1478	0.0020	0.0000	0.0000

*3 The handling amount represents the value after base deduction (1 ton/year per place of business)

*4 The transfer amount is the amount committed to intermediate waste service companies plus the amount transferred to public sewers

*5 Dioxin category unit: mg-TEQ

3. Asbestos Measures

In accordance with the Ordinance on Prevention of Hazards due to Asbestos, JSR has conducted checks at all of its facilities (office, manufacturing, R&D and employee amenity areas), including those of all Group companies, where asbestos containing materials have been sprayed. Subsequently, at locations in plants where asbestos was found, we completed removal and enclosure projects in FY2006. In addition, we are investigating the replacement of asbestos containing gaskets with non-asbestos containing types and are progressively carrying out replacements when the safety of their use in production has been confirmed.

We will continue to act properly to prevent workers engaged in building demolition work from acquiring health problems caused by asbestos exposure in accordance with air pollution prevention laws and asbestos disability prevention regulations.

In order to accommodate requests from the Labour Standards Bureau of the Ministry of Health, Labour and Welfare to thoroughly inform our employees of various systems, including the issuance of the asbestos-related health care handbook and the provision of special benefits as industrial workers' compensation for bereaved families, we introduced the relevant leaflet released by the Ministry of Health, Labour and Welfare on our website.

4. PCB Management

JSR stores and manages PCB waste in an appropriate manner in accordance with the "Act on Special Measures concerning Promotion of Proper Treatment of PCB Wastes" and subsequently carries out detoxication treatment in accordance with the law.

Electrical devices	Number of devices	Oil containing PCB (liter)
Devices in storage (not in use)	6	10,166
Devices in operation	0	0
Total	6	10,166
Current treatment status (%)	302 (98.1)	174,767 (94.5)

As of March 31, 2018

5. Improving the Local Environment

JSR values the opinions of people living near its manufacturing and research bases, and considers high transparency of plant operations to be the key to improving the local environment. With this in mind, we have strived to improve the local environment by implementing monitoring and tours of environmental equipment at regular intervals. In FY2006 and FY2007, we installed equipment to incinerate dry synthetic rubber dry exhaust (RTO^{*6}) at the Yokkaichi, Kashima, and Chiba plants to prevent foul odors. In FY2008, a ground flare was installed

at the Yokkaichi Plant to prevent noise and flashes. As a result, there have been no environmental complaints from FY2008 to FY2017.

We will continue striving to maintain our basic policy of improving the local environment.

*6 RTO (Regenerative Thermal Oxidizer): A device that combusts breaks down VOCs into water and CO₂ to make emissions clear



**Dried-synthetic rubber waste incinerator
(Kashima Plant)**



**Ground flare
(Yokkaichi Plant)**

Number of Environmental Complaints (JSR and Domestic Group Companies)

FY		2012	2013	2014	2015	2016	2017
No. of environmental complaints	Odor	0	0	0	0	0	0
	Noise	0	0	0	0	0	0
	Vibration	0	0	0	0	0	0
	Other	0	0	0	0	0	0

6. Biodiversity Conservation

(1) Philosophy

JSR Group has formed biodiversity policies based on issues identified through conservation activities conducted in the past. We are currently promoting various activities in accordance with these policies.

(2) JSR Group Biodiversity Policies

To contribute to the establishment of a sustainable society, JSR Group strives to identify how our business activities depend on and impact biodiversity, and to promote efforts in consideration of biodiversity.

- 1) We prioritize biodiversity conservation in procuring naturally derived raw and processed materials.
- 2) We work to make the green spaces of our business establishments biodiversity-friendly.
- 3) We strive to develop biodiversity-friendly products.
- 4) We emphasize staff engagement and cooperation with local communities.

Policy Formulation Process

Utilizing the JBIB^{*7} Business and Biodiversity Interrelationship Map, we have clarified how our business activities depend on and impact biodiversity. We have since established JSR Group Biodiversity Policies on the basis of this clarification.

*7 JBIB = Japan Business Initiative for Biodiversity.

(3) Activity Progress Status

Policy 1 - We prioritize biodiversity conservation in procuring naturally derived raw and processed materials.

1) Investigation to clarify the naturally derived raw materials that may have an impact on biodiversity.

We discovered that there were no items among main raw materials, but there were some such items in some auxiliary raw materials. We conducted an investigation to determine the impact of these materials. We found no impact at this time. We will continue to conduct similar investigations when using raw materials that may have an impact.

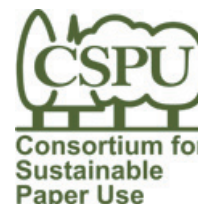
2) Sustainable Paper Usage

While not a main raw material, paper is used for copies, publications, envelopes, and packaging material. As such, JSR Group is working toward sustainable paper use and has participated in the Consortium for Sustainable Paper Use, which was established to increase the use of sustainable paper in society, since its establishment in 2013.

We promote activities throughout the Group that prioritize the procurement of company envelopes, copy paper, and other materials made primarily from used paper, or paper with FSC or other forest sustainability certifications in accordance with the JSR Group Paper Procurement Guidelines, which were established in FY2013 to promote forest sustainability.


In FY2018, we announced our support for "Find the Mark and Protect Our Forests: FSC Forest Week 2018," an FSC Japan-sponsored campaign intended to raise awareness of FSC, and are assisting efforts to spread the FSC mark. The campaign aims to raise public awareness of FSC based on this concept: "Everyday purchases can help conserve forests. Find the FSC mark and protect our forests." Click on the link below to find out more about this campaign.

<https://forestweek.net>





Policy 2 - We work to make the green spaces of our business establishments biodiversity-friendly.



By FY2014, we were able to improve green spaces at our 3 domestic plants and the Tsukuba Research Laboratories based on the Green Space Improvement Plan that we created with the cooperation of experts as well as using the results of a green space survey conducted in accordance with the JBIB Guidelines for Sustainable Business Sites. Each office is continuing to conduct similar activities independently.

Yokkaichi Plant	
Overview of Activities	<ul style="list-style-type: none"> Green space developed based on the 5-year plan to improve conservation of biodiversity at plant sites (FY2013-FY2017) Maintaining a green space around company housing with an eye to protecting biodiversity
FY2017 Activities	<ul style="list-style-type: none"> Installation of 15 signs that help people walking on paths in the green space learn about the plants and animals living there Upgrade of piles around undeveloped areas to allow before-and-after comparison of the plant's green space
Future Activity Plans	<ul style="list-style-type: none"> Active use of the plant's green landscape as a place for communication and environmental education Holding of biodiversity-themed events for employees and their families Maintenance and management of improved green spaces at the plant site and company housing
	 <p>A sign explaining the plants and animals living in a green space</p>

Chiba Plant	
Overview of Activities	<ul style="list-style-type: none"> Green space was developed with regard to biodiversity at the entrance of the "Ikoi no Hiroba" (Relaxation Garden) that is part of the green space at the plant site. This space serves to make local residents as well as employees and their families more aware of biodiversity.

FY2017 Activities	
<ul style="list-style-type: none"> Holding of family events using wood from "Ikoi no Hiroba" on the plant's grounds 	
Future Activity Plans	
<ul style="list-style-type: none"> Holding of annual family events Study of additional uses of Ikoi no Hiroba 	

Kashima Plant	
Overview of Activities	
<ul style="list-style-type: none"> Green space at the plant site was used to build a pond that recreates the local ecosystem. This space serves to make local residents as well as employees and their families more aware of biodiversity. 	
FY2017 Activities	
<ul style="list-style-type: none"> Implementation of biological monitoring surveys on the plant's grounds (autumn and spring) Additional planting of fruit trees (mikan, lemon, persimmon, yuzu) Additional installation of birdhouses Eradication of invasive plants (lance-leaved coreopsis) 	
Future Activity Plans	A biological monitoring survey
<ul style="list-style-type: none"> Planning to strengthen development of green spaces 	

Tsukuba Research Laboratories	
Overview of Activities	
<ul style="list-style-type: none"> Establishment of a biodiversity promotion area and wildlife-friendly green-space management 	
FY2017 Activities	
<ul style="list-style-type: none"> Curtailed use of chemical substances (herbicides) within the area Effective use of materials originating in the area <ul style="list-style-type: none"> Development of walking paths using chipped tree cuttings Creation of compost and soil from fallen leaves Periodic monitoring and removal of nonnative species 	
Future Activity Plans	
<ul style="list-style-type: none"> Continuation of existing activities 	
Photos	
<p>The photos show the area before activities began (June 2012) and now (June 2017).</p> <p>Although the soil was exposed and almost entirely covered with moss in 2012, better diversity can now be seen as the result of five years of activity. (Undergrowth has filled in and soil is being created by fallen leaves.)</p> <p>* A walking path created with tree cuttings and a beetle habitat made with dead branches can be seen in the 2017 photo.</p>	

Policy 3 - We strive to develop biodiversity-friendly products.

We are incorporating and promoting environmentally friendly product standards.

Policy 4 - We emphasize staff engagement and cooperation with local communities.

We hold various events at our offices as part of our business activities.

7. Environmental Accounting

• Policy

JSR introduced environmental accounting in FY1999 with the following two objectives

1. To strive to quantify the amount of resources invested into the environment and implement sound measures for the environment.
2. To publish environmental accounting and increase corporate transparency.

- **Scope**

JSR Corporation - JSR Head Office, Yokkaichi Plant, Chiba Plant, Kashima Plant and Research Laboratories

- **Target Period**

April 1, 2017 - March 31, 2018

- **Underlying Assumptions regarding Aggregation and Calculation**

1. Calculations are performed in accordance with the Environmental Accounting Guidelines, 2005 edition (Ministry of the Environment) and environmental guidelines used in the chemical industry (issued by the Japan Chemical Industry Association and the Japan Responsible Care Council).
2. While the calculation of costs was based mainly on actual results, the calculation of some expenses was based on underlying assumptions.
3. Economic effects were substantial and did not include conversions of risk aversion effects or deemed effects into monetary amounts.

* Units of one million yen

* Abbreviations - YP: Yokkaichi Plant, KP: Kashima Plant, CP: Chiba Plant

(1) Environmental Protection Costs

(Unit: one million yen)

Classification		Content of main activities Figures in parentheses express millions of yen.	Investment		Expense	
			FY2016	FY2017	FY2016	FY2017
(1) Business area costs)			291	584	4,228	4,017
Breakdown	(1)-1 Pollution prevention costs	Investments: Air pollution, water pollution, odor countermeasures, etc. (YP: wastewater facilities measures: 157; etc.) Expenses: Air pollution prevention maintenance and management (586), etc.	197	346	1,773	1,577
	(1) -2 Global environmental protection costs	Investments: Self-generation of power, etc. (YP: Upgrade of ancillary equipment for boilers (58), etc.) Expenses: Self generation of power maintenance (798), etc.	45	75	866	890
	(1) -3 Resource circulation costs	Investments: Upgrade of industrial waste processing facilities, establishment of recycle centers, etc.) Expenses: industrial waste recycling, etc.	49	164	1,589	1,550
(2) Upstream/downstream costs			0	0	0	0
(3) Management activity costs		Expenses: Environmental impact monitoring, ISO 14001	4	15	523	485

	maintenance and operation, etc.				
(4) Research and development costs	Expenses: Development of environmentally friendly products, tests for legal applications, etc.	0	0	1,380	1,384
(5) Social activity costs	Expenses: Donations to environmental protection organizations, support for ICETT, etc.	0	0	41	41
(6) Environmental pollution response costs		0	0	0	0
Total		295	599	6,172	5,927

(2) Environmental Protection Effects

Effect	Index	Unit	FY2016	FY2017	Difference *8	Related information
Environmental effects related to resources used in business activities	Total energy consumption (crude oil equivalent)	kL	267,500	266,300	-1,200	For more information
	Use of resources designated under PRTR Act	tons	880,814	903,081	22,267	For more information
	Water consumption	1,000m ³	14,400	14,200	-200	For more information
Environmental protection effects related to environmental impact and waste emitted from business activities	CO2 emissions	tons	657,400	652,800	-4,600	For more information
	SOx emissions	tons	5	5	0	For more information
	NOx emissions	tons	305	335	30	For more information
	PRTR substance emissions	tons	276	292	16	For more information
	Total amount of waste water	1,000m ³	12,161	12,108	-53	For more information
	Chemical Oxygen Demand emissions	tons	459	457	-2	For more information
	Total nitrogen emissions	tons	139	156	17	For more information
	Total phosphorus emissions	tons	0.7	0.7	0	For more information
	Waste materials from plants	tons	24,394	23,116	-1,278	For more information

	Off-site recycling	tons	23,977	22,445	-1,532	For more information
	Reduced volume of waste treated off-site	tons	417	670	253	For more information
	Waste materials from plants disposed of by landfill	tons	0	0	0	For more information
	PRTR materials transported	tons	342	536	194	For more information
Other environmental effects	Products transported	million ton-kilometer	562	534	-28	For more information
	During transport CO2 emissions	tons	25,495	24,437	-1,058	For more information
	Number of environmental complaints (Odor, noise, and vibration)	cases	0	0	0	For more information

*8 Improvement from previous years has not been corrected in terms of the production volume.

(3) Economical Effects of Environmental Protection Measures - Substantial Effect-

(Unit: million yen)

Effect (for one year)		Benefit	
		FY2016	FY2017
Cost reduction	By saving energy	64	185
	By saving resources	130	51
	By treating waste on-site	588	397
Total		782	633

(4) Consolidated Accounting

(Unit: one million yen)

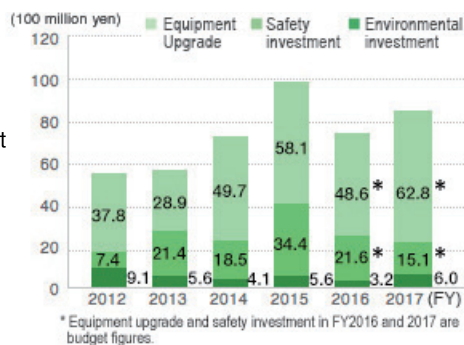
	Investments		Expense		Benefit	
	FY2016	FY2017	FY2016	FY2017	FY2016	FY2017
JSR	295	599	6,172	5,927	782	633
Group companies	102	157	2,216	2,112	428	399
Total*	397	756	8,388	8,040	1,210	1,032

*Total of JSR Corporation and 13 JSR Group companies

(5) Development of New Environmental Protection Technologies

1) Amount of Capital Investment

JSR makes continuous investments in the environment and safety. Investments made in FY2017 reached 8.4 billion yen. This consisted of plant and facility investment aimed at various environmental improvements such as energy-saving equipment, and safety improvements such as workplace accident prevention. JSR will continue to make ambitious investments to maintain and improve the environmental, safety, and health aspects of operations in accordance with its medium-term capital investment plan.



2) Main Areas of Environmental & Safety Capital Investment (Year in parentheses represents the investment year)

- Full-scale anti-seismic measures for facilities (FY1995-)
- Sludge dryer system (FY2012)
- Installation of safety equipment to eliminate industrial accidents (FY2014-)

3) Development of New Environmental Protection Technologies

Led by its Process Development Center, JSR is actively engaged in the development of new technologies to promote environmental protection. The following are recent themes in technological development approached by JSR. We deploy technologies as they are developed.

4) Main Areas of Environmental & Safety Technology Development

(1) Development of Energy-Saving Processes

- Computer-assisted optimization of heat recovery (pinch technology)
- Computer-assisted optimization of energy use in control systems
- Energy-saving through changes in heat recovery and solvent types across multiple plants

(2) Other Technologies to Reduce Environmental Impact

- Development of solution polymerization manufacturing facilities and a new solvent recovery process (to reduce hydrocarbon emissions into the atmosphere)
- Development of synthetic rubber manufacturing facilities and dry exhaust systems (to reduce odors near plants and hydrocarbon emissions into the atmosphere)
- Development of polymerization technologies to combat total nitrogen emissions (measures to prevent eutrophication of ocean waters)
- Development of environmental technology through more effective use of microbes (to reduce odors near plants and to improve the quality of wastewater)
- Incineration technology for dry synthetic rubber dry exhaust (measures for harmful atmospheric pollutants)
- Installation of a sludge dryer system (to reduce CO₂ emissions and promote effective utilization of waste)

8. Maintenance Management Information Regarding Waste Treatment Facilities, By-Product Reduction Plan

* Only Japanese version available.





(1) Maintenance Management Information regarding Waste Treatment Facilities (Yokkaichi Plant)

1) Maintenance Management Information

- FY2017 ([PDF 86.8KB](#))

- FY2016 ([PDF 90.6KB](#)) 
- FY2015 ([PDF 90.2KB](#)) 
- FY2014 ([PDF 96.0KB](#)) 
- FY2013 ([PDF 95.0KB](#)) 
- FY2012 ([PDF 83.8KB](#)) 
- FY2011 ([PDF 53.4KB](#)) 
- FY2010 ([PDF 34.3KB](#)) 

2) Periodic Inspection Notifications

- Incinerator #1 (primary reactor) Industrial Waste ([PDF 272KB](#)) 
- Incinerator #2 (Fluidized bed incinerator #1) Industrial Waste ([PDF 260KB](#)) 
- Incinerator #4 (Fluidized bed incinerator #2) Industrial Waste ([PDF 259KB](#)) 
- General Waste ([PDF 263KB](#)) 

3) Licensing

- Industrial Waste Disposal Permits ([PDF 453KB](#)) 
- Special Control Industrial Waste Disposal Permits ([PDF 422KB](#)) 
- Specific Waste Treatment Facilities License ([PDF 911KB](#)) 

(2) By-product Reduction Plan Based on Laws Promoting the Effective Use of Resources

- By-product Reduction Plan Based on Laws Promoting the Effective Use of Resources ([PDF 128.9KB](#)) 

Social Issues Attributable to JSR Group's Corporate Activity

Human Rights

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for details concerning promotion organization.](#)

1. Philosophy
 - (1) Code of Conduct for Respecting Human Rights
 - (2) Code of Conduct for Providing a Comfortable Work Environment
2. Structure
3. Response to Human Rights and Labor Issues
4. Participation in Global Initiatives

1. Philosophy

JSR Group respects human rights and prohibits discrimination by establishing the following codes of conduct for human rights and labor in the JSR Group Principles of Corporate Ethics.

- [Click here for JSR Group Principles of Corporate Ethics](#)

(1) Code of Conduct for Respecting Human Rights

- 1) We will respect and uphold basic human rights, such as the Universal Declaration of Human Rights, declared internationally and protected under the constitutions and legal precedents of respective countries, and will not infringe on basic human rights.
- 2) We will abide by national and international labor codes and respect workers' right of association and right for collective negotiation in the realm of basic labor rights.
- 3) We shall never allow child labor or forced compulsory labor, whether at JSR Group or in the workplaces of business partners and collaborating companies.

(2) Code of Conduct for Providing a Comfortable Work Environment

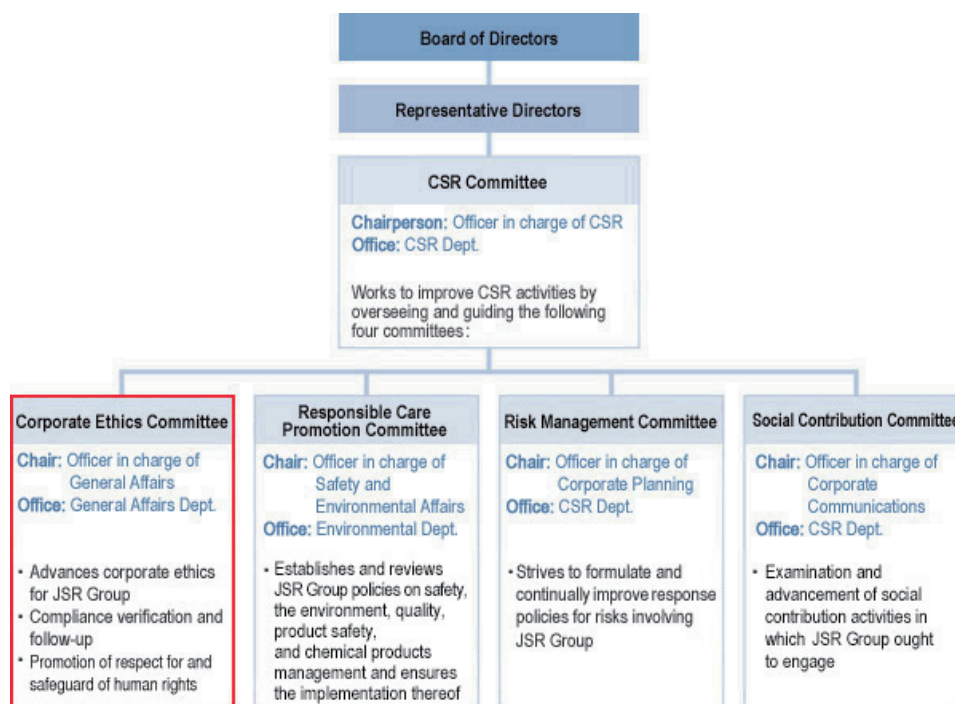
- 1) We shall ensure the fair treatment of employees, based on each person's tasks, roles, and level of commitment.
- 2) We shall respect the diversity of our workforce and make efforts to create a workplace environment that enables every employee to make the best use of their abilities and to find a rewarding sense of satisfaction in their work.
- 3) We shall respect the human rights and diverse characteristics of all individuals, and shall not discriminate against gender, age, nationality, race, ethnic group, origin, religion, beliefs, social status, physical disability, sexual orientation, or other relevant conditions when determining employment status and/or working conditions.
- 4) We shall not force religion and/or belief on others.
- 5) We shall provide a workplace free from sexual harassment and any harassment arising from positions of power. In addition, we will not engage in or make verbal comments with sexual connotations that will make counterparts feel uncomfortable.
- 6) We shall strive to maintain and improve safety and hygiene levels for all relevant parties, based on our belief that "safety is of utmost importance to everyone working in manufacturing and the bedrock of business activities."

Additionally, we shall pay sufficient attention to the maintenance of the mental and physical health of ourselves and those we work with.

- 7) In the event that a staff member reports a violation or possible violation of the law and/or the Principles of Corporate Ethics to his/her superiors and/or internal/external hotline, we shall fully protect the said staff member's identity and protect him or her from unfavorable treatment.
- 8) We will provide a work environment that facilitates flexible "work-life management" for employees, and strive to improve both productivity and employee satisfaction.

2. Structure

Established under the CSR Committee, the Corporate Ethics Committee is charged with formulating and executing plans to promote human rights and verifying their progress.



3. Response to Human Rights and Labor Issues

(1) Freedom of Association

The JSR Group Principles of Corporate Ethics spells out our commitment to respecting workers' right of association and right for collective bargaining. In keeping with this, labor union representatives and management have regular discussions to exchange opinions and conduct Q&A sessions regarding the management environment, business conditions, major company policies, and labor union activities. They then disclose the content of these discussions to union members.

- [Click here for details.](#)

(2) Prohibition of Discrimination

In line with "1. Philosophy," we promote initiatives for utilizing the diversity of our employees, without discrimination in terms of employment or labor conditions.

- [Click here for details.](#)

(3) Management of Work Hours, Non-Work Days, and Overtime Work

We are enhancing the objectivity and accuracy of our management of employees' work hours by bringing in an electronic time and attendance system that objectively records working hours, non-work days, and other data.

- [Click here for details.](#)

(4) Reporting System

JSR Group has set up an internal reporting system called the "Corporate Ethics Hotline." We have established contact points for both internal and external reporting (namely, outside lawyers and an independent and specialized outside organization), and feed back information on responses and results from the contact points that received reports to the reporters.

- [Click here for details.](#)

(5) Human Rights along the Supply Chain

We ascertain our suppliers' activities concerning human rights and labor by conducting a CSR/sustainable procurement questionnaire. We have also introduced a suppliers' hotline.

- [Click here for details.](#)
- [Click here for information on the Hotline for Business Partners.](#)

4. Participation in Global Initiatives

JSR Group signed the Global Compact advocated by the UN and endeavors to act responsibly as a global enterprise in international society.

The JSR Group Principles of Corporate Ethics expressly present a Code of Conduct for Respecting Human Rights for the purpose of ensuring our responsible behavior.

- [Click here for details.](#)

Social Issues Attributable to JSR Group's Corporate Activity

Labor Environment

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for structure](#)

1. Philosophy
 - (1) Fundamental Human Resource Philosophy
 - (2) Course of Action: 4C
 - (3) Human Resource Development Philosophy
 - (4) Work-Life Management Philosophy
 - (5) Philosophy for Physical and Mental Health
 - (6) Workers' Union Policies
2. Human Resources Development
 - (1) Mechanisms and Specific Measures Relating to HR Development
 - (2) Utilization of Training Centers
3. Work-Life Management
 - (1) Work-Style Innovation
 - (2) Work Hours Management and Overtime Reduction Initiatives
 - (3) Flexible Working Style Support Benefit
 - (4) JSR Original Support Benefits
 - (5) Utilization of Work-Life Balance benefits and JSR Original Benefits
4. Employees Healthy Mind and Body
 - (1) Health and Fitness: JSR Health Promotion
 - (2) Physical Health Assistance
 - (3) Mental Health Assistance
5. JSR Workers' Union Activities
 - (1) Members of the JSR Workers' Union
 - (2) Communication between JSR and the JSR Workers' Union
 - (3) Communication between the JSR Workers' Union and union members

1. Philosophy

(1) Fundamental Human Resource Philosophy

JSR Group drives its organization and personnel forward based upon the following measures:

(1) Develop mechanisms and a corporate culture with a healthy balance of 'Freedom' and 'Discipline,' guided by the Course of Action's 4Cs to enable managers and junior staff to grow together, help all employees accurately perceive and solve issues in order to foster a JSR that not only maintains its organizational capacity, but ensures its future growth.

(2) Promote the globalization of JSR corporation employees while developing a globalized workforce within JSR Group as well as train and manage the Group's

human resources on a global level.

(3) Generate synergies which take full advantage of the increasing range of diversity (in terms of nationality, culture, gender, values, etc.) throughout JSR Group's vast human resource pool.

(2) Course of Action: 4C

Challenge

All employees of JSR Group should share a common global focus and desire to succeed. Employees should feel confident to autonomously take on new challenges, and learn from success while viewing setbacks as opportunities for growth and improvement.

Communication

All employees of JSR Group should base their actions on the common fundamental values of JSR Group, strive for organizational transparency, and maintain open, direct communication as the best means of sharing values and achieving common goals.

Collaboration

All employees of JSR Group will work together in the spirit of cooperation, valuing common, corporate goals over internal or departmental barriers. Employees will also be encouraged to actively collaborate with external resources and to not be bound by conventional ideas.

Cultivation

All employees of JSR group will be supported by a work environment that provides opportunities for, and encourages bi-directional communication between managers and subordinates in order for them to develop together as individuals and members of productive, supportive teams.



(3) Human Resource Development Philosophy

We are working on human resource development with the understanding that it is the greatest priority for achieving sustainable, long-term corporate growth. In particular, we are promoting human resource development in order to strengthen our organizational capacity by implementing the Course of Action "The 4Cs" - "Challenge," "Communication," "Collaboration," and "Cultivation" - of our Course of Action at a higher level, and with focus on "skill/know-how" and "awareness/motivation."

Human Resources = Skill and Know-How x Motivation

As a key goal, we will also strengthen our employees' international communication abilities.

(1) Human Resource Development Policy

- 1) Respect each employee's desire for personal growth and provide adequate support for employees who take the initiative to raise their skills and develop their careers.
- 2) Based on the idea that the development of employee skills is the foundation of a company, make "growth through work" a primary consideration and, from a long-term perspective, conduct systematic, planned, and continuous training at all group companies to support this.

(2) Types of Personnel Sought by JSR

All Employees

- 1) Professionals who are competitive on a global level in all areas of their responsibility.
- 2) Individuals who are willing to take on new challenges and who respond flexibly to changes in the environment, supporting innovation and advancement without settling for the status quo.
- 3) Team players with high ethical standards who emphasize communication, collaboration, cultivation, and taking on challenges.

Management

- 4) Supervisors who can delegate work and responsibilities to their junior staff while also leading by example, always mindful of organizational management and human resource development.
- 5) Leaders who effectively oversee the achievement of organizational goals and can also lead reforms.

(4) Work-Life Management Philosophy

JSR is actively promoting its Work-Life Management initiative. Employees are encouraged to not only develop work-related skills, but to also actively participate in social, and personal activities (e.g., social and community groups, family, volunteer activities, self-development, and hobbies). JSR believes that by encouraging our employees to become well-rounded individuals, and by finding a personal sense of self-fulfillment and satisfaction that they will then be able to bring that energy into their work.

JSR encourages all of our employees to closely manage their personal time and maintain a balanced work schedule. We are also working on implementing various systems that support flexible work styles, with special consideration for childbirth, childcare and family-nursing needs.

Work-life management is vital in the implementation of diversity management, because in order to create an organization with a diverse workforce, we must also promote a corporate culture that is open to diverse values and work styles.

(5) Philosophy for Physical and Mental Health

JSR feels that a healthy mind and body are extremely important for employees and their families to live happy lives. We also feel that they are imperative in the creation of a productive and vibrant workplace. Because of this, we have adopted various measures to help our employees work in good health, both mentally and physically.

(6) Workers' Union Policies

With the search for affluence as its guiding principle, the JSR Workers' Union works to:

- 1) Negotiate wages
- 2) Improve workplace environments
- 3) Improve welfare
- 4) Publicize leisure, public relations, and volunteer activities
- 5) Promote union activities

2. Human Resources Development

(1) Mechanisms and Specific Measures Relating to HR Development

- Continue to implement programs to realize early development of the leaders of tomorrow through the Next Leaders Development Committee
- Implement OJT and Off-JT training with a greater emphasis on motivation, a critical ingredient for the development of employee skills and knowledge
- Enhance language and cultural programs in international communication such as intensive language courses and overseas training in China

- Continue and expand training to support the passing on of technological expertise and development of manufacturing skills common to all Group plants
- Continuation of specialized skill training for young employees
- Provide training programs with common content between Group companies

1) Various Training Programs

JSR conducts a variety of training programs to raise the skills of its employees.

In the FY2017, the total annual training time per JSR employee was 16.8 hours.

This total was calculated by including technology and skill training, employee rank-based training, and other training organized by human resources departments. It therefore does not include hours spent in education provided independently by departments or external education. Additionally, it does not include internet-based training hours.

Position	Rank-based training	Job-based Training						Objective-based Training			
		Manufacturing	Production and technology	Research and development	Planning, managing and administration	Marketing and development	Common across all areas	Six sigma	Promoting internationalization	Business skills	Life planning
General Manager, Plant Manager	Training the leaders of tomorrow (JSR Business School)				Specialized knowledge courses: External courses on management strategies: Accounting and finance, etc.		Specialized knowledge courses: Marketing and other external courses				Career-development seminars and education assistance benefits Career and life planning development support seminars MBA and MOT programs etc. Logical thinking and presentation skills training etc. Study-abroad program/trainee program/job training course in China English and Chinese language courses, etc. Champion, Black belt, Green belt, Guide seminar Course on handing down technological expertise
Manager, Team Leader	Middle management training New supervisor and management training	Pre-management training Safety, environmental preservation, quality control, facility management, personnel management, cost management									
Project Leader											
Section Manager	Subsection chief training										
Group Leader	Group leader training New supervisor training										
General Employees	Mid-level employee training	General technical skills training Safety and environmental training Quality control training Public certification training	Basic knowledge training (polymer chemistry, chemical engineering, and chemical processes)		External courses (for graduates) Accounting, finance, marketing and other external courses						
	New employee follow-up training		Understanding of JSR's unique technologies		Correspondence course (for graduates) English, accounting, finance, marketing, legal affairs, and other correspondence courses						
	New employee training		Quality control (levels: introductory and intermediate)		Technical skill courses conducted by individual department						
			Chemical management, environmental preservation								
			Intellectual property, contracts								

2) Career Development Program

We have established the Career Development Program (CDP) to work in conjunction with other training programs in the development of human resources and the next generation of JSR.

With CDP, recent graduates will work temporarily in different departments for their first few years as part of their development.

We believe that this kind of rotation forms the basis of human resources development. Since first introduced in 1988, we have continued to improve and refine this method of training. Each employee must work in at least three different departments during their first 10 years of employment. This program produces highly capable employees that have excellent efficiency and inter-departmental communication skills due to their understanding and awareness of the relationships between upstream and downstream processes.

CDP Committee members individually interview employees that will enter CDP before forming individual rotation plans at a general CDP meeting. The Human Resources Department runs the CDP Committee, and each Division Director is a committee member.

(2) Utilization of Training Centers

Making the best use of the training centers we have established near our plants to support the continuing education of our employees, we focus on further refining our strengths in technology and human resources by passing on technical skills at manufacturing sites and expanding employee education programs.



Yokkaichi Training Center



Chiba Training Center



Kashima Training Center



**Miniature Plant in
Yokkaichi Training Center**



**Head Office Training Center
(JSR Roppongi Club)**

3. Work-Life Management

(1) Work-Style Innovation

At JSR, we are focused on work-style innovation with the goal of realizing sustainable growth for both the company and our employees.

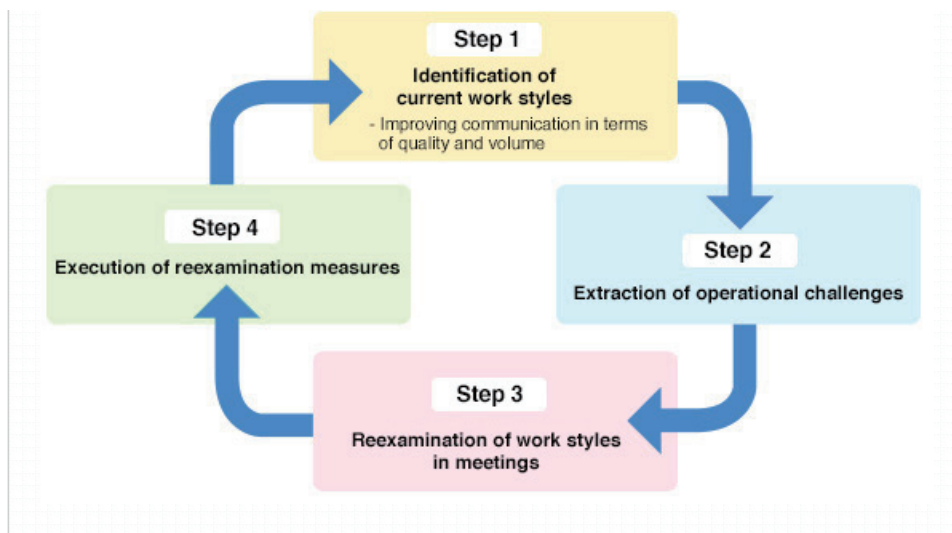
In promoting innovation-oriented activities, we will analyze factors in the workload of each department and then formulate and execute concrete measures to reduce work and alleviate workloads based on prioritization so that each employee can approach it with problem awareness. Management is demonstrating its commitment to these activities by, for example, establishing opportunities for reporting by assigned officer countermeasures proposed by each department.

Furthermore, we see three main approaches to changing work style: work place, work tools, and work time. Given this, we are implementing the "free address" system in some areas of our Head Office and Yokkaichi Plant. We are also publicizing JSR's fundamental rules on meetings and e-mail, encouraging the use of "no overtime days" at all major business locations, and encouraging the taking of paid holidays on workdays sandwiched between national holidays and in combination with three-day weekends.

A "Work-Style Reexamination Project"

For eight months that began in July 2017 and ended in February 2018, four teams selected from within JSR joined a work-style reexamination project organized by Work Life Balance Inc. The teams began with in-depth discussions on their objectives; specifically, what their essential mission is, what they want to become, and what they want to do with the time that is produced. They then moved to actual reexamination, where they gave continuous attention to the visualization and standardization of operations while acquiring know-how and methods from consultants. The project's results were presented to the President and other members of management through a final report session that was held in February 2018. Additionally, seminars for managers were held in parallel with the teams' activities for the purpose of broadly sharing know-how acquired through the project with other departments.

We plan to develop our approaches to work-style innovation in FY2018 and beyond.



(2) Work Hours Management and Overtime Reduction Initiatives

The total number of working hours per JSR employee in FY2017 was 1,966 hours. This includes, on average, 215 hours of overtime per employee, per year. In FY2004, we implemented an electronic time and attendance system to accurately record working hours. Implementing this system has enhanced the efficiency and accuracy of time and attendance reporting within JSR. It permits the keeping of objective time records that are based on entry and exit times at offices and plants and computer log-in and log-off times in addition to employees' self-reported work hours and holiday management. It also allows managers to quickly verify their employees' working hours. The system is also equipped with a support function whereby employees who exceed a certain number of work hours and their supervisors are notified of this fact via computer screen messages and system warnings. We are working on ways to foster a more efficient and transparent work culture by internally disclosing each department's overtime hours.

(3) Flexible Working Style Support Benefits

While life is a series of major events, child care and long-term nursing care have become increasingly prominent. Because of this, JSR is working to create an environment that enables its employees to balance work and caretaking needs. In an effort to increase awareness of the multitude of support structures, JSR distributes a guidebook that details the various internal and external support benefits and policies available to employees. By using these resources, JSR helps employees balance their responsibilities at work and at home.

- [Click here for Data on the utilization of work balance support benefits](#)

JSR's Flexible Working Style Support Benefits

Life Stage	Available Support	Description
Prenatal (Fertility treatment, prenatal care etc.)	- Shortened working hours	During pregnancy, employees may reduce their working hours up to two hours per day. Employees engaged in fertility treatments can reduce their working hours by up to four hours per day, or up to 44 hours per month.
	- Work from home	During pregnancy, employees are able to work from home one day per week.
Postpartum	- Maternity leave (prenatal & postpartum)*	Employees can take maternity leave starting six weeks before, and extending eight weeks after childbirth.
	- Special paid paternity leave	Male employees can take four days of special paid paternity leave anytime from one week prior to two weeks after the birth of their child.
	- Extended childcare leave*	Employees are able to take an extended leave of absence until their child turns 18 months of age.
	- Extended childcare leave counseling	Upon request by employees taking extended childcare leave, counseling sessions between the employee and their supervisor are

		held. In these sessions they discuss and aim to resolve any worries or issues that could hinder a smooth transition back to working life.
Balancing work and childcare	- Shortened working hours	Employees with non-working spouses can shorten their working hours until the child is three years of age. Additionally, employees with working spouses can reduce their working times until the child is in their third year of elementary school.
	- Work from home	Employees with working spouses may work from home one day per week until their child finishes elementary school.
	- Family-care leave	Employees can take up to ten days of leave in half-day units per year to provide nursing care for family member's that live in the same household. Uses include, accompanying family members to the hospital, medical examinations, vaccinations etc.
Balancing work and nursing care	- Shortened working hours	Employees providing nursing-care for family members can reduce their working hours by up to four hours per day, or up to 44 hours per month.
	- Work from home	Employees providing nursing-care for family members are able to work from home one day per week.
	- Family-care leave	Employees can take up to ten days of leave in half-day units per year to provide nursing care for family members that live in the same household. Uses include, accompanying family members to the hospital, medical examinations, vaccinations etc.
	- Nursing-care leave	Employees providing nursing-care for family members can take up to 20 days of leave in half-day units annually.
	- Extended nursing-care leave *	Employees providing care for family members can take up to 24 months of extended nursing-care leave. Extended leave can be broken down into as many as three periods for up to two years.

* Per employee request, mobile devices with remote access to the company network are provided under these benefits.

JSR also provides a discretionary labor system for employees in R&D, as well as a "no-core" flextime labor system for its non-shift based employees. Employees can take up to five days of paid leave per year as a part of our paid volunteer leave system. This allows employees to participate in social contribution activities that occur during working hours.



JSR and JSR Micro Kyushu are Accredited with the "Kurumin" Next-Generation Mark

In August 2007 and April 2012, JSR received the Next Generation Mark accreditation (nicknamed "Kurumin") issued by the Minister of Health, Labor and Welfare. Kurumin designates enterprises that provide superb parenting support. JSR Micro Kyushu also received the mark in May 2017.

Next Generation Accreditation Mark "Kurumin"

(4) JSR Original Support Benefits

In addition to compensation benefits available during paid leave periods via health and workers compensation insurance, JSR employees are provided with the following original benefits. These benefits aim to aid employees in maintaining a healthy work-life balance.

- [Click here for Data on the usage of compensation benefits](#)

1) Childbirth Lump-Sum Allowance

Women enrolled in JSR's health insurance program are eligible to receive a 100,000 yen per child Childbirth Lump-Sum allowance in addition to the government mandated childbirth allowance.

2) Extended Childcare Leave Allowance

Employees on extended childcare leave are eligible to receive their base salary with an additional 50% bonus for the first five days. This allowance is funded via the JSR Mutual Aid Association.

3) Post Childcare Leave Reinstatement Allowance

For employees who have returned back to work for a continuous six months following maternity leave or extended childcare leave (of at least one month) are eligible to receive an allowance of 200,000 yen per child. This allowance is funded by the JSR Mutual Aid Association for the purpose of recognizing employees past service, and continued dedication.

4) Daycare Allowance

In households where both parents work, employees are reimbursed half the cost of daycare services that are required on working days. Costs are reimbursed via the JSR Mutual Aid Association with an annual limit of 400,000 yen per eligible employee.

(5) Utilization of Work-Life Balance benefits and JSR Original Benefits

Utilization of Work-Life Balance Benefits		FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Remarks
Fertility treatments	Shortened working hours	-	-	0	0	0	0	1	Established in FY2013
Childbirth	Childbirth leave *	25	23	14	15	20	23	21	
	Extended childcare leave *	Female	24	22	15	18	20	19	24
		Male	4	3	6	2	5	11	41
		Total	28	25	21	20	25	30	65
	Extended childcare leave counseling	14	19	17	13	12	14	13	
Balancing work and childcare	Shortened working hours (Includes prenatal employees)	67	73	79	77	81	87	91	
	Work from home (Includes prenatal employees)	9	9	12	11	10	10	9	
Operating Income (consolidated)	Shortened working hours	2	1	0	3	4	2	3	
	Work from home	3	3	0	0	2	1	1	
	Nursing-care leave	4	1	2	1	6	3	8	
	Extended nursing-care leave *	0	0	0	0	1	1	0	
Other	Provision of mobile devices with remote access to the company network	9	7	4	3	2	4	13	
	Discretionary labor system	446	464	104	107	103	107	108	Number of employees at the start of each FY. (April 1st)
	Special volunteer leave (The value in parenthesis represents the total number of leave days taken)	134 (470days)	3 (8days)	4 (10days)	3 (5days)	4 (11days)	3 (7days)	0 (-)	In FY2011, major volunteering efforts were taken for earthquake

								disaster recovery.
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* Per employee request, mobile devices with remote access to the company network are provided under these benefits.

Original Benefits	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Extended Childcare Leave Allowance	27	27	21	18	25	26	67
Post Childcare Leave Reinstatement Allowance	10	19	19	23	15	19	16
Daycare Allowance	3	5	6	2	5	6	7

4. Employees Healthy Mind and Body

(1) Health and Fitness: JSR Health Promotion

JSR will advance "JSR Health Promotion" as an activity to support our work-style innovation activities and promote health and fitness among our employees, who are the foundation of organizational activity. Incorporating two approaches in the management of employees' health—a "high-risk approach" (i.e., individual attention when an employee is ill) and a "population approach" (i.e., risk reduction/prevention for all)—we will address specific issues that include prevention of lifestyle-related diseases, ensuring that employees receive health checkups and follow-ups, and mental health. At the same time, JSR Health Insurance Society will introduce a web portal site as a tool to support efforts to maintain and promote employees' health. Looking forward, we will also work to strengthen ICT in employees' health management.

JSR was Recognized under the 2018 Certified Health and Productivity Management Organization Recognition Program.

JSR was recognized as one of the "White 500" enterprises under the 2018 Certified Health and Productivity Management Organization Recognition Program (large enterprise category), a scheme run by the Ministry of Economy, Trade and Industry (METI) and Nippon Kenko Kaigi. This designation, which we also received last year, acknowledges our standing as a listed company that practices outstanding health and productivity management.

Moreover, two members of JSR Group—JSR Micro Kyushu Co., Ltd. and Japan Coloring Co., Ltd.—were recognized under the Certified Health and Productivity Management Organization Recognition Program (SME category). Both companies were similarly recognized last year.

The "Certified Health and Productivity Management Organization Recognition Program" examines large enterprises, SMEs and other organizations engaging in initiatives for overcoming health-related challenges in regional communities or for promoting health-conscious activities led by the Nippon Kenko Kaigi, and recognizes those enterprises engaging in particularly outstanding efforts for health and productivity management.

Seeing the health and fitness of each and every employee as vital to sustainable corporate growth, JSR Group will continue regarding employee health as a management issue and take proactive steps in executing measures to maintain and promote health and reexamining how our employees work.





* The "Certified Health and Productivity Management Organization Recognition Program" examines large enterprises, SMEs and other organizations engaging in initiatives for overcoming health-related challenges in regional communities or for promoting health-conscious activities led by the Nippon Kenko Kaigi, and recognizes outstanding enterprises engaging in efforts for health and productivity management.

(2) Physical Health Assistance

JSR supports its employee's physical health by providing general physical screenings, special examinations required by law, such as chemicals examinations and VDT screenings, lifestyle disease checkups, and gynecologic cancer examinations. Subsidies are also provided to employees who receive complete medical screenings and brain scans such as MRIs. Since 2008, the JSR Health Insurance Society has promoted lifestyle disease prevention screenings (diabetes, high blood pressure, and obesity) paired with health guidance and counseling to achieve promising results. Moreover, we actively work to ensure employees' health through various means, among them providing education on ways to prevent lifestyle-related diseases through the industrial health staffs of our business sites, individual counseling at health exams, and safety and health advice through workplace visits. Additionally, in addition to providing its own sports facilities as well as memberships in sports clubs through welfare service contracts, each JSR business site hosts sporting events, such as softball games, and bowling tournaments to improve health through physical activity and facilitate communication among employees. These programs have received positive feedback from employees who do not normally have the opportunity to participate in physical activities.

Examples of JSR sports facilities



Health management center (exterior) and training room, Yokkaichi Plant



JSR athletic ground next to the Kashima Plant

The JSR Health Insurance Society organized a "Head Office Exercise Support Seminar: Health Exercises." The seminar was held with the aim of ensuring that more employees are healthy and vibrant by supporting fitness in not only our plants but also our management and sales departments. Health and exercise instructors of the JSR Health Insurance Society visited JSR's Head Office and Group companies to provide instruction on "refresh stretching" that prevents stiff shoulders and lower back pain. Many employees participated even though the instruction was provided during business hours. The results of a post-seminar questionnaire survey indicated that participants were extremely satisfied, as 90% of respondents said they found the stretching helpful. We will continue health-oriented activities for the purpose of "supporting health and fitness" and strive to implement initiatives that promote health and productivity management and help improve employee productivity.



Refresh stretching (JSR Head Office)

(3) Mental Health Assistance

JSR has taken measures to improve employee mental health since the issue first began drawing attention. JSR takes a four-point approach in providing mental health support, "Check," "Organizational Analysis," "Consultation," and "Training."

Checks and organizational analysis include a biannual employee mental health JMI Health Survey conducted by JSR since FY1998. The data from these checks is used in a variety of ways. It helps individual employees understand their own mental stress levels. It also helps JSR to understand the stress levels of all employees throughout the organization. Furthermore, it is used in the implementation of various companywide policies. Since FY2012, we have been conducting web-based stress diagnostics throughout the JSR domestic group. Stress diagnostics are conducted annually via our e-Stress Diagnosis System.

Consultation includes the establishment of a program to provide counseling for employees at a location of their choosing. Counseling is conducted through a third-party professional, Human Frontier Counseling. This program has been established at each of the JSR domestic group companies as a part of our mental-health counseling support efforts. In efforts to provide stable and quality mental health counseling, occupational health professionals are present at all of JSR Corporation's offices and plants.

Training includes a variety of mental health care programs, such as self-care and line-care that properly reflects each level of JSR's organizational hierarchy.

5. JSR Workers' Union Activities

(1) Members of the JSR Workers' Union

There are 2,552 members of the workers' union as of April 1, 2018. Group companies have also established their own workers' unions.

(2) Communication between JSR and the JSR Workers' Union

JSR and the JSR Workers' Union have entered a labor agreement based on workers' union regulations.

The president and directors in charge of individual business segments have regular discussions with the workers' union to exchange opinions and conduct QA sessions regarding the working environment, business conditions, major company policies, and workers' union activities. The JSR Workers' Union discloses the content of these discussions with union members. Negotiations include labor management councils at the employee- and plant-level, local labor management councils, and Safety and Health Committees to deepen understanding and trust as well as ensure sound labor relations. Continuing from last year, our offices and plants made efforts in FY2017 to create a comfortable work environment, holding frequent discussions on overtime correction as well as the introduction of a system for annual paid leave by the hour and revision of family allowances.

(3) Communication between the JSR Workers' Union and union members

Union members at each plant represent of plant workers' opinions. They also act as a conduit between union leadership and the union members. Workplace discussions and questionnaires are conducted to ensure the ideas and opinions of union members are incorporated into union activities.

Social Issues Attributable to JSR Group's Corporate Activity

Diversity

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

[Click here for details concerning promotion organization.](#)

1. Philosophy
2. Promotion Measures and Schemes
 - (1) Promoting the Active Participation and Advancement of Women in the Workforce
 - 1) Creation of Systems to Actively Support Women in the Workplace
 - 2) Developing Programs that Support Working Women
 - (2) Career Re-Entry System
 - (3) Activation of Foreign Nationals
 - (4) Employment Opportunities beyond Retirement
 - (5) Support for Employees with Disabilities
3. Personnel Data
 - (1) Basic Data on JSR Employees
 - (2) JSR Group Employees by Region

1. Philosophy: Recruitment and Promotion of Diverse Human Resources

JSR Group is rapidly expanding its various business activities around the world, and we believe that harnessing diverse human resources is crucial for the advancement of our wide-ranging business strategies. We view the promotion of diversity as a fundamental part of our management strategy. In taking this approach, we are engaged in developing management that is focused on individualism and the respect for, and utilization of values through diversity. Furthermore, a corporate culture which is welcoming of new values and work styles is instrumental in our goals of creating a diverse workplace. We are committed to promoting these ideals with our work-life management initiatives.

The Diversity Development Office was established in FY2015 as an independent department, directly under the President. This decision was based on recommendations made by the Women's Leadership Development Task Force, implemented in 2014, who articulated the need for a department dedicated to the acceleration and promotion of diversity. The mission of the Diversity Development Office is to establish and implement initiatives which enable diversity in the workforce. In addition to our emphasis on gender equality initiatives, JSR Group shows its commitment to the future by expanding the scope of our initiatives to include foreign nationals, individuals with disabilities, and individuals in the lesbian, gay, bisexual, and transgender (LGBT community). Furthermore, our initiatives also include intergenerational work-style and mindset understanding programs.

2. Promotion Measures and Schemes

(1) Promoting the Active Participation and Advancement of Women in the Workforce

As a part of our mid-term business plan, JSR has publicly announced our quantitative targets for the active support of our female employees. We have also developed an action plan to promote and support the lives of working women within JSR, based on and in accordance with the Act on Promotion of Women's Participation and Advancement in the Workplace (Women's Act). The Women's Acts' second phase is set for April 1, 2018 to March 31, 2020. These targets demonstrate our management's commitment in achieving understanding and cooperation throughout the organization. JSR has also publicly announced each of our action plans to nurture and raise the next generation of children. These plans are based the Act on Advancement of Measure to Support Raising Next-Generation Children (Next-Generation Act), which has been in effect since April 2005. The seventh phase of which is set for March 31, 2018 to March 31, 2020. We have continued to establish, notify, publicly disclose, raise awareness of, and implement action plans throughout the first phase of the Women's Act and sixth phase of the Next-Generation Act while executing initiatives in line with both acts.

[Click here for Women's Act - Action Plan](#) 

[Click here for Next-Generation Act - Action Plan](#) 

Active support of Women in the Workforce: Quantitative Targets

	Target	FY2016	FY2017	FY2018
Percentage of women hired annually per position	College graduates, engineering positions: 15-20%	15%	20%	18%
	College graduates, administrative positions: 40-50%	60%	50%	45%
Percentage of women in managerial positions	March 2020: 4.5%	3.6%	3.8%	4.1%

* As of April 1st of each fiscal year

1) Creation of Systems to Actively Support Women in the Workplace

Refer to the page on [Labor Environment](#)

2) Developing Programs that Support Working Women

The following programs are held with special consideration for female employees, and managers, in order to increase female employees' ownership of their career development at JSR.

- Career Development Seminar for Assistant Manager-Level Female Employees (Continuing since FY2016)
- Work Communication Seminar: Managers improve their diversity management skills
(Held continuously since FY2011)
- Career Track Transfer Seminar: Employees brainstorm about career possibilities and skill development after changing career tracks within JSR.
(Held continuously since FY2010)
- General Career Development Seminar: Non-managerial, general employees develop efficient internal communication skills.
(Held annually since FY2013)

Other seminars focusing on specific themes are also held as appropriate.

Participation in the "IkuBoss Company Alliance"

In May of 2017, JSR joined the "IkuBoss Company Alliance," and initiative launched by a specified nonprofit organization called Fathering Japan (Chief Representative: Tetsuya Ando). The alliance is a network of

companies that recognize the necessity of the "IkuBoss"* movement in an age of diversifying staff makeups and are attempting to cultivate the ideal "boss" by actively changing awareness among their management ranks. JSR is the 147th company to join.

Since FY2010 we have been promoting diversity as a management strategy with the aim of fostering an organizational culture and systems that accept different values and various work styles. This is based on our belief that creating innovation with the involvement of diverse human resources is essential in responding to changing external environments and developing global business.

Through our participation in the IkuBoss Company Alliance, we will make further advancements in creating environments that allow diverse human resources to succeed and fulfill our Corporate Mission of "Materials Innovation: We create value through materials to enrich society, people and the environment."



Mr. Tetsuya Ando, Chief Representative of Fathering Japan (left), and Mr. Yasufumi Fujii, JSR Officer

* "IkuBoss": A boss (manager or management position) who enjoys his or her own work and personal life, produces results for his or her organization, and supports the careers and daily lives of his or her subordinates and staff by considering their work-life balance.

(2) Career Re-Entry System

JSR instituted its Career Re-Entry System to enable employees who voluntarily left JSR and the workforce due to marriage, childbirth, nursing care responsibilities, the transfer of a spouse, or other personal reasons to register for rehired in accordance with company needs and the former employee's desires.

FY	2013	2014	2015	2016	2017
Registered	7	8	4	5	4
Rehired	0	0	0	1	1

(3) Activation of Foreign Nationals

As JSR Group continues to expand globally, we saw the need to craft a human resources management system with the ability to support the developing human resource needs of JSR Group on a global scale. As a part of our push to globalize the employees at JSR Corporation, we have been working on diversifying our hiring efforts by hiring foreign nationals and taking in dispatch employees from our overseas subsidiaries. Through the planning of a next-generation global management training program and the strengthening of our human resources networks at domestic and international levels, we are exploring systems that will expand the managerial pools at our overseas subsidiaries to further include local staff members and researching methods of international inter-company human resource exchanges.

Workforce Globalization Efforts: Quantitative Overview

Objectives	Results		
Increase the number of foreign nationals at JSR	- Foreign nationals hired	7	Hired by JSR between FY2016 and FY2018
Enhance international dispatch training methods	- International research opportunities	9	Results for FY2016 through FY2018

	- Short term culture & language learning opportunities in China and the U.S.	28	Results for FY2016 through FY2018
Management required for the securement of a global workforce - Training and development of promising personnel in foreign offices. - Human resource development that supports overseas group companies.	- Long-term research opportunities in Japan for employees of overseas group companies.	1	Results for FY2016 through FY2018

(4) Employment Opportunities beyond Retirement

In accordance with the Act on Stabilization of Employment of Elderly Persons, JSR has systems in place that enables employees who have reached the mandatory retirement age to stay in the JSR workforce. Prior to retirement, employees complete a survey concerning their desire to continue employment. Those who wish to continue working are re-employed.

(5) Support for Employees with Disabilities

As of the end of FY2017, JSR's employment rate of individuals with disabilities was 2.47% (the statutory employment rate is 2.0%). By discussing their strengths, and the details of their disability, we are able to find a work style that best suits each employee's situation. Although there are still few employees with disabilities working in areas where hazardous materials are handled, such as manufacturing and research laboratories, we are working on ways to ensure safety while expanding employment opportunities.

3. Personnel Data

(1) Basic Data on JSR Employees

As of March 31, 2018

Employee Breakdown		Male	Female	Total
Employees (Total)		2,883	497	3,380
New hires	Recent graduates ^{*1}	66	15	81
	Mid-career hires	23	4	27
Average no. of years of continues employment		13.2	15.1	13.5 ^{*2}

^{*1} Employees hired on April 01, 2017

^{*2} Average

By FY	2013	2014	2015	2016	2017
Percentage of employees who left JSR within three years	6.3	4.2	3.4	2.1	1.1
Percentage of employees with disabilities ^{*2}	2.19	2.28	2.23	2.32	2.47

^{*2} As of March 31st of each fiscal year.

(2) JSR Group Employees by Region

As of March 31, 2018, the total number of employees of JSR Group is 7,302.

The following provides percentages by region.

Japan	Asian (Japan excluded)	United States	Europe
64%	19%	13%	4%

Social Issues Attributable to JSR Group's Corporate Activity

Supply Chain Management

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy

The Corporate Mission of JSR Group "Materials Innovation — We create value through materials to enrich society, people and the environment".

We believe that an important role of JSR Group is to offer innovative materials and excellent products that meet customer needs and contribute to the making of a better society.

We are able to respond to social issues through our business partners and supply chain management.

2. Supply Chain Management

(1) CSR/sustainable procurement

JSR Group supply chain management has a unique feature of a chemicals manufacturer supplying materials to various industries and supporting society. Specifically, that is our ability to deliver products of discernible quality to our customers reliably and without interruption.

Supply chain management is specific to each of our businesses and so is different in the Elastomers Business, Plastics Business, Digital Solutions Business, and Life Sciences Business. Our CSR/sustainable procurement policy states that when making purchases, JSR will give sufficient consideration to legal and regulatory compliance, resource protection, environmental conservation, safety, human rights, biodiversity, and other factors that lead to a sustainable society. With suppliers understanding, and through communication, mutual understanding, and cooperation, we can continue engaging in effective initiatives. Based on Purchasing Policy and CSR/sustainable procurement initiatives implemented in FY2010, we surveyed the social and environmental considerations of our suppliers using a questionnaire. When an issue was detected, we dispatched the person in charge of procurement to the supplier to work on solving the issue together. We were able to survey the suppliers that represent 99% of our purchased materials by FY2013. We will continue to conduct the same process as we establish new suppliers in the future.

In addition, along with the globalization of the supply chain in recent years, issues such as forced labor, child labor, environmental destruction, global warming, corporate scandals, etc. have occurred, boycotts and improvement requests have come up. In response to the fact that major impacts are beginning to emerge, in FY2017 we revamped and expanded the questionnaire items used for investigation as follows. Currently, we have started a questionnaire survey which will be the second round using this revised questionnaire.

< Questionnaires after revision >

Major item	Sub item
I . CSR Promotion System	1. Incorporation of CSR promotion in the company's policies and code of conduct 2. CSR-promotion organization (promotion department and manager) 3. Company-wide system that promotes legal compliance 4. CSR initiatives that include suppliers 5. Public disclosure of the status of CSR promotion efforts

II . Fair Corporate Activity	<ol style="list-style-type: none"> 1. Prohibition of corruption and bribery 2. Prohibition of giving or receiving inappropriate favors or payoffs 3. Prohibition of abuse of superior position 4. Prohibition of anti-competitive conduct 5. Provision of accurate product and service information 6. Respect for others' intellectual property rights 7. Import/export management 8. Prevention and early discovery of improper behavior
III . Human Rights and Labor	<ol style="list-style-type: none"> 1. Prohibition of forced labor 2. Prohibition of child labor 3. Prohibition of inhumane treatment 4. Prohibition of discrimination in terms of employment, promotion opportunities, treatment, etc. 5. Payment of fair wages 6. Management of work hours and non-work days 7. Respect for employees' freedom of association and right to collective bargaining
IV . Environmental Conservation	<ol style="list-style-type: none"> 1. Establishment and operation of an environmental management system 2. Management of chemical substances 3. Reduction of environmental burden 4. Reduction of GHG emissions 5. Resource conservation, resource recycling, and appropriate waste disposal 6. Conservation of water resources 7. Preservation of biodiversity 8. Disclosure of status environmental conservation initiatives
V . Health and Safety	<ol style="list-style-type: none"> 1. Safety measures for machinery and equipment 2. Workplace safety 3. Workplace health 4. Employee health management 5. Response to emergencies
VI . Information Security	<ol style="list-style-type: none"> 1. Compliance with laws concerning information security 2. Protection against threats to computer networks 3. Prevention of personal information leaks 4. Prevention of leaks of the confidential information of customers and third parties

Additionally, our policy based on the above-mentioned Purchasing Policy is to never permit the use of conflict minerals, either directly or indirectly. We gain our business partners' cooperation in confirming that we use no conflict minerals.

JSR Engineering Co., Ltd., a JSR Group company responsible for construction work, communicates the policy of JSR Group to the Safety Committee organized by its subcontractors and asks their cooperation in our CSR/sustainable procurement initiative. CSR consciousness has been increasing among business partners, who also organize separate study meetings and discussions.

(2) Green procurement and purchasing

1. Green procurement of raw materials

JSR has long been committed to green procurement, a policy that puts the highest priority on goods with minimal environmental impact when purchasing raw materials. In response to the growing industry trend in managing chemicals in the supply chain, JSR joined the Joint Article Management Promotion-consortium (JAMP)^{*1} in October 2008, and reviewed of its Green Procurement Guidelines^{*2}. JSR will continue to practice green procurement with an emphasis on disseminating information through the supply chain.

^{*1} The Joint Article Management Promotion Consortium (JAMP) was established as an inter-industry organization in September 2006 to support activities that aim to create and expand specific systems for the proper management of information on chemicals in articles (components, products, and so on) and to facilitate the disclosure and dissemination

of information within supply chains. JSR conducts activities that contribute to the practice of these principles through its participation in JAMP.

***2 Green Procurement Guidelines:**

JSR began formulating its Green Procurement Guidelines in 2000 and has been promoting environment-friendly "green procurement" based upon them. In 2008 JSR joined JAMP and revised the guidelines to bring its managed substances and format in line with JAMP MSDSplus. We again revised the guidelines during a switch from MSDSplus to chemSHERPA (a new format led by the Ministry of Economy, Trade and Industry for communicating information on chemical substances) this year. We will continue advancing green procurement with an emphasis on the dissemination of information so we can effectively manage chemical risks in our supply chains.

2. Green purchasing of office equipment and supplies

JSR defines green purchasing as the purchasing of environmentally friendly office equipment and supplies not directly related to its products or manufacturing. Green purchasing is distinguished from the green procurement of raw materials for products, packaging materials, and manufacturing facilities.

The Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (commonly referred to as the Green Purchasing Law) was enacted in 2000, and Japan's basic policy on the law was announced in 2001, when the law came into effect. Based on this policy, JSR strives to prioritize equipment and supplies with energy-saving features and high recycled content. In FY2017, green purchasing represented 136,711,000 yen out of a total of 163,995,000 yen in purchases at all business sites. This is equivalent to a green purchasing rate of 83%.

Social Issues Attributable to JSR Group's Corporate Activity

Communication with Stakeholders

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Communication with Customers and Business Partners
 - (1) Philosophy
 - (2) Communication with customers
 - (3) Communication with business partners
2. Communication with Employees
 - (1) Philosophy
 - (2) Progressing Corporate Culture
 - (3) Employee Awareness Survey
 - (4) Activities to ensure penetration of Essential Elements across the Group
 - (5) CSR & RC Explanatory Briefings
3. Communication with Communities and Society
 - (1) Philosophy
 - (2) Organization
 - (3) In the FY ended March 2017 Progress of Initiatives
4. Communication with Shareholders and Investors
 - (1) Philosophy
 - (2) Codes of Conduct
 - (3) Investor Relations (IR)
 - (4) Shareholder Composition

1. Communication with Customers and Business Partners

(1) Philosophy

The Corporate Mission of JSR Group "Materials Innovation - We create value through materials to enrich society, people and the environment".

We believe that an important role of JSR Group is to offer innovative materials and excellent products that meet our customers' needs through communication with them and to contribute to the making of a better society.

We also link communication with our business partners to improvements in our business activity.

(2) Communication with customers

1) Customer satisfaction questionnaires

We strive to make necessary improvements by having our customers evaluate us in terms of management effectiveness, product development, product quality, technical and sales support, and other areas through customer satisfaction questionnaires. Even though we routinely receive positive scores mainly in product quality, technical and sales support, and other areas, we will remain dedicated to accepting our customers' evaluations with sincerity and further improving product quality and satisfaction so that we may constantly meet changing quality demands.

2) Responses to CSR questionnaires for our customers

We aim to be a company that is trusted by its customers. One way we do this is by responding to questionnaires concerning CSR that are submitted to us by the RBA*¹ and our customers.

*¹ RBA: Responsible Business Alliance (formerly the EICC) An industrial organization that works to improve sustainability in the electronics industry.

3) Issuance of market reports

The Specialty Elastomer Department in our Elastomers Business actively supplies information to our customers in Japan by issuing monthly market reports that cover raw materials trends and other pertinent matters.

4) Receipt of Intel Corporation's Preferred Quality Supplier (PQS) Award

JSR Corporation was awarded Intel's 2017 Preferred Quality Supplier (PQA) award. The PQS award is an honor Intel presents to companies that have relentlessly pursued excellence and conducted business with resolute professionalism.

Jacklyn Sturm, Vice President of the Technology and Manufacturing Group and General Manager of Global Supply Management at Intel, says, "The dynamic nature of our business necessitates continuous improvement and an unrelenting focus on quality. As Intel transitions to become a more data centric company, our award-winning suppliers are embracing the most difficult challenges with rapid innovation and bold strategies."

To qualify for PQS status, suppliers must exceed high expectations and uncompromising performance goals while scoring at least 80 percent on an integrated report card that assesses performance throughout the year. Suppliers must also achieve 80 percent or greater on a challenging continuous improvement plan and demonstrate solid quality and business systems.

5) Receipt of Infineon Technologies' Best Quality Award 2017

At Global Supplier Day 2017, held on November 8, 2017, Corporate Vice President Quality Management Andreas Heitzer of Infineon Technologies, a world leader in semiconductor solutions (on the right in the photo) presented JSR Micro N.V. with his company's Best Quality Award 2017. This prestigious award recognizes Infineon's most outstanding supplier. It was presented to JSR Micro N.V. in appreciation for its long service as a high-quality supplier.



On the left is JSR Micro N.V.'s President, Bart Denturck



The trophy awarded to JSR Micro N.V.

(3) Communication with business partners

1) Presentation of Suppliers Awards (Digital Solutions Business)

Each year, we present Suppliers Awards to business partners who procure raw materials related to our Digital Solutions Business. We present this award to convey to our partners our desire "to raise value and achieve growth in mutual cooperation with them" and to express our gratitude for their cooperation over the years.

In presenting the award, JSR's research departments, manufacturing technology departments, procurement departments, and business departments evaluate business partners according to their own criteria (e.g., ability to present new proposals, supply performance, quality, cost, ability to meet deadlines, etc.) and provide feedback. We then choose the business partner that scores the highest for the award.

We also share the results of this process within the company and use them as a point of reference when studying raw materials needed for new product development.

2) Holding of agency meetings and presentation of agency awards (Specialty Elastomer Department, Elastomers Business)

Since 2013, we have been holding annual meetings with our agencies. The purposes of these meetings are to nurture a sense of unity with our agencies with an eye to strengthening sales and to improve their knowledge of our products by sharing problems, grasping raw materials trends, and introducing products. We also recognize domestic and overseas agencies that have made particularly noteworthy contributions to global sales.



An agency meeting

2. Communication with Employees

(1) Philosophy

[Click here to read our Philosophy.](#)

(2) Progressing Corporate Culture

JSR is actively working on reshaping its corporate culture based on the principles of freedom and discipline. Our corporate culture-related activities are comprised of cultivation, on-the-job training (OJT) promotion, and communication improvement. "Cultivation" works to help managers and subordinates develop together as individuals by promoting inter-personal communication and encouraging managers to provide their subordinates with more opportunities for independence. "OJT promotion" aims to spread preparedness to implement OJT and its philosophy among employees through training. And "communication improvement" creates opportunities for regular informal workplace gatherings and Group get-togethers.

JSR also introduced a biannual employee awards program. The "Nice Support Award" recognizes employees who play significant behind-the-scenes roles in the organization's smooth performance; in other words, roles that cannot be measured in ordinary performance-based personnel evaluations. The "Nice Try Award" recognizes those who have contributed to fostering a corporate culture in which all employees are bettering able to take on new challenges without fear of failure.

Employee Contribution Award recipients

	2017 (first half)	2017 (second half)
Nice Support Award	96	100
Nice Try Award	88	90

(3) Employee Awareness Survey

Every three years since FY2004, JSR has conducted group wide surveys on employee awareness and satisfaction in regards to the company, workplace, and work itself. By monitoring these levels, we are able to provide employees with the aggregated survey results, and corporate feedback. We also actively use the survey's results when designing and implementing policies. Starting with FY2010, we added questions to better assess our employees' awareness and comprehension of JSR's Corporate Mission, Diversity, and Work-life Management and are now using the results to promote these initiatives. We conducted the fifth survey in FY2016 and plan the next one for FY2019.

The surveys' results are reported at JSR Board of Directors meetings. In the 2016 survey, the most recent, the

response rate was high at 96.6%, indicating a trend toward stronger interest in the company's future. Additionally, employee satisfaction rose compared to the 2010 and 2013 levels, which is believed to show that human resource development that stresses corporate culture reform and dialogue have become part of the corporate culture.

(4) Activities to ensure penetration of Essential Elements across the Group

JSR provides opportunities for employees to discuss the Corporate Mission directly with the company's executives. In each meeting, lively and frank exchanges of opinion took place regarding issues such as how their departments and their own work was creating value and contributing to society based on the Corporate Mission. In addition to executive exchange meetings, various opportunities were offered to consider the Corporate Mission during training courses for employees at all levels and employees participated in group workshops. Activities to ensure penetration of Corporate Mission are now in their 7th year. We will continue with activities designed to increase the level of familiarity with and improve understanding of the Corporate Mission.



A stratified training program

(5) CSR & RC Explanatory Briefings

To promote the company's CSR and responsible care (environment and safety) activities among all employees, JSR organizes RC & CSR explanatory briefings. Every year, the officers in charge and other managers visit each business site to report the results of RC activities and share and exchange views on upcoming issues.



An explanatory briefing (JSR's Chiba Plant)

RC & CSR Explanatory Briefings

JSR business establishment (including domestic Group companies)	Date
Head office	October 31 and November 7, 2017
Yokkaichi Plant	September 22, 2017
Chiba Plant	October 19, 2017
Kashima Plant	September 8, 2017
Tsukuba Research Laboratories	October 11, 2017

CSR explanatory briefings are also scheduled at some overseas Group companies. We plan to continue holding briefings in the future.

CSR Explanatory Briefings

Group company	Date
JSR Taiwan Branch (Taiwan)	March 20, 2017
JSR Micro Taiwan Co., Ltd. (Taiwan)	March 21, 2017
JSR (Shanghai) Co., Ltd. (China)	March 21, 2017

JSR Micro Korea Co., Ltd. (South Korea)	March 22, 2017
JSR BST Elastomer Co., Ltd. (Thailand)	April 20 and 21, 2017

We also hold annual CSR Report Presentation meetings at each site for all domestic divisions, including Group companies, to further spread awareness of CSR. Each department reads the CSR reports to prepare for the creation of CSR goals for the following year and analyze the impact of their department on society. The CSR Department then analyzes the philosophies of each workplace and provides feedback to employees as part of their CSR activities.

3. Communication with Communities and Society

(1) Philosophy

JSR Group has been involved in various social contribution programs with a focus on community activities. In January 2009 we established our "Philosophy to Social Contribution" as a philosophy aimed at further strengthening our activities. We are currently implementing the initiatives outlined in this philosophy.

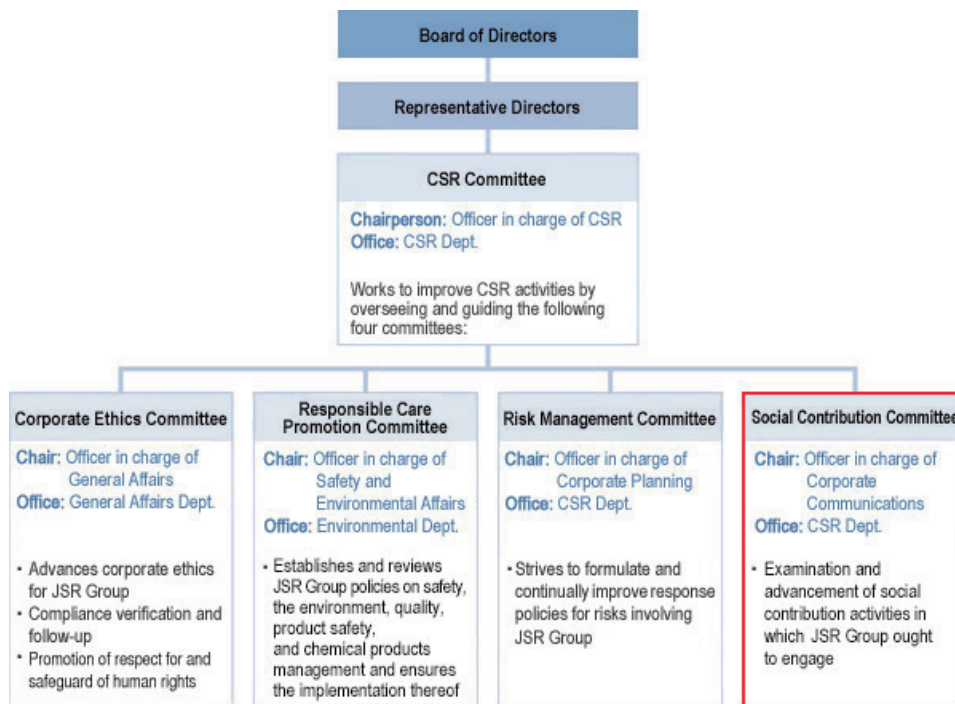
Philosophy to Social Contribution

- 1) Our Corporate Mission dictates that we contribute to society through our business activities. Further, we are actively engaged in providing solutions to social requirements and issues as a responsible member of society.
- 2) We are continuously engaged in positive social contribution activities, capitalizing on the chemical and technical knowledge and skills that form the core of JSR business.
- 3) Every employee is a point of contact between the Company and society, and we actively support our employees in their voluntary participation in social contribution activities.

Additionally, in 2010 we established "standards for making donations to disasters" in order to stipulate evaluation criteria when making donations to natural disasters. This brought greater clarity to standards and allows contributions to be made promptly and fairly.

(2) Organization

JSR Social Contribution Committee plans and executes activities that promote JSR Group's standing as a good corporate citizen.



(3) In the FY ended March 2017 Progress of Initiatives

The following section describes some of our main social and community activities for FY2017.

1) Social Welfare Activities

a. Cooperation with blood donation activities

JSR Group has long been an active participant in blood donation activities at both domestic and overseas offices and plants. In FY2016, Emulsion Technology Co., Ltd. received a letter of appreciation from the Minister of Health, Labour and Welfare for its many years of cooperation in promoting blood donation activities.

b. "Ai-no-Wakeai-Kai": Donating fruit to senior citizens' welfare centers

Following last year, JSR Micro Korea Co., Ltd. (South Korea) joined with companies in the Ochang Scientific Industrial Complex to visit and donate fruit to nearby senior citizens' welfare centers in September 2017.



c. Donation of foreign coins

The JSR Group has been conducting a foreign coin collection campaign since 2009 to assist a program that supports children around the world through the Japan Committee for UNICEF. Collection boxes for this purpose have been set up on the Tokyo, Yokkaichi, and Tsukuba Districts.

These coins are effectively utilized to protect the life, health, and rights of children in developing countries.



A collection box (Tokyo)

d. Donations to food banks

On Disaster Drill Day every September, offices in JSR Group's Tokyo District take stock of their emergency supplies. Old stored hardtack and water are replaced with new supplies. While some of these supplies are consumed through sample tasting or on other occasions, some are donated by employees and sent to the Second Harvest Japan (2HJ) food bank, a certified non-profit corporation. This helps ensure effective use of the hardtack and water, which has a shelf life of at least one month.

2HJ receives donations of food that would otherwise be disposed of for various reasons from corporations, farmers, and individuals, and sends them to welfare facilities and other organizations in need.

e. Participation in aluminum can collection activities

Since October 2010, the Yokkaichi Plant has been participating in aluminum can collection activities for social welfare organizations that help people with disabilities in Yokkaichi City learn to become self-sufficient. These welfare organizations include the "i-project," which targets children, and "Tanpopo," which targets adults. Aluminum cans are useful to multi-functional work environments that incorporate can-crushing activities into their processes. The collection of aluminum cans helps children with disabilities make connections with other people and society, and become more independent. We plan to continue participating in this activity.

f. Plastic bottle cap collection

In the Tokyo and Yokkaichi Districts and at JM Energy, JSR Group collects plastic bottle caps that would ordinarily be incinerated as waste and sells them to recycling companies. The funds earned through this activity are then used to provide vaccinations to children around the world.



Plastic bottle cap and aluminum can collection boxes (JSR Yokkaichi Plant)

g. The Table for Two Program

JSR Group's Tokyo and Yokkaichi Districts have participated in the Table for Two (TFT) program since February 2010. The TFT program provides food to children in Africa through the sharing of meals. When a participant purchases TFT-specified food, it will provide both a healthy food alternative and an opportunity to donate 20 yen per meal, which is enough to pay for a single serving in developing countries with school lunch programs. In addition, Cup for Two beverages are also offered through vending machines at JSR Yokkaichi Plant.



2) Health, Medicine, and Sports

a. JSR donations to help resolve global health issues

We make donations to medical care support programs such as the Japan branch of the Médecins Sans Frontières NGO to provide treatment for HIV/AIDS and infectious diseases such as cholera and malaria.

b. Supporting people with disabilities by Para-sports activities.

JSR is developing 3D-printed gloves for wheelchair racing as part of our 3D printing and material technology business operations.

We are supporting Para-athlete organizations such as Socio Soejima (representative: Masazumi Soejima) doing business training and assisting wheelchair athletes. In June 2018, we donated 650 kg of FABRIAL™ (filament for 3D printing) to Kukuri Co., Ltd. (president: Miyuki Soejima, operated by Masazumi Soejima). The donated FABRIAL™ is being used to make 3D-printed gloves for wheelchair athletes.



3) Academic and Research Programs

a. Participation in the Human Resources Fostering Program in Chemistry

The Human Resources Fostering Program in Chemistry was created by the Japan Chemical Industry Association (JCIA) in October 2010. It is based on a proposal made in a report prepared in April of the same year by the "Kagaku Bijon Kenkyukai" (chemistry vision study group) of the Ministry of Economy, Trade and Industry. The program informs universities of the chemical industry's human resources needs. Then industry supports the university courses that can meet these needs and their students. Its purpose is to develop the young people who will serve as the foundation for stronger international competitiveness and industrial promotion in Japan's chemical industry. We use the program to support courses engaged in outstanding initiatives and their students.

b. Supporting young researchers through sponsorship of a mini-series

We support young researchers by sponsoring the TBS TV/CBS TV mini-series "Mirai no Kigen (Origin for the Future)."

4) Education and Social Education

JSR Group provides support for next-generation development and education opportunities through our continued efforts to provide education and internship opportunities to students both in Japan and abroad. We also provide career experience opportunities.

a. Classes for elementary school students

In September and November of 2017, employees of JSR's Yokkaichi Plant visited two local elementary schools to teach science lessons for a total of 141 children.

Moreover, in October 2017 and again in January 2018, we provided a lesson on "Learning about Global Warming Prevention from a Company" to a total of 111 children at two local elementary schools through a joint program with Yokkaichi City.

Elementary school science lessons	Sept. 29, 2017	Utsube Higashi Elementary School	94 students
	Nov. 9, 2017	Kawarada Elementary School	47 students
Learning about Global Warming Prevention from a Company	Oct. 19, 2017	Shiohama Elementary School	25 students
	Jan. 23, 2018	Utsube Higashi Elementary School	86 students

b. JSR Kashima Plant - Classes for local junior high school students

In October 2017, employees of JSR's Kashima Plant gave lessons for three different classes of second-year students (75 students) at Hasaki Daiichi Junior High School in Kamisu City. Three experiments titled "Synthetic Rubber," "Balls that Bounce and Balls that Don't," and "Unbreakable Plastic" were performed in the classes. The instructors used JSR's mascot—known as Mr. Molecule—to help explain the peculiarities of materials and the relationship between molecules.



c. Participation in a program for training skilled workers to lead local industry

The Yokkaichi Plant accepted nine students from a nearby high school for a workplace experience program. The participants learned about work and safety in the plant through a plant tour and practical activities in a miniature plant.



Practice operation in the miniature plant



Safety training

d. Employee presentations at Nihon University

As part of our efforts to promote collaboration between industry and academia*, every year, the Chiba Plant holds presentations at the Nihon University College of Industrial Technology. On October 26, 2017, it presented a course titled "The Properties and Manufacturing Processes of Rubber and Quality Assurance" that attracted a great number of students.

* Ichihara City's program to strengthen collaboration between industry and academia



e. Book bag donations in Yokkaichi

Since 2014, the Yokkaichi Plant, with cooperation from JSR Group and JSR Labor Union, has participated in the "Memory Book Bag (Randoseru) for Children in Afghanistan" event held by JOICFP, an NGO engaged in international cooperation. Through the event, we donate unused school bags to underprivileged children in Afghanistan to assist their education. The event's aim is to help give children the knowledge and information they need to keep themselves and their families healthy by attending school and learning to read and write. In FY2017, we again donated book bags as well as pencils, notebooks, and other stationery. We will remain involved with the event, viewing it as a social contribution activity in which individual employees can participate.



5) Environmental activities

JSR Group continues to help with local clean-up activities of roads, coastlines, and rivers at domestic and overseas offices and plants.

a. Participation in international cleanup activities

Following last year, JSR BST Elastomer (Thailand) again participated in the International Coastal Cleanup event organized by the Ocean Conservancy NPO based in the US. In 2017, 75 employees and their families helped clean Mae Ram Phueng Beach and Namrin Payung Beach in cooperation with other companies located in the same industrial park, other local businesses, educational institutions, and community volunteers.

This event is held on the third Saturday in September all around the world to clean beaches, lakes, seas, and rivers

in various countries. The participation of nearly 500,000 people in 91 different countries makes this one of the largest marine conservation project in the world.



b. Cleanups on Toshijima Island

JSR's Yokkaichi Plant participates in coastal cleanup activities on Toshijima, an island in Toba City, Mie Prefecture.

These activities began in FY2012 and have continued each year since. Companies and organizations that are members of the Mie Prefecture Industrial Waste Solutions Promotion Committee and environmental administration of Mie Prefecture participate. JSR's Yokkaichi Plant serves as an executive member company of the committee.



6) Community activities, preservation of historic sites and traditional culture

a. Participation in the Mie Leading Industry Exhibition

In October 2017, JSR's Yokkaichi Plant participated in the Mie Leading Industry Exhibition, an event sponsored by Mie Prefecture.

It is one of the largest industrial exhibitions in Mie Prefecture, bringing together companies and organizations from a broad range of sectors—from cutting-edge fields to community-based industry. The 2017 exhibition was the 15th held thus far. JSR's booth was visited by representatives of the prefectural government and city offices, personnel from private enterprises (including fellow exhibitors), students, and members of the general public. The exhibit provided an excellent opportunity for everyone to learn more about JSR Group.

b. Participation in regional discussions

The Japan Chemical Industry Association (JCIA) RC committee holds regional dialogue meetings all over Japan as part of its RC initiatives. Participants include local residents, educators, civil servants, and members from various other organizations. They provide an opportunity to introduce participating companies, to explain their everyday safety and environmental measures to local residents to bolster their understanding and peace of mind, and to respond to residents' concerns and questions.

In FY2016, discussions were held in Yokkaichi and Kashima. In Kashima's case, we contributed to the discussion's management by serving as the chair company. The next discussion is scheduled to take place in FY2018.



Regional discussion on responsible care in Yokkaichi (held in FY2016)

c. JSR Harmony Festa

JSR Harmony Festa is held in the Yokkaichi District every year to bring JSR Group and their families together with residents in the local area. Having become a local custom, the event was attended by some 1,800 people in FY2017. Many fun and interesting activities were featured, including various sports and games, soccer lessons, and workshops. The stage was the setting for a dance performance and musical performances by junior high school bands in Yokkaichi City.

d. Donations to the Otsukado Performing Arts Preservation Society

The Otsukado Performing Arts Preservation Society in Joso City, Ibaraki Prefecture is committed to preserving the old tradition of Tsunabi, which dates back to the Edo Period. Tsunabi is a traditional play that combines puppets

and fireworks. The play is enacted with wooden dolls wrapped in fireworks that hang from a string. This play is performed for the public every year at the Grand Festival at Hitokotonushi Shrine in Otsukado. Elastimix donates to this preservation society to help keep this tradition alive.

7) Assistance to disaster-stricken areas

a. Holding of a "Tohoku reconstruction support market and wine sale with JSR Trading"

On February 22, 2018, we held a "Tohoku reconstruction support market and wine sale with JSR Trading" at JSR's Head Office for the second year in a row. Held as a joint CSR program by JSR and JSR Trading Co., Ltd., a member of JSR Group, this collaborative undertaking featured sales of specialty products from three Tohoku prefecture that were stricken by the Great East Japan Earthquake (Iwate, Miyagi, and Fukushima) and tasting and sales of wines imported by JSR Trading. Seven businesses from the three Tohoku prefectures set up sales stands. Several hundred people from both inside and outside the company visited and enjoyed purchasing products while talking to the stand operators. Sales were brisk, with some products selling out almost immediately.

Six years after the Great East Japan Earthquakes, the affected areas continue to move from the reconstruction phase to the business promotion phase. Nonetheless, more than 75,000 people* continue to live as evacuees, and thus the road to recover has only just begun. In addition to making a contribution to society through our business activities, we will continue to actively meet society's requirements and resolve social issues as a responsible member of society.



* The number of evacuees is as of January 16, 2018 (announced by the Reconstruction Agency on January 30, 2018).
Cooperation: Office for disaster victim support coordination, Reconstruction Agency, FY2017, and Mitsubishi Research Institute, Inc.

4. Communication with Shareholders and Investors

By maintaining and enhancing management efficiency, transparency and soundness, we strive to continuously create corporate value and make ourselves even more attractive to our shareholders.

(1) Philosophy

Our most important challenges are to strengthen our R&D activities from a long-term perspective, increase our competitiveness by developing new businesses, and maintain continuous growth in our business performance. We are also working hard to enhance corporate governance with the aim of developing a trusted and attractive corporate culture. Management transparency and soundness are being boosted, and management monitoring and oversight functions are being strengthened through the appointment of independent outside directors and auditors.

(2) Codes of Conduct

Code of Conduct to fulfill Responsibility to Shareholders

1) Code of Conduct for Proper Recording of Information and Disclosure

- a. When evaluating business activities, we shall focus not only on final results but also on business processes that deliver those results. We will strive to accurately and explicitly record our business activities.
- b. We shall disclose information on management and business activities in a timely and appropriate manner.

2) Code of Conduct for Preventing Insider Transactions

- a. In the case that we have and hold any undisclosed material information, we shall not release such information until it is disclosed officially. Additionally, we shall not sell and/or purchase JSR's and/or other relevant companies' shares or relevant financial products until official disclosures are made.
- b. We shall not use, for our private interests, undisclosed material information which we have come to know through conducting our business and which concerns JSR Group and/or other companies in which we engage.

(3) Investor Relations (IR)

JSR Group strives to promote investor relations (IR) with due consideration for our shareholders and investors, and to disseminate information regarding business situation and corporate policies promptly and accurately.

1) Shareholders' Meetings

JSR Group has implemented a variety of measures to facilitate the exercise of shareholder voting rights. These include the holding of the general shareholders' annual meeting at an earlier date to avoid the typical peak period of shareholders' meetings, earlier notification for the meeting, the adoption of a voting system via Internet, participation in electronic platforms for the exercise of voting rights by institutional investors, the listing of invitations to shareholders' meetings on our website in both Japanese and English, and the introduction of smartphone compatibility.

We aim to make documents attached to invitations to our shareholders' meetings easy to understand. To this end, we provide not only legally required content, but also other useful information, such as information regarding our products and an overview of our mid-term business plan. Additionally, we make effective use of graphs, photographs, and color printing.

We also employ various methods to enhance understanding of JSR at ordinary general meetings of shareholders. They include displaying panels that present JSR, explaining our business conditions with visual and audio media, and presenting a briefing on the mid-term business plan by the President.



Panel exhibition at a shareholders' meeting

2) Communication with Shareholders and Investors

In addition to conducting briefings on our business results after each quarter, we also organize seminars for investment institutions and analysts as well as various other events to achieve extensive bi-directional communication with shareholders and investors. In FY2017, we participated in several seminars for corporate investment analysts. We hold a total of nearly 250 meetings for investors in Japan and overseas per year. Feedback on opinions and questions received through these meetings is shared with management on a regular basis.



IR meetings

With regard to the global development of JSR Group companies, we voluntarily introduced IFRS* from March 2018 in an effort to improve the comparability of financial information regarding international capital markets.

* International Financial Reporting Standards

On February 21, 2018, we held a briefing on JSR Group's Life Sciences Business for securities company analysis and members of the mass media. We also conducted an observation tour of the JSR-Keio University Medical and Chemical Innovation Center (JKiC), which is a joint research facility run by JSR and Keio University's School of Medicine. During the Life Sciences Business briefing, we presented the business's positioning within JSR and our strategy for it; the circumstances of the biopharmaceuticals market, which is the business's client market; and the globally growing collaboration among Group



companies that is being achieved through acquisitions. And during the tour of JKIC, which is built in the grounds of Keio University's School of Medicine, we helped participants get a better understanding of the center by presenting its facilities and research.

3) Communication through Various Forms of Media

a. Information Disclosure on Our Website

In order to provide the latest information regarding our financial and business performances, JSR Group's website contains the section, "Investor Relations (IR)." This section includes the latest IR information, news releases, and the latest stock price information, which are indicated in a way that is easy to see. The section also presents various types of IR information, including documents regarding our business results, annual reports, IR news, information related to our stocks, documents regarding our shareholders' meetings, and our company information for individual investors. We strive to provide necessary information in a timely and easy-to-understand manner.

http://www.jsr.co.jp/jsr_e/ir/



Our website provides information regarding stock price, news, and other topics in a timely manner

b. Information Disclosure in Annual Reports

We publish an annual report every year regarding the relevant fiscal year's financial results, and management and business situations.

http://www.jsr.co.jp/jsr_e/ir/annual_report.shtml

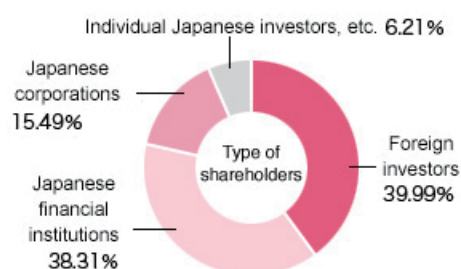
c. JSR Throughout Society

We send the "JSR Throughout Society (available only in Japanese) " brochure to our shareholders. This brochure aims to help our shareholders to understand that our Group's products are used extensively for a wide range of materials and parts needed in society. The brochure explains how our products are utilized in leading-edge fields such as fuel-efficient tires, smart phones, and life sciences field.

(4) Shareholder Composition

The number of JSR shareholders was 14,811 as of March 31, 2018; shareholder composition is as follows:

* The shareholding ratio is calculated by using 222,591,366 shares (calculated by deducting the number of treasury shares (3,534,779 shares) from the total number of issued shares) and then rounding off at the third decimal place.



Social Issues that JSR Group Can Help Resolve

Eco-Friendly Products

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy
2. Working to Solve Environmental Issues through the Deployment of E2 Initiative™
3. LCA & LCI Initiatives
4. Contribution with Eco-Friendly Products (Active Application of the E2 Initiative™)

1. Philosophy

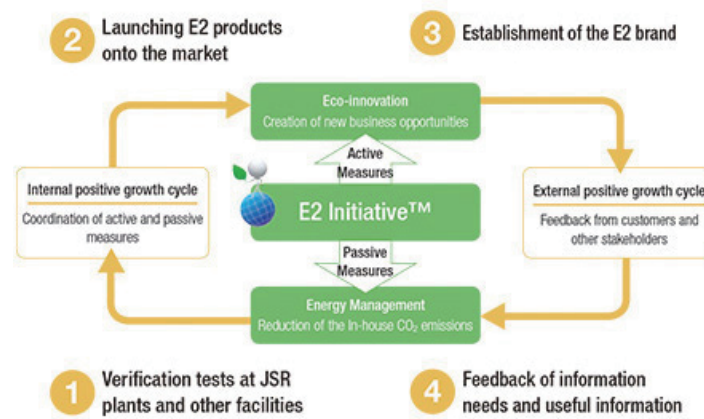
JSR Group's "E2 Initiative™" is a clear and important concept of "environmental value creation" that we constantly have in mind as we manufacture our products and develop our business. It is also used as a concept that allows us to work toward solving problems in environmental burden, resources, and climate change when we carry out our business activities.

2. Working to Solve Environmental Issues through the Deployment of E2 Initiative™

Because both humans and innumerable other living things share this planet Earth, we must make an earnest effort to deal with environmental issues. JSR Group has adopted its E2 Initiative™ as a concept to simultaneously reduce environmental impact and create new business opportunities using the environmentally-friendly aspects of our products.

The E2 Initiative™ is based on "Eco-Innovation," which is designed to create business opportunities based on the environment, and "Energy Management," which is focused on reducing CO2 emissions. It is a concept that allows us to create value both in active and passive ways. As we shifted our concept of value from the conventional two approaches of "differentiation" and "cost," our new concept of "environmental performance" has become essential.

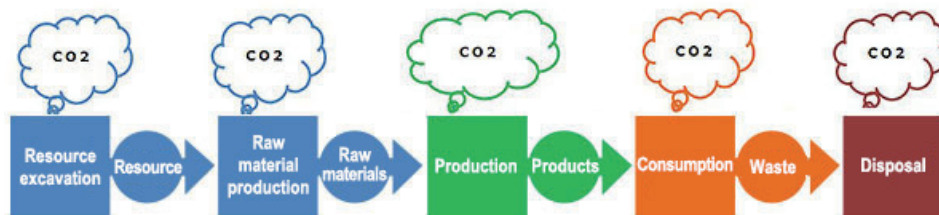
By using the "Life Cycle Assessment (LCA)" to evaluate the "environmental impact" of our products from the design stage in the product development to the use of the product, we are working to solve environmental problems throughout business operations.



- [Click here to learn about our "passive" E2 Initiative™ \(Environmental Impact Reduction\).](#)

3. LCA & LCI Initiatives

LCA (Life Cycle Assessment) is a method of quantitative assessing the environmental impact of products throughout the life cycle of each product, from the materials procurement stage to manufacturing, sales, use, and disposal.



Implementation of LCA requires that we calculate the amount of resources used when manufacturing a product and the amount of CO2 mission during all stages of the life cycle of a product (LCI data).

The entire synthetic rubber industry, including JSR Group, has engaged in LCI data calculations for representative synthetic rubber products.

The results of these calculations are stored in a database maintained by the Japan Environmental Management Association for Industry LCA Forum. For LCI data of our digital solutions products, we keep track of the amount of CO2 produced during the production.

We have started to apply LCA from the R&D stage and to operate a system of developing product designs with consideration for CO2 emissions. We have made trial LCA calculations for 55 product groups (95 representative grade types) as of March 31, 2018.

We continue to make LCA calculations for newly developed product groups and grades.

- [Click here to learn about our initiatives to reduce greenhouse gases.](#)

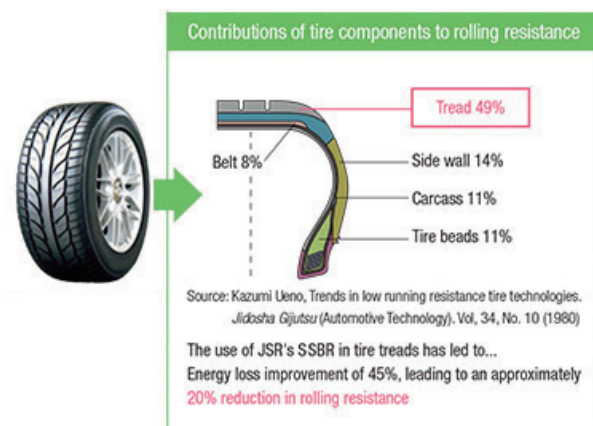
4. Contribution with Eco-Friendly Products (Active Application of the E2 Initiative™)

(1) SSBR: A Synthetic Rubber for Low Fuel-Efficient Tires with Great Potential in the Effort to Solve Global environmental Issues

Fuel-efficient tires are environmentally-friendly products and yet maintain their ability to stop safely and securely.

JSR Group's solution polymerization SBR (SSBR) has received positive feedback from customers. JSR Group

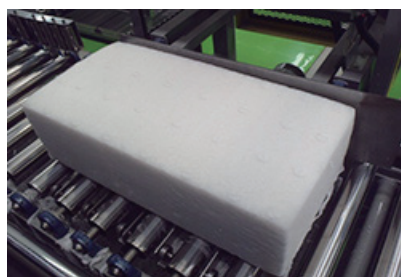
designed SSBR using technology that more readily facilitates rubber molecules and tire reinforcing material molecules to bond tightly, which reduces internal friction and rolling resistance.* In addition, this is achieved without changing the characteristics of rubber that enable tires to stop. SSBR allows large reductions in environmental impact through the entire lifecycle of the tire, from the material selection and its usage to disposal. Automobiles will still require tires even after automotive engines are replaced with electric motors. Thus, demand for SSBR is high both in countries and regions where environmental standards are high, such as Japan and Europe, and in emerging nations where reducing environmental impact is an urgent issue. SSBR is currently manufactured in two countries: At the Yokkaichi Plant in Japan and JSR BST Elastomer in Thailand. Additionally, production is scheduled to start at JSR MOL Synthetic Rubber in Hungary in 2018. We will continue helping to solve global environmental issues by meeting the global demand for fuel-efficient tires.



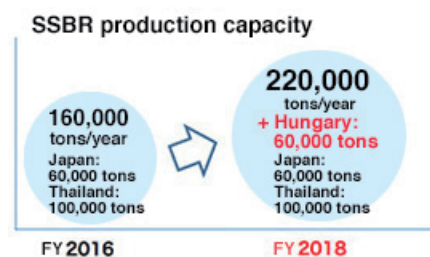
**JSR BST Elastomer Co., Ltd.
(Thailand)**



**JSR MOL Synthetic Rubber Ltd.
(Hungary)**



SSBR before packing



* Rolling resistance: Resistance in the direction opposite to the direction of tire rotation. Caused by tire deformation, ground contact friction, and air resistance.

A New "Open Innovation" Base for Generating New Business

New Research Wing of the Yokkaichi Plant (Center of Materials Innovation)

JSR maintains research centers and laboratories for the Elastomers Business and Digital Solutions Business (Semiconductor Materials, Display Solution, etc.) in the Yokkaichi Plant. With the arrival of JSR's 60th anniversary in 2017, we began operations at a new type research building, one that is in addition to these facilities, with a view to further growth in the future.

Purpose of the new research building

There are five R&D bases within the Yokkaichi Plant: The Performance Polymer Research Laboratories, which is associated with the Elastomers Business, and the Display Solution Research Laboratories, Fine Electronic Materials Research Laboratories, Advanced Materials Research Laboratories, and Edge Computing Research Laboratories, which are associated with the Digital Solutions Business. The new research building will primarily focus on research oriented toward generating new business. For this reason, it will set research themes that anticipate market needs and enable a flexible research system that is highly responsive to customer demand based on close collaboration with the five research centers and laboratories. Moreover, to improve our ability to create innovation, which is the source of JSR's competitiveness, we will give it an environment that produces spontaneous conversation and collaboration among diverse fields, making it a base for functional interaction among individual research centers and laboratories. We will also study its application in externally-linked research activity as a base for open innovation.

Characteristics of the new research building

We will promote "cross-field interaction among research centers and laboratories" and "interorganizational team-building" by establishing free-address offices and interactive spaces for the first time in a JSR research facility. The third-floor administrative office is a free-address office without fixed seating. Near the third-floor office, we set up spaces for personnel interaction by adjusting the floor height to create mezzanine-like floors (Floor 2.5, Floor 3.5, and Floor 4.5) and give employees the freedom to choose where they want to work.

Outline of the new research building

Name: Center of Materials Innovation

Location: 100 Kawajiri-cho, Yokkaichi-chi, Mie (within the JSR Yokkaichi Plant)

Total floor space: 7,286 m²



New research building: Exterior



New research building: Space for interaction



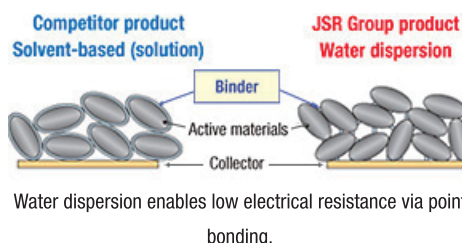
New research building: Free-address office



(2) Electrode Binders for Lithium-Ion Secondary Batteries as Part of Our Efforts to Create a Low-Carbon Society

JSR Group offers electrode binders (adhesive) for lithium-ion secondary batteries. These binders have experienced an increase in demand due to efforts for the effective use of energy and the creation of a low-carbon society.

Lithium-ion secondary batteries are used in hybrid and electric vehicles. As with normal dry-cell batteries, these



batteries have positive and negative electrodes.

These electrodes are made by bonding carbon materials or metal oxide particles, which function as the activating material, to copper or aluminum foil (collector). Binders provided by JSR Group are used in this binding process.

JSR Group binders are made by dispersing resin in water, which has a low environmental impact. This point bonding method also significantly reduces the bonding area of the resin that interferes with the electrical continuity of the active substance. This results in the creation of electrodes with low electrical resistance.

These electrodes demonstrate the superior performance of JSR Group polymer design technologies, water dispersion technologies, and battery performance evaluation technologies.

Not limited to electric vehicles, our materials are used in a wide variety of products including computers, cellphones, electric vacuum cleaners, and so on.

(3) Lithium-Ion Capacitors that Help Achieve Efficient Energy Use

Lithium-ion capacitors, which JSR Group positioned as one of its strategic businesses in the JSR2016 mid-term business plan, are an electricity storage device capable of instant charging and discharging together with a long lifespan and little propensity for self-discharge. They are currently at the center of global attention as a key technology for the more efficient use of energy, and their market is expected to expand significantly.

JM Energy Corporation, the industry's leading company, commenced the world's first high volume production of lithium-ion capacitors at the end of 2008. The company's current aim is to develop and offer lithium-ion capacitors with higher performance by utilizing JSR Group's material and precision processing technologies to expand their applications to various fields.

Laminate cells are thin, lightweight, compact, and have excellent heat radiation. Due to their ease of installation, they can be used in a wide range of applications. A module is a package of multiple cells.

Can-type modules have superior robustness. JM Energy adopted the world's first prismatic can structure as an alternative to the more common cylindrical structure. These modules excel in heat radiation efficiency and ease of implementation.

JM Energy Corporation ULTIMO™ brand of lithium-ion capacitors



Laminated cells



Laminated-cell modules



Square cells



Square-cell modules

(4) CALGRIP™ Brand of Latent Heat Storage Materials Contributes to Energy Conservation

JSR Group's latent heat storage material CALGRIP™ is a material that is able to maintain a specific temperature between -20 and +80°C over long periods of time. CALGRIP™ is utilized in fields that require energy saving or accurate temperature control such as the transportation and storage of pharmaceuticals and foods, building materials, and air conditioning.

The product was used in next generation energy-saving model houses developed by the University of Tokyo and Chiba University and exhibited at the "ENEX2014/Smart Energy Japan 2014" exhibition held at Tokyo Big Sight. In the University of Tokyo's model house, CALGRIP™ was installed in the ceilings and floors, storing solar radiation heat during the daytime and discharging it during the night to maintain a comfortable room temperature even in the winter. CALGRIP™ contributes to the reduction of energy consumption by minimizing the use of air conditioners/heaters.



Next-generation housing developed by the University of Tokyo (CALGRIP™ used in ceilings and floors)



CALGRIP™ being installed in a ceiling

(5) SIFCLEAR™ Brand of Water-Based, Stain-Resistant, and Durable Emulsion Materials Contribute to Energy Conservation and Environmental Impact Reduction

JSR Group's water-based, stain-resistant, and durable emulsion material SIFCLEAR™ is used in paints to make them resistant to contamination, helping maintain cleanness in appearance over the long-term. The high durability of the paint film reduces the need for frequent re-painting, contributing to resource conservation. In particular, when used in heat reflection paints, heat reflection effect is maintained over the long-term, achieving significant energy savings. It is also attracting attention as an environmentally-friendly material because of its ability to prevent Volatile Organic Compounds (VOCs) and the generation of odor.



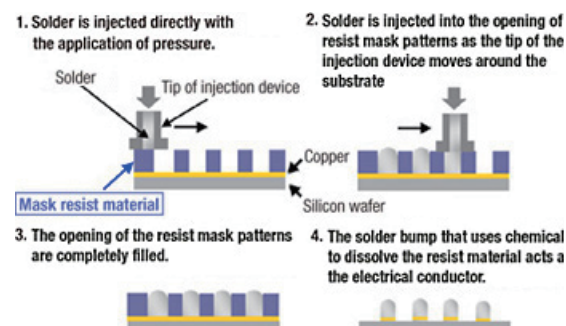
SIFCLEAR™ is used on the right butadiene tank at the Kashima Plant.

(6) Mask Resist Material*2 for Injection Molded Solder Processes that Significantly Simplifies Processing and Reduces Environmental Impact

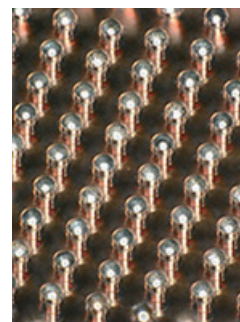
As the miniaturization of transistors and wiring in IC chips continues to advance, demand for high-performance equipment used to build IC chips during semiconductor mounting processes continues to increase. JSR, IBM Japan, and Senju Metal Industry Co., Ltd. have worked together to develop a revolutionary injection molded solder (IMS) process that enables advanced high-density semiconductor mounting processes.

IMS is a technology in which a specialized soldering device directly injects solder into the opening of mask resist material formed on substrates. The mask resist material developed by JSR can resist temperatures up to approximately 250°C, which is the temperature at which solder is used. This enables extremely fine solder bump*3 patterns of 30 microns to be formed anywhere on substrates.

This eliminates the significant amount of plating required with conventional electrodeposition methods, the corresponding maintenance, and the large amount of waste disposal. With a 100% utilization ratio of solder, this environmentally friendly process generates zero process inefficiency and reduces waste products. In comparison with conventional methods, this method simplifies processes and has low environmental impact, and so we hope that this method will be utilized more and more.



Solder bump forming process using injection molding



Finished solder bumps (bump diameter: 50 microns)

*2 Mask (photo) resist material: Resin for which solubility changes with light. Patterns can be formed by applying this material to wafers and then exposing it to light and developing it with chemicals. This material protects the wafer

surface.

*3 Bump: A protrusion of solder that acts as an electrode to electrically connect the semiconductor device to the substrate.

(7) HUSHLLOY™ Reduces Squeak Noise, Grease Application, and Non-Woven Fabric Lamination

HUSHLLOY™*4, a product of JSR Group's Techno-UMB Co., Ltd., has revolutionary effects in reducing the squeak noise caused by plastic joints in vehicle interiors.

Ordinarily, squeak prevention is achieved by applying grease or attaching felt fabric to plastic car parts. However, the use of HUSHLLOY™ makes these countermeasures unnecessary, allowing component manufacturers to shorten their production process and save energy. In addition, since the material itself has the effect of minimizing squeak noise, maintenance is not required for a longer period of time.

*4 HUSHLLOY™ is a registered trademark of Techno-UMB Co., Ltd.

(8) FUELOCK: A Hose Material for Cars Running on Bioethanol Gasoline

"JSR FUELOCK" is suitable as a hose material for cars that run on bioethanol gasoline because it demonstrates superior performance with that fuel.

If a car is run on bioethanol produced from the starch of a crop that was produced from a plant's photosynthesis using the sun's energy and carbon dioxide in the air, its carbon dioxide corresponding to the plant's photosynthesis becomes zero (i.e., the car becomes so-called "carbon neutral").

"JSR FUELOCK" is helping make bioethanol gasoline cars more popular and is therefore useful as an indirect means of combatting global warming.

Social Issues that JSR Group Can Help Resolve

Contributing to a Healthy and Long-Living Society and Better Access to Healthcare and Medical Care

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. Philosophy

One in every three Japanese persons is expected to be over 65 years of age by 2035 (according to the survey conducted by Statistics Bureau, Ministry of Internal Affairs and Communications in September 2014). This super-aging society is already creating issues such as increased medical care expenses and elder-to-elder nursing. Extending healthy life expectancy without daily assistance or care is now an issue that our society faces. Development of personalized medicines which enhance the efficacy of therapies by matching treatment methods more precisely to the condition of the individual patient will increase healthy life expectancy in the future. Healthcare methodologies and techniques will likely change during the coming years. Examples of this shift include the development of diagnostic technologies for early detection of disease as well as advances in highly effective treatments and pharmaceuticals to treat serious diseases at early stages. JSR Group's Life Sciences Business, which contributes to personalized medical care and other fields, is the Group's third base business, following the Elastomers Business/Plastics Business and Digital Solutions Business.

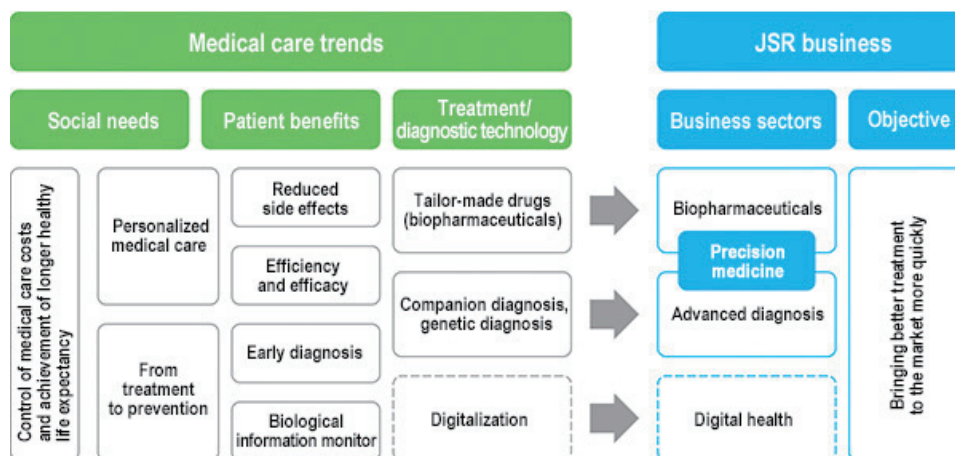
2. Medical Care Trends and JSR's Life Sciences Business Fields

Speeding up the practical application of advanced therapies for quick delivery to patients—that's JSR's challenge. As drug development becomes increasingly sophisticated, the cost and time required to develop drugs is growing and becoming a major issue within the pharmaceuticals industry. It has been reported that, between 2006 and 2014, the cost required for major pharmaceuticals companies of the world to commercialize one molecule as a drug was between 3.2 and 32.3 billion dollars (roughly between 300 billion and 3 trillion yen).^{*1} Moreover, the average length of time needed for a new drug to reach the market was 12 years.^{*2}

Advancements in innovation and analytical technologies as well as new understanding of biology have made drug discovery—and particularly the biologics and precision medicine fields—more complex. In accordance with such medical care trends, JSR Group is developing businesses centered on the bio-pharmaceuticals and advanced diagnosis fields. Moreover, we will continue working to raise treatment development success rates, shorten development periods and improve treatment efficacy in bio-pharmaceuticals-centered fields.

^{*1} Source: Shuhmacher, Gassman, Hinder, Journal of Translational Medicine

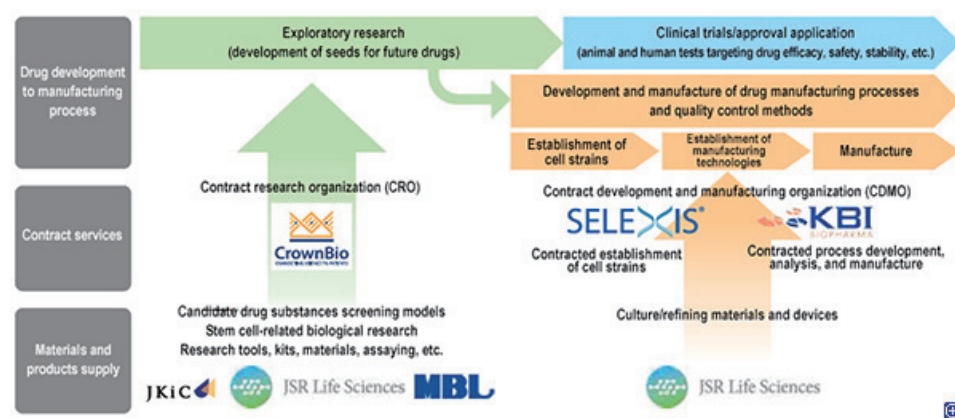
^{*2} Source: California Biomedical Research Association



3. Structure of the Life Sciences Business

JSR has built the structure of its Life Sciences Business through mergers and acquisitions to help bring greater efficiency and shorter time frames to the drug development process.

The Structure of JSR Group's Life Sciences Business



(Current as of May 31, 2018)

KBI Biopharma Inc., a company that became a consolidated subsidiary in 2015, possesses powerful technologies in biopharmaceuticals analysis and manufacturing process development. It undertakes contracted analysis and manufacturing process development from pharmaceutical companies as well as contracted manufacturing of commercial drugs.

Selexis S.A., which we acquired in July 2017, is a company that develops cell lines capable of efficiently and stably culturing proteins such as antibodies that become the basis of drugs. It accepts contracts for the development and supply of the optimal cell lines in accordance with proteins to be cultured.

Combining Selexis' high-performance cell lines and KBI's analysis and process development technologies allows us to shorten the time required for drug development.

JSR makes a contribution by using this capability in materials development to provide the various culture mediums and purification materials that are used in the manufacture of biopharmaceuticals. Using Selexis and KBI as platforms for evaluating such advanced materials and utilizing them for development helps us enhance the efficiency of our materials development. JSR markets Amsphere A3, a high-capacity Protein A chromatography resin used in the process of manufacturing antibody drugs, and KBI plays a major role in developing and expanding the sales of this product.

Crown Bioscience Inc., which JSR acquired in 2018, provides services that can improve the efficiency of drug discovery research. Crown possesses the world's largest number of PDx³ models. The use of diverse PDx models that are built from various patients' cancer tumors permits drug testing in an environment approaching that of the human body prior to clinical trials in humans. This helps improve the probability of success at the clinical trial stage.

Additionally, Crown also accumulates data on genes, proteins, and other components of various cancer tumor types. By testing proteins that will become drug candidates with PDx models and analyzing them with a database, Crown can identify candidates for factors (biomarkers) that influence drug effects. Doing this makes it possible to select only those patients who possess factors on which the drug is effective and permits the efficient planning of clinical trials. Furthermore, when a candidate drug substance being developed is actually approved and put to practical use, it becomes possible to evaluate its effects prior to drug administration by diagnosing the presence of biomarkers.

In this way, the contract research services that Crown provides contribute not only to greater efficiency in the drug development process but also to the development of precision medicine.

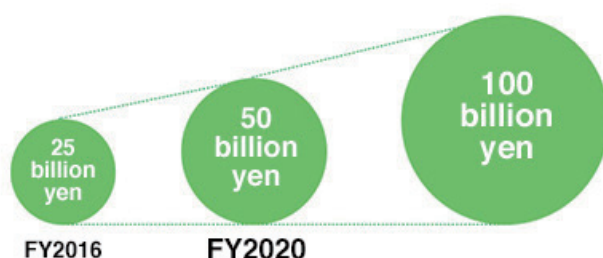
*3 PDx: Patient Derived Xenograft. The transplantation of human patient-derived cancerous tissue into an immunodeficient mouse. It is more effective than conventional methods in the screening of anticancer drugs because assessments can be conducted in an environment that better approximates that of the human body.

Medical & Biological Laboratories Co., Ltd. (MBL), which became a consolidated subsidiary in 2015, supplies various research reagents that are used in the contract research services provided by Crown. It is also contributing to the growth of precision medicine by turning biomarkers into diagnostic reagents. The JSR-Keio University Medical and Chemical Innovation Center (JKiC), an organization based on industry-academia collaboration that was launched with Keio University in October of 2017, is exploring seeds that will further precision medicine and developing screening models that will contribute to more efficient candidate drug substances screening. The results of these activities are being provided to society through Crown and other members of JSR Group and contributing to more efficient and shorter drug development processes and the growth of precision medicine.

By adding Crown, a contract research organization, to the Group, JSR can now eliminate gaps at contact points with customers who conduct exploratory drug research. Additionally, JSR has completed rebuilding its business operations framework through the series of M&As that was described above. As a result, JSR's Life Sciences Business can now seamlessly provide value in areas ranging from the supply of products and services for drug discovery processes in the pharmaceutical industry to GMP^{*4} manufacturing. It is expanding strategic basic research, diagnostic reagent development, and contract drug discovery and development services on the upstream side of the drug development process, and also expanding everything from the establishment of cell strains to manufacturing process development and contract GMP manufacturing services in the biopharmaceuticals manufacturing processes on the downstream side. JSR Group will supply innovative services, products, and materials for all processes associated with the development of new treatments to pharmaceutical companies, biotech, and academia.

*4 GMP: Good Manufacturing Practice. An international standard pertaining to drug manufacture and quality assurance.

Projected sales by the Life Sciences Business



Regarding use of genetic modification technologies:

As a matter of policy, JSR Group formulates internal safety management standards based on national laws, ordinances, and regulations that correspond to the Cartagena Protocol (Cartagena Protocol on Biosafety to the Convention on Biological Diversity) and continually adheres to them.

Opening Ceremony for the JSR-Keio University Medical and Chemical Innovation Center (JKiC)

In October 2017, the JSR-Keio University Medical and Chemical Innovation Center (JKiC) was opened at a ceremony held on Keio University's Shinanomachi Campus. JSR and Keio University agreed to establish JKiC in March 2015 for the purpose of conducting joint research as a collaborative facility for industry, academia, and medical care. The

JKiC building has three floors above ground, one basement level, and a total floor area of 3,600 m². An industry-academia-medicine collaboration office, space for interaction, exhibit space, meeting rooms are located on the first floor. Open laboratories occupy the second and third floors, and state-of-the-art 3D printers and imaging devices are installed on the basement level. Fusing medical standpoints and knowledge of materials development, JKiC will focus on four main research fields: 1. Precision Medicine, 2. Stem Cell Biology and Cell-Based Medicine, 3. Microbiomes, and 4. Designed Medical Devices. JKiC is producing innovation by pursuing the entirely new concept of fusing medicine and chemistry through industry-academia collaboration, and establishing practical technologies that will contribute to society through the realization of longer and healthier lives.



4. Contributing to a Healthy and Long-Living Society in Open Innovation

Expanding possibilities in personalized medical care with 3D software and 3D printing technology

In July of 2017, JSR acquired LEXI Co., Ltd., a medical 3D software company. LEXI began marketing 3D surgical simulation software for orthopedics in Japan for the first time in 2009 and is a pioneer in this field. Prior to this acquisition JSR was developing its business through 3D printing and associated materials technology (namely, FABRIAL[®], a 3D printer material made from biocompatible elastomer). However, we now aim to fuse these technologies with LEXI's 3D software technologies to supply services and products for personalized medical care that is more precisely, more quickly, and more easily customized to each patient. We will do this by applying 3D technologies in the preparation and analysis of 3D data for the skeleton and internal organs from digital imaging data acquired from CT and MRI diagnoses and in the preparation of optimized resin-based prosthetic devices and surgical assistance tools with 3D printing.



Example of a 3D printer-produced brace made with FABRIAL[®]

< The FABRIAL[®] R Series >



A FABRIAL[®] R Series filament and example of an item shaped with it

The FABRIAL[®] R Series is comprised of filament materials for 3D printers that were developed using JSR's own polymer technology.

Soft and pliable, the materials expand 3D printers' use applications and design diversity, and make the production of actual products possible. The series' safety is confirmed through biocompatibility tests (skin sensitization and cytotoxicity) conducted in accordance with ISO 10993.

Working to Improve the Performance of Paralympic Athletes with 3D Technology

Participation in the Sports and Health Innovation Consortium

JSR is a participant in the Sports and Health Innovation Consortium,* a body led by Keio University's Shonan Fujisawa Campus that conducts technical development to support athletes and others concerned. One of the activities of the consortium is research to improve performance by applying 3D technology to create equipment matched to individual athletes engaged in Paralympic competition. JSR joined the consortium in October 2015 as part of its effort to develop business through 3D printing and associated materials technologies. Since then we have been developing gloves for wheelchair competition.

Gloves for wheelchair competition take time to produce because they are hand-made by each athlete. Translating a glove's original shape into 3D data and then producing gloves using a 3D printer makes it possible to repeatedly reproduce gloves that fit and also shorten the time required to make them. Furthermore, making slight adjustments to the 3D data can produce gloves that are even easier to use and can help improve athletes' performance.

We will continue to provide new value that is useful to society through collaborative industry-academia initiatives such as this.



A wheelchair track-and-field event and competition glove



A glove for wheelchair competition

* Sports and Health Innovation Consortium

The Sports and Health Innovation Consortium is comprised of several private companies and represented by Professor Yuji Ogi of Keio University's Shonan Fujisawa Campus. With the opening of the 2020 Tokyo Olympic and Paralympic Games on the horizon, the consortium's aim is to conduct technical development to support athletes and others concerned through "digital humanics," an approach that "makes a science of capturing human movements in digital form and expressing and assisting them digitally." It further aims to use this as a starting point for creating technologies and businesses that will help solve quality-of-life-related social issues in the areas of sports, medicine, nursing, caregiving, and welfare.

Social Issues that JSR Group Can Help Resolve

Contribution to Quality of Life and Happiness

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. To Contribute to the Evolving Digitalization-Based Society (Digital Solutions Business)

< Society and the Coming Digital Revolution >

Today, when life without computers and the internet is no longer imaginable, are about to happen. For now, computers can only be run by programs; however, they are gradually gaining the ability to learn on their own (in a phenomenon called "cognitive computing"). The devices which we use directly—the personal computers (PCs), tablet computers, and smartphones equipped with semiconductors, displays, cameras and the like—are in fact terminal devices that connect the virtual world (a vast aggregation of various data) with people and things. Cloud computing (the "Cloud") stores and shares data through these terminal devices and the internet. The world of the Cloud is a growing virtual space composed of artificial intelligence (AI) and other technologies that dramatically become smarter by learning from enormous amounts of collected data. In the future, it will not be just "people" who are linked to this virtual space through their smartphones; indeed, many "things," such as cars and manufacturing equipment, will also be linked to the virtual space as "edge devices" through various sensors (creating a phenomenon known as the "Internet of Things": IoT). As a result, an unfathomably vast amount of data ("Big Data") will be aggregated there. AI will continue to get smarter, and eventually the day when we "people" use advanced AI unconsciously in daily life will come.

Furthermore, AI will make automation of diverse and complex operations through robotics possible. The application of such technical innovation and data will allow us to address "global social issues = true customer needs," which is something we have been unable to fully address heretofore. This will encourage economic growth gained by utilizing new technologies and data and also help solve various international issues. Our goal is to help bring about a more prosperous society for each and every person of the world.



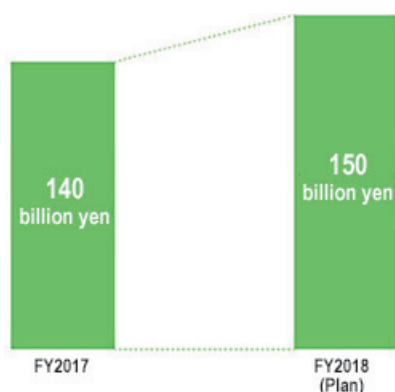
Source: Prepared based on materials of the Ministry of Economy, Trade and Industry's "New Industrial Structure Vision"

< Added Value for Society by the Digital Solutions Business >

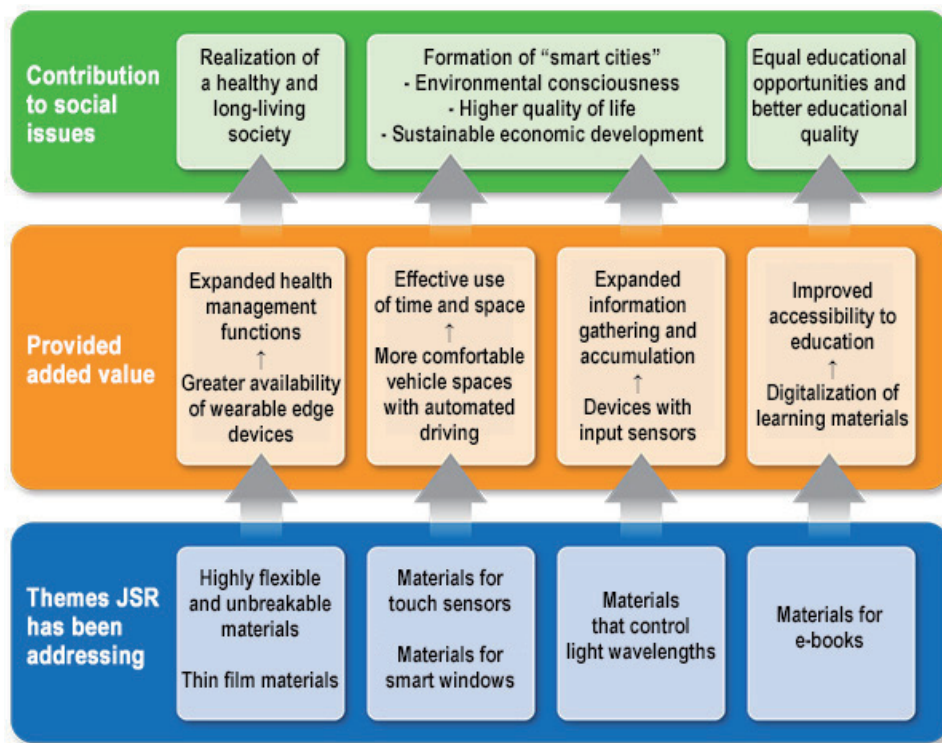
The digital solutions business of the cognitive computing age will need more than a materials-based approach whereby it simply supplies functional chemical products—specifically, differentiated high-value products. It will also require an approach that involves providing solutions that are matched to customers' needs. For this reason, JSR's Digital Solutions Business ascertains information and knowledge on cutting-edge social trends quickly and precisely as an organization, and with focus on the customer, it enables them to link to expeditious solutions. It provides added value for the resolution of social issues through products. For example, to address the social issue of realizing a healthy and long-living society, it is developing materials for wearable devices that will make constant health management possible. Also, to tackle the social issue of ensuring equal educational opportunities, it is developing e-book materials that will help to improve educational accessibility.* JSR's Digital Solutions Business will quickly respond to social change and contribute to the developing society utilizing IoT and Big Data.

* Educational accessibility: The ability to access and use educational environments without physical, informational, institutional, or psychological impediments, regardless of disability or other physical or mental circumstances or living environment.

Projected sales by the digital solution business



Examples of added value provided for social growth, using the development of Big Data and IoT as a driving force



Editorial Policy

1. Editorial Policy
2. CSR Report 2018: Formats
3. Referenced Guidelines
4. Target Period and Fiscal Year
5. Operations Covered
6. Third-Party Opinion and Independent Review
7. Publication Information

1. Editorial Policy

Under the corporate mission of "Materials Innovation - We create value through materials to enrich society, people and the environment," JSR Group aims to build and maintain good relations with all of our stakeholders and become an indispensable corporate citizen. We intend to resolve social issues by integrating management and CSR as well as demonstrating our corporate mission with actual results.

In FY2017, which marked the initial fiscal year of our mid-term business plan JSR20i9, we executed our activities by arranging identified CSR priorities into three approaches that take a stronger social perspective while achieving greater transparency and acceptability. They are: "Social Issues Attributable to JSR Group's Corporate Activity," "Social Issues that JSR Group Can Help Resolve," and "Basic Issues in JSR Group's Corporate Activity." Through this report, we aim to communicate our CSR activities during FY2017 to all stakeholders in an easily comprehensible way.

The report's Online Version provides a detailed account of our CSR activities. Its primary focus is on initiatives targeting priority issues that were arranged into the three approaches. It also includes a collection of data that organizes related details into an easy-to-reference format. This arrangement is intended to facilitate the reader's understanding of JSR's CSR activities in their entirety. In addition to the Online Version, we have published a Highlight Version in the form of a pamphlet that outlines the essence of our CSR activities in FY2017.

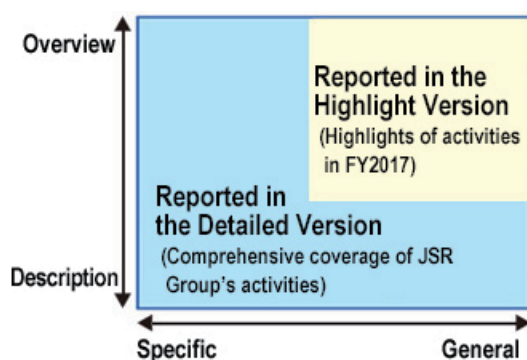
2. CSR Report 2018: Formats

JSR Group CSR Report 2018 is issued in a Detailed Version and a Highlight Version. It is provided in the following media.

Name	Content	Website	
		HTML	PDF
Detailed Version	Comprehensive report of JSR Group's CSR activities	○	○
Highlight Version	Presentation of highlights selected from JSR Group's CSR activities		○

* Both are available in Japanese and English versions.

[Click here for information on the PDF version, and previous editions.](#)



Other corporate information (products, services, financial information, etc.) can be found on the JSR website.

http://www.jsr.co.jp/jsr_e/

3. Referenced Guidelines

- Global Reporting Initiative (GRI) Standards (GRI-referenced)
- Environmental Accounting Guidelines for Chemical Companies, Japan Chemical Industry Association (JCIA)
- Environmental Accounting Guidelines 2005 / Environmental Reporting Guidelines 2012, Ministry of the Environment

4. Target Period and Fiscal Year

- The entire report
April 1, 2017, to March 31, 2018
(Some parts include activities and initiatives conducted since April 2018.)
- Portions of data concerning safety promotion activities
January 1, 2017, to December 31, 2017

5. Operations Covered

- The entire report
JSR Group: 54 companies
"JSR" and "JSR Group" are classified as follows:
JSR: JSR Corporation
JSR Group: JSR Corporation and Group companies
- Scope of data collection for RC reporting (environment, safety, health)
JSR:
Head Office, Yokkaichi Plant, Chiba Plant, Kashima Plant, Yokkaichi Research Center (Performance Polymer Research Laboratories, Display Solution Research Laboratories, Fine Electronic Materials Research

Laboratories, Advanced Materials Research Laboratories, and Edge Computing Research Laboratories),
Tsukuba Research Laboratories

Group companies:

13 domestic Group companies, and 10 overseas Group companies*
(Current as of May 31, 2018)

* For information about Group companies, see the asterisks (*) in [JSR Group Companies](#).

6. Third-Party Opinion and Independent Review

Third-Party Opinion:

Toshihiko Goto, Chief Executive Officer, Sustainability Forum Japan

Independent Review:

Responsible Care Verification Center, Japan Chemical Industry Association

The Detailed Version of the report is published following a third-party verification and approval by the CSR Committee.

7. Publication Information

Date of publication:	September 2018
Next scheduled issue:	September 2019
(Previous issue:	September 2017)

Beginning in FY2017, we will evaluate ourselves in accordance with the Mid-Term CSR Plan.
The following report describes the main activities and their results in FY2017.

FY: Fiscal Year means the year ending March 31. For example, FY2017 means April 1, 2017 - March 31, 2018

Assessment ○: Better than planned ○: As planned △: Improvement needed —: New item for this FY

Basic Issues in JSR Group's Corporate Activity	FY2017 Target	FY2017 Result	Assessment	FY2018 Target
Responsible care: Quality and product safety	• Improve relevancy of customer-oriented business strategies	• Incorporated business strategies planned from a customer orientation in QA plans and executed with a PDCA cycle • Three JSR plants completed migration to ISO 9001:2015	○	• Improve quality control systems and revamp quality control by introducing new techniques
	• Implement the Sixth Quality Performance Review as well as external and internal quality audits	• Implemented the Sixth Quality Performance Review as well as external and internal quality audits • Conducted five extra audits as well	○	• Implement the Seventh Quality Performance Review as well as external and internal quality audits
	• Provide outline of company-wide guidelines and support for new production bases and production transfers	• Implemented equalization of product quality between production bases using Six Sigma • Promoted propagation and dissemination activities throughout JSR Group, including new Group companies	○	• Establish company-wide guidelines in preparation for the construction of a global quality control framework
	• Provide environmental and safety information to customers	• Provided proper information on prototypes and products to customers by utilizing the SDS ¹ electronic management system • Petrochemicals business division held meetings with distributors and shared information and problem areas	○	• Continue current efforts
	• Continue to label products and provide SDS based on GHS ² in compliance with regulations • Comply timely with GHS in accordance with laws and regulations of each export destination	• Labeled domestic-shipped products and provided SDS based on GHS in accordance with domestic regulations • Complied as necessary as export destinations adopt GHS regulations	○	• Continue current efforts
	• Respond to new overseas laws and legislations such as the US's revised TSCA ³ as well as the EU's REACH ⁴ .	• Transferred necessary information for REACH compliance and confirmed registration status of raw materials • Confirmed status of notifications and registrations necessary for compliance with the revised TSCA	○	• Continue current efforts
Compliance	• Continue corporate ethics awareness surveys	• Conducted corporate ethics awareness surveys and followed up at domestic and overseas offices	○	• Continue current efforts
	• Continue improving awareness of corporate ethics and revision of JSR Group Principles of Corporate Ethics as necessary	• Implemented corporate ethics e-learning program • Conducted corporate ethics training for new employees and new management employees	○	
	• Improve level of legal compliance	• Confirmed periodic legal compliance verification at domestic and overseas offices • Held legal compliance seminars	○	
Corporate governance	• Continue response to the Corporate Governance Code	• Maintained compliance with the Corporate Governance Code	○	• Continue current efforts
Risk management	• Continue strengthening risk identification to reduce risk • Begin monitoring of departmental risks	• Verified and revised risks identified in FY 2016 at all JSR Group divisions • For monitoring of departmental risks, interviewed Head Office coordination departments and verified status of monitoring measures and management	○	• Reconfirm and revise risks identified in FY 2017 at all JSR Group divisions • Verify the progress and status of measures to cope with critical JSR Group risks
	• Strengthen headquarters' crisis management drill • Support BCP ⁵ formulation by Group companies	• Implemented measures to address issues identified in FY 2016 crisis management drills • Conducted crisis management drills assuming a direct hit from a large-scale earthquake on Tokyo and implemented measures to address issues identified in the drills • As a precursor to establishing and reviewing BCP decision criteria, conducted BCP drills on domestic Group companies	○	• Continue to hold and improve JSR headquarter crisis management drills (initial response drills and BCP drills) • Establish and revise BCP manuals for domestic manufacturing subsidiaries
	• Continue CSR awareness-raising activities	• Held CSR Explanatory Briefings (4 domestic bases) • Held annual CSR report presentation meetings	○	• Continue current efforts
	• Continue measures in accordance with the seismic reinforcement plan (Scheduled completion at the Yokkaichi Plant in FY2018 and at the Kashima Plant in FY2020)	• Implemented measures in accordance with the seismic reinforcement plan (Continued reinforcement work at the Yokkaichi Plant; began reinforcement work at the Kashima Plant based on the seismic reinforcement plan formulated in FY 2016)	○	• Continue measures in accordance with the seismic reinforcement plan (Yokkaichi Plant reinforcement work to be completed for manufacturing facilities in FY 2018 and for the containment building in FY 2021; Kashima Plant reinforcement work to be completed in FY 2020) Note that seismic reinforcement work at the Chiba Plant is complete

Social Issues Attributable to JSR Group's Corporate Activity	FY2017 Target	FY2017 Result	Assessment	FY2018 Target
Health and safety initiatives	• Verify effects of procedures reviewed in FY2016 and establish their operation	• Verified the effectiveness and status of application of procedures reviewed in FY 2016, such as the Change Management and Preventative Safety Assessment Procedures	○	---
	• Zero facility accidents and zero serious workplace accidents (Safety foundation) — Put new accident investigation methods into full-scale operation and provide education by using the collection of accident case studies — Start education and training systems in manufacturing departments to strengthen the transfer of technologies — Develop education and training systems for managers and full-time staff (Safety culture) — Continue current efforts to spread safety values — Implement activities to eradicate unsafe behavior • Systematically identify hazards using HAZOP and expand HAZOP ⁶ to Group companies	• Accidents Facility accidents: 2 JSR accidents, 1 Group accident Workplace accidents (requiring time off work): 2 JSR accidents, 1 Group accident *Accidents tallied for the calendar year (Safety foundation) — Started operating education and training systems at manufacturing departments — Expanded scope of safety training to managers (Chiba Plant and Kashima Plant) (Safety culture) — Conducted activities to spread safety values with the Safety and Health Activity Forum and CSR & RC explanatory briefings — Expanded activities to eradicate unsafe behavior to each business establishment — Underwent safety competency level assessments by Japan Safety Competency Center (Chiba Plant and Kashima Plant) • Began systematic identification of hazards with HAZOP (expanded to some Group companies as well)	△	• Zero facility accidents and zero serious workplace accidents (Safety foundation) — Improve mechanisms for sharing needed information — Maintain and manage information on the safety foundation and keep information up to date (Safety culture) — Continue efforts to spread safety values — Continue activities to eradicate unsafe behavior — Provide education and awareness-raising on safety mindsets suitable for the current age — Conduct safety competency level assessments by Japan Safety Competency Center (Yokkaichi Plant) • Continue systematic identification of hazards with HAZOP and implement measures for major identified hazards
	• Maintain and renew certifications on security-related laws and regulations — Renew certification as a Class 1 Pressure Vessel: Yokkaichi Plant (in November 2017 or later) — Renew certifications regarding dangerous goods completion inspection: Chiba Plant (June 2017)	• Maintained and renewed certifications on security-related laws and regulations — Renewed certification as a Class 1 Pressure Vessel at the Yokkaichi Plant (March 2018) — Renewed certifications regarding dangerous goods completion inspections at the Chiba Plant (June 2017)	○	• Maintain and renew certifications on security-related laws and regulations — Renew certification as a Class 1 Pressure Vessel: Chiba Plant • Maintain and improve security management activities in accordance with the Accreditation system acquired by plants
	• Implement audits with greater attention to process safety • Expand the number of audited departments to include overseas JSR Group companies	• Disseminated thoughts of business establishment managers on safety through audits, verified expansion of activities tailored to section operations, and, on the other hand, re-recognized sense of dissatisfaction with activities on process safety as compared to work safety • Conducted audits at overseas Group companies (Thailand, South Korea, and Taiwan)	○	• Make audits more efficient while continuing to use the previous fiscal year's audit method • Conduct priority-oriented audits, focusing on the handling of critical risks present at the audited division
Climate change mitigation	• Achieve 1% average annual reduction in per-unit energy consumption in line with the Energy Conservation Act	• Promoted project activities to conserve energy and resources throughout the company; however, target was not achieved, as the most recent per-unit energy consumption showed a 0.7% year-on-year increase	△	• Continue current efforts
	• Promote efforts for reductions with attention to government goals on CO ₂ emissions reductions	• Emissions were 653 kt-CO ₂ in FY 2017 versus 646 kt-CO ₂ in FY 2013	○	
	• Calculate greenhouse gas emissions (Scope 1, 2 and 3) throughout the supply chain and continue disclosure of this information via the CSR report	• Calculated greenhouse gas emissions (Scope 1, 2 and 3) throughout the supply chain and continued disclosure of this information via the CSR report	○	

Social Issues Attributable to JSR Group's Corporate Activity	FY2017 Target	FY2017 Result	Assessment	FY2018 Target
Environmental impact reduction	• Shift to 2015 edition of ISO14001 certification	• Three JSR plants completed migration to ISO 14001:2015	○	• Operate ISO 14001:2015 efficiently and effectively
	• VOC*2 Reduction Target: Maintain 75% reduction in VOC levels over FY2000 levels	• Reduced VOC emissions by 78% from FY 2000 levels through continuance of stable operation of RTO*8 installed in the three JSR plants	○	• Reduce VOC emissions by 75% from FY 2000 levels
	• Ensure reliable and stable functionality of environmental equipment and maintain current status of zero environmental complaints	• Maintained reliable and stable functionality of environmental equipment and maintained current status of zero environmental complaints for FY 2017	○	• Continue current efforts
	• Review audit methods to bring improved environmental performance and conduct safety and environment audits	• For FY 2017, each plant selected a priority theme and the related divisions met together and shared issues and exchanged comments; tested audit methods designed to identify new issues	○	• Continue audits that bring performance improvements
Waste reduction	• Reduce industrial waste	• Reached zero waste targets for industrial waste from FY2003 through FY2017 (0 tons of waste going to landfills) through systematic initiatives at all plants including strict waste reduction and separation efforts as well as searching for suitable recyclers	○	• Continue current efforts
Water resources conservation	• Promote reduction of wastewater emission and stabilization of wastewater treatment • Promote initiatives to improve water resource management (maintain current level of water recirculation and reuse)	• Verified wastewater management, maintained stabilization of wastewater treatment and measures to improve water quality, as well as complied with the Seventh Comprehensive Water Quality and Pollutant Control standards	○	• Comply with the Eighth Comprehensive Water Quality and Pollutant Control standards
Labor environment	• Implement work reform activities	• Implemented work reform activities • JSR recognized as a 2018 Excellent Health and Productivity Management Organization (White 500) • Conducted rank appropriate training for leader class and subleader class employees • Disclosed overtime status (monthly)	○	• Advance workstyle innovation activities • Continue other efforts
Diversity	• Execute concrete measures and achieve quantitative targets for diversification of human resources	• Percentage of female employees hired in April 2018 [JSR]: College graduates hired for technical positions: 18% (target: 15-20%) College graduates hired for general office positions: 45% (target: 40-50%) • Percentage of females in management positions as of April 2018 [JSR]: 4.1% (target: 8%)	○	• Continue current efforts
	• Diversify recruitment	• Percentage of employees with disabilities [JSR]: 2.47% (statutory employment rate: 2%) • Foreign national employees recruited [JSR]: 10 (hired from FY2015 to FY2017)	○	
	• Advance corporate culture	• Continued communication-building activities at each office/workplace • Held diversity and inclusion seminars	○	
Human rights	• Improve awareness of corporate ethics and revision of JSR Group Principles of Corporate Ethics as necessary	• Implemented corporate ethics e-learning program • Conducted corporate ethics training that included the topics of sexual harassment and power harassment for new employees and new management employees • Revised JSR Group Principles of Corporate Ethics	○	• Continue current efforts
Supply chain management	• Expand CSR/sustainable procurement *9	• Produced a revised edition of the CSR Procurement Questionnaire with dramatically expanded survey questions and started the second round of the supplier survey	○	• Continue with the second round of the supplier survey
	• Maintain green procurement**10 – Promote activities focusing on collaboration among the supply chain	• Practiced green procurement based on JSR Green Procurement Guidelines • Provided data on chemical substances using MSDS Plus**11 and chemSHERPA**11	○	• Continue promoting activities focusing on collaborations in supply chains
Communication with communities and society	• Utilize the UN Global Compact (GC) network • Participate in the Consortium for Sustainable Paper Use	• Participated as an active member in the Supply Chain Subcommittee, the Corruption Prevention Subcommittee, and the Human Rights Due Diligence Subcommittee of the GC Network Japan • Participated in the Consortium for Sustainable Paper Use	○	• Continue current efforts
	• Promote social contribution activities that highlight JSR Group's sustainable orientation (continue visiting lessons and lectures, etc.) • Continue communication with local communities, including plant neighbors, with the aim of being a company that is trusted by the community	• In cooperation with educational institutions, continued education programs on preventing and coping with global warming by means of guest science lessons at elementary schools, as well as giving workplace experience tours to junior high schools and high schools • Carried out communication activities with local communities near each base	○	• Continue current efforts
	• Promote communication using green areas that help conserve biological diversity	• Yokkaichi Plant: Posted additional signboards describing the flora and fauna in green areas • Chiba Plant: Held family events using the grove in the rest area within the plant • Kashima Plant: Exterminated invasive plants and conducted wildlife monitoring • Tsukuba Research Laboratories: Conducted wildlife monitoring, maintained walkways using chipped prunings, and monitored for and exterminated invasive species	○	• Continue current efforts
	• Create and distribute marketing materials to promote the "Mirai no kigen (Origin of the Future)" TV program	• Distributed marketing materials during student recruitment and at universities hosting program filming • Appended program introduction to email messages • Placed text advertisement on Shinkansen trains	○	• Continue current efforts
Communication with shareholders and investors	• Release information through various media	• Released information about the group that is easy to understand in a timely manner including such examples as the Information for Investors section of the website, annual reports, and the "JSR Throughout Society" booklet	○	• Continue current efforts
	• Communicate bi-directionally with shareholders and investors	• Held financial results briefings (quarterly), management policy briefing (annually), and business briefings (Life Sciences business) for institutional investors and analysts • Held individual meetings and small meetings with Japanese and overseas institutional investors (participated in domestic conferences, visitation IR with Japanese and overseas institutional investors, etc.)	○	
	• Conduct shareholder meetings that encourage relationship-building	• Released meeting announcements schedules earlier and more frequently, produced meeting announcements for smartphones, and avoided conflict with other shareholder meetings as well as enriched briefings of business overviews and product introductions at venues	○	

Social Issues that JSR Group Can Help Resolve	FY2017 Target	FY2017 Result	Assessment	FY2018 Target
Health and longevity	<ul style="list-style-type: none">Contribute to the promotion of changing perspective from treatment to prevention and personalized medicine through the Life Sciences Business	<ul style="list-style-type: none">Constructed a system that supports drug discovery processes from the beginning stage to the final stage with the acquisition of Selexis and CrownEstablished a system that contributes to the advancement of personalized medicine together with MBL's diagnostic technology	○	<ul style="list-style-type: none">Contribute to the improved efficiency of drug discovery processes, in order to realize better treatments sooner
Eco-friendly products	<ul style="list-style-type: none">Continue analysis/discussion of feasibility of activities to reduce the environmental impact utilizing LCI*12 data	<ul style="list-style-type: none">Estimated the CO₂ emissions from new and alternative products starting from the development phase through the incorporation of LCA*13 (LCA processes are used during the manufacturing phase of 52 products)	○	<ul style="list-style-type: none">Include eco-friendly design in product design reviews and encourage development of eco-friendly products
	<ul style="list-style-type: none">Set new targets for eco-friendly products during FY2017	<ul style="list-style-type: none">The percentage of sales from eco-friendly products leveled off from last year. In view of the growth of Life Sciences Business and the global base expansion of the S-SBR business, continued the acquisition of business activity results without setting targets at the present time.	—	<ul style="list-style-type: none">Disseminate internally and further activate eco-friendly products

*1 SDS = Safety Data Sheet. A sheet describing the safety information on chemical substances is attached when shipped to other operators.

*2 GHS = Globally Harmonized System Classification and Labeling of Chemicals. This system is designed to globally standardize classification, labeling and provision of SDS.

*3 TSCA = The Toxic Substances Control Act of the United States. The act's purpose is to regulate chemical substances and mixtures that pose unreasonable risks to human health and the environment.

*4 REACH = Registration, Evaluation, Authorization and Restriction of Chemicals. This is a European Union regulation to provide safety test data on all chemical products that are manufactured or imported by an amount of at least 1 ton per year.

*5 BCP = Business Continuity Plan. BCP defines the planning of determination criteria and course of action plans to continue business operations in the event of emergencies or disasters and to continue or restore operations as quickly as possible after a major emergency event that could affect the existence of the company occurs such as largescale disasters, fires/explosions, terrorist attacks, etc.

BCM defines the management system implemented to improve and operate the BCP through PDCA

*6 HAZOP (Hazard and Operability Studies) safety inspection

*7 VOC = "Volatile Organic Compounds," which is a cause of air pollution

*8 RTO = Regenerative Thermal Oxidizer. A device used to burn VOCs and decompose them into CO₂ and water to create cleaner exhaust gases.

*9 CSR/sustainable procurement is a system of procuring raw materials from suppliers that have demonstrated resolve to engage in environment protection as well as incorporating the social aspect into corporate ethics and employment activities.

*10 Green procurement is a system of procuring raw materials from suppliers that meet strict guidelines on the management of substances that have the potential to cause harm to human health.

*11 MSDS Plus/chemSHERPA = A basic information sheet used to provide downstream users with information on chemical substances in products. It was created by the Joint Article Management Promotion Consortium.

*12 LCI = Life Cycle Inventory. Sum of the input and output data of resource, energy, and environmental impact of products used for LCA.

*13 LCA = Life Cycle Assessment. A method of quantitatively analyzing and assessing a product's environmental impact in all lifecycle stages, including raw materials, manufacturing, use, and disposal.

GRI Guidelines Comparison Table

JSR Group's CSR Report 2018 was prepared with reference to the "Sustainable Reporting Standards" of the Global Reporting Initiative (GRI). The GRI Standards are international guidelines for businesses to use in pursuing economic development with concern for the environment and society.

Provided below is a list of locations (titles) of items in the guidelines concerning general disclosures as well as reporting disclosures relating to economic standards, environmental standards, and social standards. Clicking on the titles will send you to the relevant location.

Please note that when an item mentions details found in a report that is other than the CSR Report, the name of that report (e.g., Securities Reports, Corporate Governance Report, etc.) is provided. Additionally, performance indicators of the GRI guidelines and information and indicators whose notation is required by environmental reporting guidelines are also provided collectively in ESG Data for your reference.

- [Click here to go to ESG Data \(PDF\).](#)

General Disclosures

Explanation of locations (titles) —: No data available N/A: No applicable items

GRI Standards General Disclosures (* = Core indicator)			Location (Title)	ISO 26000 Core Subject	UN Global Compact Principle
1. Organizational profile					
102-1	*	Name of organization	JSR Group Profile	—	—
102-2	*	Activities, brands, products, and services	JSR Group Profile	—	—
102-3	*	Location of headquarters	JSR Group Profile	—	—
102-4	*	Location of operations	JSR Group Profile	—	—
102-5	*	Ownership and legal form	JSR Group Profile	—	—
102-6	*	Markets served	JSR Group Profile	—	—
102-7	*	Scale of the organization	JSR Group Profile	—	—
102-8	*	Information on employees and other workers	Human Rights Labor Environment Diversity ESG Data: Social	6.4 6.4.3	—
102-9	*	Supply chain	Supply Chain Management	—	—
102-10	*	Significant changes to the organization and its supply chain	Supply Chain Management	—	—
102-11	*	Precautionary Principle or approach	Corporate Mission and CSR Philosophy CSR Management and Advancement Structure Corporate Governance Compliance Risk Management Responsible care	6.2	—
102-12	*	External initiatives	Corporate Mission and CSR Philosophy Responsible care Other Environmental Impact Reduction Efforts	6.2	—
102-13	*	Membership of associations	—	6.2	—
2. Strategy					

102-14	*	Statement from senior decision-maker	Top Commitment	6.2	—
102-15		Key impacts, risks, and opportunities	Top Commitment Priority Issues to be Addressed by JSR Group JSR Group's Mid-Term CSR Plan	6.2	—
3. Ethics and integrity					
102-16	*	Values, principles, standards, and norms of behavior	Corporate Mission and CSR Philosophy Compliance	—	—
102-17		Mechanisms for advice and concerns about ethics	Compliance	—	—
4. Governance					
102-18	*	Governance structure	Corporate Governance CSR Management and Advancement Structure Corporate Governance Report	6.2	—
102-19		Delegating authority	Corporate Governance CSR Management and Advancement Structure	—	—
102-20		Executive-level responsibility for economic, environmental, and social topics	Corporate Governance CSR Management and Advancement Structure	—	—
102-21		Consulting stakeholders on economic, environmental, and social topics	Corporate Governance CSR Management and Advancement Structure Communication with Stakeholders	6.2	—
102-22		Composition of the highest governance body and its committees	Corporate Governance Corporate Governance Report	6.2	—
102-23		Chair of the highest governance body	Corporate Governance Corporate Governance Report	6.2	—
102-24		Nominating and selecting the highest governance body	Corporate Governance Corporate Governance Report	6.2	—
102-25		Conflicts of interest	Corporate Governance Report	6.2	—
102-26		Role of highest governance body in setting purpose, values, and strategy	Corporate Governance CSR Management and Advancement Structure	—	—
102-27		Collective knowledge of highest governance body	Corporate Governance Corporate Governance Report	—	—
102-28		Evaluating the highest governance body's performance	Corporate Governance Report	6.2	—
102-29		Identifying and managing economic, environmental, and social impacts	Corporate Governance CSR Management and Advancement Structure Compliance Risk Management Annual Report	6.2	—
102-30		Effectiveness of risk management processes	Corporate Governance Risk Management Responsible Care Corporate Governance Report Annual Report	—	—
102-31		Review of economic, environmental, and social topics	CSR Management and Advancement Structure Corporate Governance Report	6.2	—
102-32		Highest governance body's role in sustainability reporting	CSR Management and Advancement Structure	—	—

102-33		Communicating critical concerns	CSR Management and Advancement Structure Risk Management	6.2	—
102-34		Nature and total number of critical concerns	—	—	—
102-35		Remuneration policies	Corporate Governance Report ESG Data: Policy/Guidelines/Philosophy	6.2	—
102-36		Process for determining remuneration	Corporate Governance Report ESG Data: Policy/Guidelines/Philosophy	—	—
102-37		Stakeholders' involvement in remuneration	Communication with Stakeholders Corporate Governance Corporate Governance Report	6.2	—
102-38		Annual total compensation ratio	—	—	—
102-39		Percentage increase in annual total compensation ratio	—	—	—
5. Stakeholder engagement					
102-40	*	List of stakeholder groups	Corporate Mission and CSR Philosophy	6.2	—
102-41	*	Collective bargaining agreements	Human Rights Labor Environment	6.3.10 6.4 6.4.3 6.4.4 6.4.5	1, 3
102-42	*	Identifying and selecting stakeholders	Corporate Mission and CSR Philosophy	6.2	—
102-43	*	Approach to stakeholder engagement	Communication with Stakeholders Dialogue with Stakeholders	6.2 6.7 6.7.4 6.7.5 6.7.6 6.7.8 6.7.9	1 - 10
102-44	*	Key topics and concerns raised	Priority Issues to be Addressed by JSR Group	6.2	—
6. Reporting practice					
102-45	*	Entities included in the consolidated financial statements	JSR Group Profile	6.2	—
102-46	*	Defining report content and topic Boundaries	Editorial Policy	—	—
102-47	*	List of material topics	Priority Issues to be Addressed by JSR Group	—	—
102-48	*	Restatements of information	N/A	—	—
102-49	*	Changes in reporting	—	—	—
102-50	*	Reporting period	Editorial Policy	—	—
102-51	*	Date of most recent report	September 2017	—	—
102-52	*	Reporting cycle	1 year	—	—
102-53	*	Contact point for questions regarding the report	Submit Comments concerning the CSR Report Here	—	—
102-54	*	Claims of reporting in accordance with the GRI Standards	—	—	—
102-55	*	GRI content index	This link leads to the GRI Standards content index.	—	—

102-56	*	External assurance	Independent Review Third-Party Opinion	7.5.3	—
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Economic Standards

Explanation of locations (titles) —: No data available N/A: No applicable items

GRI Standards Economic, environmental, and social standards requiring reporting		Location (Title)	ISO 26000 Core Subject	UN Global Impact Principle
GRI 103: Management Approach				
103-1, 103-2, 103-3	Explanation of the material topic and its Boundary The management approach and its components Evaluation of the management approach	Priority Issues to be Addressed by JSR Group JSR Group's Mid-Term CSR Plan Targets and Results	—	—
Economic Performance				
201-1	Direct economic value generated and distributed	—	6.8 6.8.3 6.8.7 6.8.9	—
201-2	Financial implications and other risks and opportunities due to climate change	—	6.5.5	7, 8, 9
201-3	Defined benefit plan obligations and other retirement plans	Annual Report	—	—
201-4	Financial assistance received from government	Annual Report	—	—
Market Presence				
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	—	6.4.4 6.8	—
202-2	Proportion of senior management hired from the local community	—	6.8 6.8.5 6.8.7	—
Indirect Economic Impacts				
203-1	Infrastructure investments and services supported	Communication with Stakeholders	6.3.9 6.8 6.8.3 6.8.4 6.8.5 6.8.6 6.8.7 6.8.9	8, 9
203-2	Significant indirect economic impacts	—	6.3.9 6.6.6 6.6.7 6.7.8 6.8 6.8.5 6.8.6 6.8.7 6.8.9	—
Procurement Practices				
204-1	Proportion of spending on local suppliers	—	6.6.6 6.8 6.8.5 6.8.7	—
Anti-Corruption				
205-1	Operations assessed for risks related to corruption	N/A	6.6 6.6.3	10

205-2		Communication and training about anti-corruption policies and procedures	Compliance	6.6 6.6.3	10
205-3		Confirmed incidents of corruption and actions taken	N/A	6.6 6.6.3	10
Anti-Competitive Behavior					
206-1		Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	N/A	6.6 6.6.5 6.6.7	—

Environmental Standards

Explanation of locations (titles) —: No data available N/A: No applicable items

GRI Standards Economic, environmental, and social standards requiring reporting			Location (Title)	SO 26000 Core Subject	UN Global Impact Principle
GRI103: Management Approach					
103-1, 103-2, 103-3		Explanation of the material topic and its Boundary The management approach and its components Evaluation of the management approach	Priority Issues to be Addressed by JSR Group JSR Group's Mid-Term CSR Plan Targets and Results	—	—
Materials					
301-1		Materials used by weight or volume	Waste Reduction	6.5.4	7, 8
301-2		Recycled input materials used	Waste Reduction	6.5.4	7, 8
301-3		Reclaimed products and their packaging materials	Waste Reduction	6.5.4	7, 8
Energy					
302-1		Energy consumption within the organization	Environmental Impact Reduction Climate Change Mitigation ESG Data: Environment Data	6.5.4	7, 8
302-2		Energy consumption outside of the organization	Climate Change Mitigation ESG Data: Environment Data	6.5.4	7, 8
302-3		Energy intensity	Climate Change Mitigation ESG Data: Environment Data	6.5.4	7, 8
302-4		Reduction of energy consumption	Climate Change Mitigation	6.5.4 6.5.5	7, 8
302-5		Reductions in energy requirements of products and services	—	6.5.4 6.5.5	7, 8
Water					
303-1		Water withdrawal by source	Water Resources Conservation	6.5.4	7, 8
303-2		Water sources significantly affected by withdrawal of water	—	6.5.4	7, 8
303-3		Water recycled and reused	Water Resources Conservation	6.5.4	7, 8
Biodiversity					
304-1		Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	N/A	6.5.6	7, 8
304-2		Significant impacts of activities, products, and services on biodiversity	Other Environmental Impact Reduction Efforts	6.5.6	7, 8

304-3		Habitats protected or restored	Other Environmental Impact Reduction Efforts	6.5.6	7, 8
304-4		IUCN Red List species and national conservation list species with habitats in areas affected by operations	N/A	6.5.6	7, 8
Emissions					
305-1		Direct (Scope 1) GHG emissions	Climate Change Mitigation ESG Data: Environment Data	6.5.5	7, 8
305-2		Energy indirect (Scope 2) GHG emissions	Climate Change Mitigation ESG Data: Environment Data	6.5.5	7, 8
305-3		Other indirect (Scope 3) GHG emissions	Climate Change Mitigation ESG Data: Environment Data	6.5.5	7, 8
305-4		GHG emissions intensity	Climate Change Mitigation ESG Data: Environment Data	6.5.5	7, 8
305-5		Reduction of GHG emissions	Climate Change Mitigation ESG Data: Environment Data	6.5.5	7, 8
305-6		Emissions of ozone-depleting substances (ODS)	Other Environmental Impact Reduction Efforts ESG Data: Environment Data	6.5.3 6.5.5	7, 8
305-7		Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Other Environmental Impact Reduction Efforts ESG Data: Environment Data	6.5.3	7, 8
Effluents and Waste					
306-1		Water discharge by quality and destination	Water Resources Conservation	6.5.3 6.5.4	7, 8
306-2		Waste by type and disposal method	Waste Reduction	6.5.3	7, 8
306-3		Significant spills	Responsible Care	6.5.3	7, 8
306-4		Transport of hazardous waste	Other Environmental Impact Reduction Efforts ESG Data: Environment Data	6.5.3	7, 8
306-5		Water bodies affected by water discharges and/or runoff	N/A	6.5.4	7, 8
Environmental Compliance					
307-1		Non-compliance with environmental laws and regulations	Responsible Care	4.6	7, 8
Supplier Environmental Assessment					
308-1		New suppliers that were screened using environmental criteria	—	6.3.5 6.5.4 6.6.6 7.3.1	7, 8
308-2		Negative environmental impacts in the supply chain and actions taken	—		7, 8

Social Standards

Explanation of locations (titles) —: No data available N/A: No applicable items

GRI Standards Economic, environmental, and social standards requiring reporting		Location (Title)	ISO 26000 Core Subject	UN Global Impact Principle
GRI103: Management Approach				
103-1, 103-2, 103-3	Explanation of the material topic and its Boundary The management approach and its components	Priority Issues to be Addressed by JSR Group JSR Group's Mid-Term CSR Plan Targets and Results	—	—

		Evaluation of the management approach			
Employment					
401-1		New employee hires and employee turnover	Diversity	6.4 6.4.3	—
401-2		Benefits provided to full-time employees that are not provided to temporary or part-time employees	—	6.4 6.4.3 6.4.4	—
401-3		Parental leave	Diversity	6.4 6.4.3	6
Labor/Management Relations					
402-1		Minimum notice periods regarding operational changes	—	—	—
Occupational Health and Safety					
403-1		Workers representation in formal joint management-worker health and safety committees	Human Rights Labor Environment	6.4 6.4.6	1
403-2		Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	Health and Safety Initiatives	6.4 6.4.3	—
403-3		Workers with high incidence or high risk of diseases related to their occupation	N/A	6.4 6.4.6 6.8 6.8.3 6.8.4 6.8.8	1
403-4		Health and safety topics covered in formal agreements with trade unions	Human Rights Labor Environment	6.4 6.4.6	—
Training and Education					
404-1		Average hours of training per year per employee	Labor Environment	6.4 6.4.7	—
404-2		Programs for upgrading employee skills and transition assistance programs	Labor Environment Diversity	6.4 6.4.7 6.8.5	6
404-3		Percentage of employees receiving regular performance and career development reviews	Labor Environment	6.4 6.4.7	—
Diversity and Equal Opportunity					
405-1		Diversity of governance bodies and employees	Labor Environment Diversity ESG Data: Social Data	6.3.7 6.3.10 6.4 6.4.3	1, 6
405-2		Ratio of basic salary and remuneration of women to men	—	6.3.7 6.3.10 6.4 6.4.3 6.4.4	—
Non-Discrimination					
406-1		Incidents of discrimination and corrective actions taken	Compliance	6.3 6.3.6 6.3.7 6.3.10 6.4.3	—
Freedom of Association and Collective Bargaining					

407-1		Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Compliance Supply Chain Management	6.3 6.3.3 6.3.4 6.3.5 6.3.8 6.3.10 6.4.3 6.4.5	—
Child Labor					
408-1		Operations and suppliers at significant risk for incidents of child labor	Compliance Supply Chain Management	6.3 6.3.3 6.3.4 6.3.5 6.3.7 6.3.10	—
Forced or Compulsory Labor					
409-1		Operations and suppliers at significant risk for incidents of forced or compulsory labor	Compliance Supply Chain Management	6.3 6.3.3 6.3.4 6.3.5 6.3.7 6.3.10	—
Security Practices					
410-1		Security personnel trained in human rights policies or procedures	Compliance	4.3 6.3.5 6.4.3 6.6.6	—
Rights of Indigenous Peoples					
411-1		Incidents of violations involving rights of indigenous peoples	N/A	6.3 6.3.6 6.3.7 6.3.8 6.6.7	—
Human Rights Assessment					
412-1		Operations that have been subject to human rights reviews or impact assessments	—	6.3 6.3.3 6.3.4 6.3.5	—
412-2		Employee training on human rights policies or procedures	Compliance	6.3 6.3.5	1
412-3		Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	—	6.3 6.3.3 6.3.5 6.6.6	—
Local Communities					
413-1		Operations with local community engagement, impact assessments, and development programs	Communication with Stakeholders	6.3.9 6.6.7 6.8 6.8.5 6.8.7	8
413-2		Operations with significant actual and potential negative impacts on local communities	—	6.3.9 6.5.3 6.5.6 6.8.9	7, 8
Supplier Social Assessment					
414-1		New suppliers that were screened using social criteria	Supply Chain Management	—	—
414-2		Negative social impacts in the supply chain and actions taken	Supply Chain Management	—	—
Public Policy					
415-1		Political contributions	—	—	—

Customer Health and Safety					
416-1		Assessment of the health and safety impacts of product and service categories	—	6.3.9 6.6.6 6.7 6.7.4 6.7.5	9
416-2		Incidents of non-compliance concerning the health and safety impacts of products and services	Responsible Care		—
Marketing and Labeling					
417-1		Requirements for product and service information and labeling	Responsible Care	6.7 6.7.3 6.7.4 6.7.5	—
417-2		Incidents of non-compliance concerning product and service information and labeling	Responsible Care	6.7.6 6.7.9	—
417-3		Incidents of non-compliance concerning marketing communications	N/A	6.7 6.7.3 6.7.6 6.7.9	—
Customer Privacy					
418-1		Substantiated complaints concerning breaches of customer privacy and losses of customer data	N/A	6.7 6.7.7	—
Socioeconomic Compliance					
419-1		Non-compliance with laws and regulations in the social and economic area	N/A	6.6 6.6.3 6.6.7 6.8.7	—

Evaluation by Outside Organization, Third-Party Opinion, and Independent Review

1. Evaluations by Outside Organizations
2. Third-Party Opinion
3. Independent Review

1. Evaluations by Outside Organizations

(1) Inclusion in ESG indexes and socially responsible investment (SRI) indexes and stocks (Current as of July 3, 2018)

JSR Group CSR activities have been evaluated by outside organizations. We have earned inclusion into the following ESG indexes and socially responsible investment (SRI) indexes and stocks.



We were selected as an investment brand of the "FTSE Blossom Japan Index" for being a Japanese company with excellent consideration for ESG (Environment, Social, and Governance)



We were selected by MSCI as an investment brand of the "MSCI Japan Empowering Women Index (WIN)" for being a company with excellent gender diversity.



We have been a constituent of the FTSE4Good Index Series since 2004.



We were selected as one of top 120 global companies included in the Euronext Vigeo Eiris World 120 Index.



We were reconfirmed for inclusion in the Ethibel Pioneer & Excellence Investment Registers, which is an SRI universe, on June 30, 2017.



January 4, 2018

We have been selected as a member of the Morningstar Socially Responsible Investment Index, Japan's major SRI index, since 2009.

* The Morningstar Socially Responsible Investment Index represents 150 domestic companies selected as being exceptionally socially responsible. This stock index does not guarantee future performance nor does it assume any responsibility. Morningstar Japan K.K. and Morningstar, Inc.

shall not bear any responsibility for damage that might result from use of the index. Copyright and all other rights rest with Morningstar Japan K.K. and Morningstar, Inc. Copies, reproductions, and citation without permission are prohibited.



We were selected by SNAM (Sompo Japan Nipponkoa Asset Management Co., Ltd.) as a brand for investment of the SNAM Sustainable Investment Fund in recognition of our standing as a company with a high ESG (Environment, Social, and Governance) evaluation.



"White 500" Enterprise of the Certified Health and Productivity Management Organization Recognition Program.

We were selected as a company practicing outstanding health and productivity management by the Ministry of Economy, Trade and Industry and Nippon Kenko Kaigi.

Additionally, the JSR Group has continually been ranked in the Global Compact 100 since FY 2013.

(2) Major awards received over the last five years

	Award Sponsor	Award Name	Winner
2015	Japan Chemical Industry Association	Responsible Care Award for Effort	JSR Optech Tsukuba
	Kyushu Bureau of Economy, Trade and Industry	Kyushu Bureau of Economy, Trade and Industry General Director's Award for Excellence in Plant Energy Management	JSR Micro Kyushu
2013	Chubu Bureau of Economy, Trade and Industry	Chubu Bureau of Economy, Trade and Industry General Director's Award for Excellence in Plant Energy Management	JAPAN COLORING
	Commissioner of the Fire and Disaster Management Agency	Fire Defense Award	JSR Micro Kyushu
	Commissioner of the Fire and Disaster Management Agency	Fire Defense Award	JSR Optech Tsukuba
	Japan Chemical Industry Association	Responsible Care Award	JSR Chiba Plant
2012	Japan Chemical Industry Association	Safety Award Grand Prize	JSR Yokkaichi Plant

Note: Company names current at the time the award was received

2. Third-Party Opinion



Toshihiko Goto

Chief Executive Officer

Sustainability Forum Japan (specified non-profit organization)

On the whole, I evaluate that strategies have been put in place and are being steadily advanced for nearly all items that should be addressed at the present time.

The Top Commitment column speaks of three priority areas: the environment, work styles, and safety. In the environment area, the Top Commitment column mentions the problems of GHGs and plastics, which have close ties to your company. With respect to GHGs, I regard the issue to be making a declaration of zero GHGs emission as soon as possible. Taking up the problem of plastics is admirable, and I hope JSR will lead Japanese society on this issue, in the midst of a perception gap between the world and Japan.

On work styles, the column asserts they are important "in achieving productivity" and I think that this is the key of the work style reform. Digitalization, innovation, and AI, as well as a vision of the future, are all intertwined in this.

Last year, I heard about the inauguration of a team composed of young people to forge a vision of the future, with the statement: "[JSR] wants the young generation to take the lead in setting our direction for the next twenty or thirty years." No information on the team's activities or status has been forthcoming since. Perhaps dialog with young stakeholders and the development of data scientists for digitalization are part of this. These efforts are praiseworthy, but I hope once again for clarification of a policy on formulating your vision for the future for the management of strategic risks and opportunities. Also, I discussed this last year too, but chemicals are expected to play a huge role in the development of alternative resources. The development of substitutes for natural rubber has made a massive contribution to biodiversity preservation.

In building a long-term vision of the future, it is important to think about innovation all the way to the social implementation stage, which is a break from Japan's conventional product-out design ideology. Even producers of materials like JSR should have a concept of the end social implementation in mind when developing products. By the way, Innovation is said to arise from the clash of the conventional and the unconventional. I hope the youth initiatives mentioned above will spark such innovation.

The selection of key priority issues is also relevant here. Revising the key priority issue selections from last fiscal year was valid in my view. I hope you will consider one other point: "On issues that are not highly important to JSR but are highly important to society, we will try to use our management resources to lead to some form of business solution."

While redundant, let me add about work styles that diversity management is the key to productivity.

JSR has a two-tier system with risk management. One is "the Risk Management Committee" which handles risks arising in the normal course of business. The other is "major conferences such as meetings of the Board of Directors" which handles huge, uncertain and future risks etc. This is thought to be a reasonable arrangement so far. But when looking at strategic management as described below, I suggest you reconsider this approach, as it also relates to a vision of the future described above.

In July of last year, the G20 adopted a final report on climate-related financial disclosures put forward by the Task Force on Climate-related Financial Disclosures (TCFD) of the Financial Stability Board (FSB). I look forward to strategic efforts based on scenario analyses of risks and opportunities, and particularly risks divided into transition risks and physical risks.

As I discussed last year, the policy and regulatory transition risks in the automotive industry are no longer risks; they have become reality. At the same time, we have entered an age of even more technology risks and, conversely, opportunities. In the area of strategic risk management, I feel you need to verify the optimum structural approach for your company.

At the present time, direct descriptions of measures toward the SDGs are rarely seen. I do not regard them as individual matters; rather, I think they should be thought about integrally within the context of the detailed descriptions above them.

I applaud your ESG data preparation as fitting for the times. I think, however, that you must tweak this through ongoing dialog and engagement to ensure the data is what users seek. It's no exaggeration to say each investor wants a unique set of information. Because meeting everyone's demands is impossible, it's important to present

your core information in a user-friendly format. There will be strong pressure in the coming years to release policies and strategies as ESG information, so reports must either contain qualitative information or have links to qualitative information in appropriate places.

Finally, the separation of the detailed version and the highlight version will be an eternal issue. I would add that the highlight version is very important and requires constant revision in terms of its objectives, target readers, editorial policy, content, media, and other matters.

Profile

Chief Executive Officer, Sustainability Forum Japan (specified non-profit organization)

Chairman, Sustainable Management Forum of Japan; Founder, Japan Sustainable Investment Forum (JSIF); Director, Green Finance Organization; Board Member, Global Compact Network Japan, etc.

Serves as chair or member of multiple committees, including ; Convener of the working group to develop a platform for disclosing environmental information; Member of the judging committee for the Environmental Communication Awards; and Head of the Tripartite Roundtable on Environmental Business (TREB) attached to the Tripartite Environmental Ministers Meeting among Japan, China, South Korea (TEMM).

Former Board Member of GRI. Graduate from the Faculty of Law, University of Tokyo.

In Response to the Third-Party Opinion

The JSR Group strives to solve social issues based on the view that CSR is indistinguishable from management, which fulfills our corporate mission - Materials Innovation - We create value through materials to enrich society, people and the environment. We arranged priority issues for the Group along three axes last fiscal year, and this fiscal year we described each priority issue in more detail and made it easier to grasp the current position and goal of each issue. We have also collated ESG data individually, such as giving numerical changes over time, and taken other steps so all stakeholders can more easily understand the ESG data.

We were very pleased to read your comment that strategies have been put in place and are being steadily advanced for all items that should be addressed. Regarding your recommendation to clarify a policy on establishing our vision of the future, we will endeavor to provide a specific establishment policy, such as reporting on the activities of the team of young people we assembled last year to build our vision of the future. And as for your proposal for establishing strategic risk management, we will consider with the relevant departments strategic efforts, based on scenario analyses split into transition risks and physical risks, that should be incorporated into the Group's next new mid-term plan.

CSR Department, JSR Corporation

3. Independent Review

The JSR Group has been independently reviewed by the Responsible Care Verification Center of the Japan Chemical Association regarding the content found in the online versions of the JSR Group CSR Report 2018.

- Click here for the Independent Review Report ([PDF 312KB](#)) 

Report Downloads

1. JSR Group CSR Reports
2. JSR Micro, Inc. CSR Report
3. JSR Micro N.V. CSR Report
4. RC Site Report

1 . JSR Group CSR Reports

The CSR Report 2018 is issued as a Detailed Version and a Highlight Version.

Name	Content	Website		Pamphlet
		HTML	PDF	
Detailed Version	Comprehensive report of JSR Group's CSR activities	○	○	
Highlight Version	Presentation of highlights selected from JSR Group's CSR activities		○	○

Click on the images to link to the individual reports.


2018 Edition For the period between April 1, 2017, and March 31, 2018

Detailed Version



Highlight Version (PDF 5.7MB)



The entirety of the Online Version has been converted into the PDF format **(Full PDF version)** and can be viewed [here](#).  (PDF 15.9MB)

2017 Edition For the period between April 1, 2016, and March 31, 2017

Online Version



Highlight Version (PDF 4.8MB)



2016 Edition For the period between April 1, 2015, and March 31, 2016

Online Version



Print Version (PDF 4.6MB)



2015 Edition For the period between April 1, 2014, and March 31, 2015

Online Version



Print Version (PDF 6.7MB)



2014 Edition For the period between April 1, 2013, and March 31, 2014

Online Version



Print Version (PDF 11.5MB)



2013 Edition For the period between April 1, 2012, and March 31, 2013

Online Version



Print Version (PDF 5.1MB)



2012 Edition For the period between April 1, 2011, and March 31, 2012

Online Version



Print Version (PDF 5.7MB)



2011 Edition For the period between April 1, 2010, and March 31, 2011

Online Version



Print Version (PDF 3.6MB)



2010 Edition For the period between April 1, 2009, and March 31, 2010

Online Version



Print Version (PDF 2.5MB)



2009 Edition For the period between April 1, 2008, and March 31, 2009

Online Version



Print Version (PDF 1.3MB)



2. JSR Micro, Inc. CSR Report

JSR Micro, Inc. CSR Report



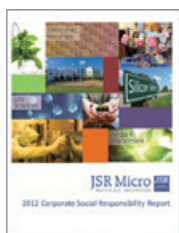
- JSR Micro, Inc. CSR Report 2018 ([PDF 2.7MB](#))



- JSR Micro, Inc. CSR Report 2016 ([PDF 5.1MB](#))



- JSR Micro, Inc. CSR Report 2014 ([PDF 4.5MB](#))



- JSR Micro, Inc. CSR Report 2012 ([PDF 8.0MB](#))

3. JSR Micro N.V. CSR Report

JSR Micro N.V. CSR Report

- JSR Micro N.V. CSR Report 2017 ([PDF 821KB](#))



- JSR Micro N.V. CSR Report 2015 ([PDF 4,416KB](#)) 

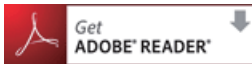


4. RC Site Report

Responsible care report of each Plant (Japanese only)

Responsible Care Reports have not been issued for the Chiba Plant and Kashima Plant since FY2015.

- [Yokkaichi Plant Responsible Care Report](#)
- [Chiba Plant Responsible Care Report](#)
- [Kashima Plant Responsible Care Report](#)



Download Adobe Reader to view PDF files.

About JSR Group

JSR Group Profile

FY : Fiscal Year means the year starting April 1st.

For example, FY2017 means April 1, 2017 - March 31, 2018

1. JSR Profile (as of March 31, 2018)

Company name	JSR Corporation
Established	December 10, 1957
Head office	Shiodome Sumitomo Building, 1-9-2 Higashi-Shimbashi, Minato-ku, Tokyo, Japan
President	Mitsunobu Koshiba
Capital	23.4 billion yen
Number of employees	7,203 (consolidated)

2. JSR Group's Major Business (as of March 31, 2018)

The manufacture and sale of the following products

Type of business			Main products
Petrochemical Business	Elastomers	Synthetic rubbers	Styrene-butadiene rubber, butadiene rubber, ethylene-propylene rubber and other synthetic rubbers and refined processed products
		Thermoplastic elastomers	Thermoplastic elastomers and related processed products
		Emulsions	Latex for paper processing, general industrial-use latex, acrylic emulsion, refined processed products made from raw latex, and other products
		Functional chemicals	High-performance coating materials, high-function dispersant, industrial particles, latent heat storage materials, heat reflection paint material, battery material, and other products
		Other	Chemical products such as butadiene monomers
	Plastics		Synthetic resins such as ABS resin, AES resin, AS resin, and ASA resin
Diversified Businesses	Fine Chemicals Business	Semiconductor Materials	Lithography materials (photo resist and multi-layering materials), CMP materials, packaging materials, etc.
		Display	Color LCD materials, anti-reflection film materials, functional coating,

		Materials	and other products
		Edge Computing	Heat-resistant transparent resin, functional films, high-performance UV curable resins, stereolithography, photo molding, and other products
	Life Sciences Business and other materials		Life sciences (in vitro reagents for diagnostics and/or research, raw materials for such reagents, bioprocess materials, contract development and manufacturing of biopharmaceuticals) and Lithium ion capacitors

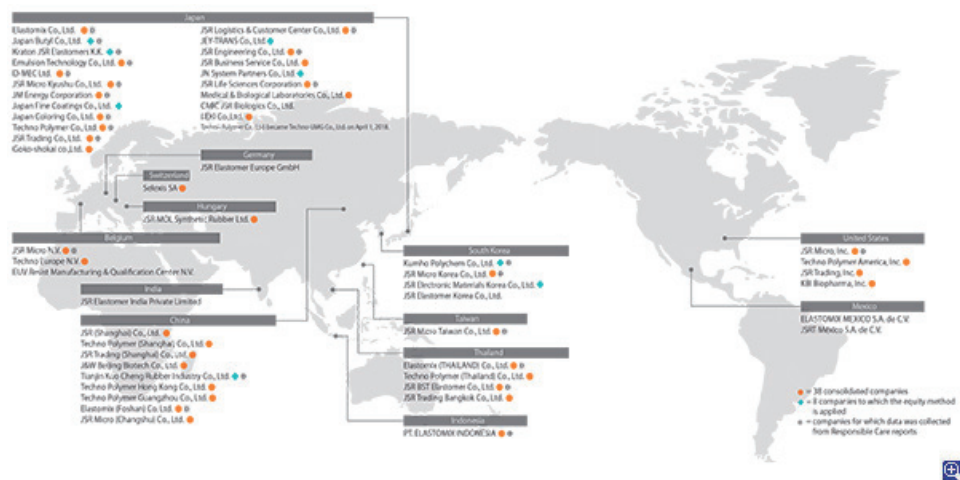
3. JSR Corporation's Business Establishments (as of March 31, 2018)

Head office			1-9-2 Higashi-Shimbashi, Minato-ku, Tokyo, Japan
Branches	Nagoya Branch		Nagoya City, Aichi Prefecture
Plants	Yokkaichi Plant		Yokkaichi City, Mie Prefecture
	Chiba Plant		Ichihara City, Chiba Prefecture
	Kashima Plant		Kamisu City, Ibaraki Prefecture
Research centers and laboratories	Yokkaichi Research Center	Performance Polymer Research Laboratories	Yokkaichi City, Mie Prefecture
		Display Solution Research Laboratories	Yokkaichi City, Mie Prefecture
		Fine Electronic Materials Research Laboratories	Yokkaichi City, Mie Prefecture
		Advanced Materials Research Laboratories	Yokkaichi City, Mie Prefecture
		Edge Computing Research Laboratories	Yokkaichi City, Mie Prefecture
	Tsukuba Research Laboratories		Tsukuba City, Ibaraki Prefecture
	JSR-Keio University Medical and Chemical Innovation Center		Shinjuku Ward, Tokyo
Overseas branch	Taiwan Branch		Taiwan

Notes

1. The JSR-Keio University Medical and Chemical Innovation Center opened on October 28, 2017.
2. The Singapore Branch closed on June 12, 2017.

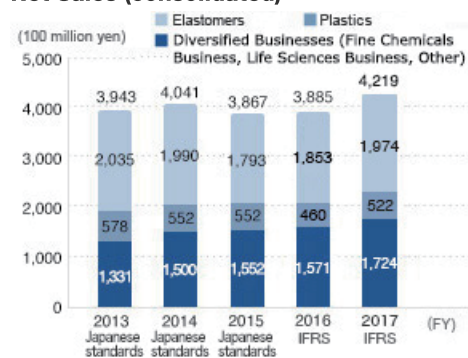
4. JSR Group Companies (as of March 31, 2018)



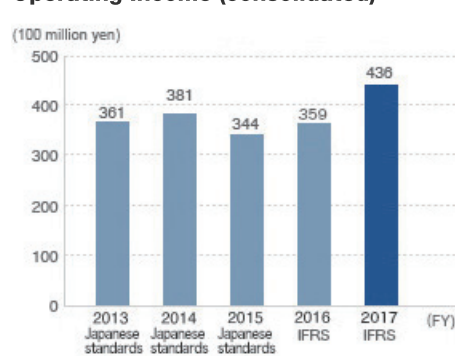
JSR Group Companies (PDF 87KB)

5. Financial Information

Net Sales (consolidated)



Operating Income (consolidated)



Home > CSR > Submit Comments concerning the CSR Report Here

Submit Comments concerning the CSR Report Here

Please enter your name (first and last), company name, department or office name, telephone number, postal code, and address and send this information to the e-mail address provided below.

e-Mail: JSR_CSR@jsr.co.jp

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