

# CSR

## Materials Innovation

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

Basic Issues  
in JSR Group's  
Corporate Activity

Social Issues  
Attributable to  
JSR Group's  
Corporate Activity

Social Issues that  
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Help Resolve

**Message from the Representative Director,  
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## Message from the Representative Director, President and COO

### Creating New Value by Anticipating Social Change



### Launching a New Management Organization to Reflect a New Age

JSR Corporation launched a new management organization at the General Meeting of Shareholders held in June 2019. Former President Koshiba became Representative Director and Chairman and Mr. Eric Johnson was named Representative Director and CEO. With his appointment, Mr. Johnson becomes the first non-Japanese to lead our company. I assumed the position of Representative Director, President, and COO. As the chief executive charged with thoroughly realizing and executing JSR Group's management policy, I will push the new organization forward in tandem with the new CEO.

To take JSR Group even farther in the new era called "Reiwa," I will set policy by listening to as many people concerned as possible and incorporating various views. I will also apply a personal trait of mine, which is to decide and act quickly and decisively, in order to provide management that has a sense of speed.

### Responding to Social Change; Responding to Society's Expectations and Demands

JSR Group supports the Ten Principles of the UN Global Compact and aims to do its part in achieving the SDGs.\* This posture is based on our belief that "social and corporate sustainability" are important. We have particular interest in the SDGs, which advocate "global reform" as their fundamental principal. Furthermore, if viewed from another perspective, the SDGs—which envision an "ideal world" in 2030 and establish targets for realizing it—are also a collection of business needs that will lead to the resolution of global social issues in the future.

I personally believe society will undergo a major transformation from around the mid-2020s. In the chemicals industry, “digitalization” will spark dramatic changes in the way we do business. Among those changes, I will be paying particular attention to phenomena called “individualization” and “regionalization.” I predict the arrival of a world in which the importance of needs rooted in individuals and regions will grow exponentially. We are already seeing this in the life sciences field, where responses to individualization are becoming essential in medical care settings. This trend will likely expand to all fields as “digitalization” evolves. As for the other change, regionalization, I predict that unique demand will erupt within limited regions. This phenomenon will take place on the opposite side of the spectrum from “globalization.” I think the time will come when demand corresponding with the special characteristics of specific regions will be born; those technologies and products that do not meet that demand will become irrelevant. Digitalization’s advancement will accelerate the optimization of regional supply and demand without regard for time or place. No longer will things be invented in developed countries and then brought into developing countries. Instead, various types of innovation will be born from unique regional needs.

Based on my prediction of change founded on individualization and regionalization, I intend to give particular attention to business fields that address them. Moreover, some of the SDGs are in line with “individualization” and “regionalization,” and therefore I want to be constantly aware of our contribution to the SDGs from this perspective.

\* 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.

## **A Mindset Capable of Responding to Change and Open Innovation**

In this age of change, things will happen quickly. Thus, rather than studying risk for a long period of time and then promoting business on a large scale, we will need to move ahead with smaller starts and then later ascertain direction through repeated reviews.

We are a chemicals company that proudly upholds its Corporate Mission of “Materials Innovation.” Therefore, if we can anticipate future changes and the needs that will arise from them, the door opens for us to expand our business to peripheral fields, including services. That said, “materials” will remain firmly established at the very foundation of our business. Conceptualizing “materials × something more,” we will accelerate our business by starting small with open innovation-based material development, and by conducting repeated reviews while expanding and diversifying how we look at possibilities for new business, including in service fields.

I believe the “mindset” of employees will become even more important in responding to social change. The development of human resources that are strong in the face of change will be the most important item in our new management organization. We will be looking for people who possess “wisdom and flexibility.” “Wisdom” does not materialize without a flexible way of thinking. While knowledge is simply learned, “wisdom” is the ability to create new things by using knowledge. We will develop practical training programs for producing “one” from “zero,” not classroom learning whose purpose is simply to instill knowledge.

I expect all employees to maintain an attitude of never being satisfied with traditional ways of doing things. I want them to not turn away from coming social changes, but rather to translate them into opportunity. “Do not fear crisis; turn it into a resource.” I am convinced that having many employees with this strong mindset will allow JSR Group to achieve sustainable growth into the future.

At the same time, in this age of modern business, we can no longer overcome challenges with own knowledge and technology alone. We will have difficulty keeping up with social changes if we do not achieve greater speed, even if it means accepting knowledge and technology from outside.

I always cherish the phrase “I know that I know nothing.” People tend to think that they “can do anything when they have knowledge.” So they fear changes for which they have no knowledge. But if you realize that “there are things I do not know,” this lack of knowledge allows you to eliminate the “fear of not knowing” by gathering information, making predictions, and accepting other people’s views and knowledge. I think this leads to revolutionary innovation.

This is why, during the past few years, JSR Group has been opening three new research centers charged with promoting open innovation. One of them is the JSR-Keio University Medical and Chemical Innovation Center (commonly known as JKIC), which opened in 2017. It is a facility that develops innovative materials and products that support medical care through industry-academia collaboration. Additionally, the Center of Materials Innovation on the grounds of the Yokkaichi Plant and a new life science and business incubation laboratory in Tonomachi, Kawasaki City, are actively engaged in open innovation.



## Steadily Progressing Reform in JSR Group

Various reforms are also taking place within JSR Group. I would like to mention four of them as keywords deserving attention in the CSR field. They are “industrial safety,” “environment,” “global governance,” and “diversity.”

“Industrial safety” is simultaneously extremely important and extremely difficult. In light of this, we are now making improvements to various safety activities using digitalization. They include conducting onsite inspections with drones and providing hands-on education based on virtual reality. The performance of ICT and AI is getting better every day, so I want to apply these technologies to take our safety activities even further. On the other hand, we must squarely face the fact that the number of accidents in our facilities is not decreasing. One thing that particularly bothers me about this is a worsening balance in the distribution of employees’ age groups as baby-boomers retire. The center of the distribution spectrum is being lost. As a result, our workforce is comprised of comparatively young employees with less safety education and on-the-job experience on the one hand, and older workers who, despite being expected to have more experience, lack understanding of their declining physical condition and end up having accidents as a result on the other. About four or five years ago, I began feeling that education that takes elderly employees into account should be added to education that is based on differences in rank and experience. I intend to address advancing ICT and further changes in the age structure by reevaluating these issues in a manner that also considers educational methods.

Looking at “environment,” for chemicals companies in particular, which must make significant contributions to society, this ranks among the most important responsibilities. We must naturally reduce the environmental impact of our business activities, and I believe our contribution through the products we supply to society is quite significant. For example, our synthetic rubber “SSBR” (solution polymerization styrene-butadiene rubber) for fuel-efficient tires is effective in simultaneously reducing fossil fuels consumption and carbon dioxide emissions worldwide. In addition, the backlighting of LCD televisions consumes a considerable amount of electric power, but less power is required if the panel itself becomes brighter with good transparency. The effects of this can be traced back to lower carbon dioxide generated from fossil fuels. I believe that if, from the design stage, developers incorporate improvements into all products with attention to not only better performance but also impact on the



environment, major benefits can be achieved even when the effects of each individual improvement are small. I think the accumulation of such consideration is important.

Sixty percent of JSR Group's revenue comes from overseas, and one-third of its employees are not Japanese. We must shift the axis of our business to overseas markets, and therefore I see "global governance" as a priority issue for JSR. Particularly in the case of overseas business, we must firmly maintain governance while keeping harmony between the different cultures and business customs of other countries and the company's sustainability. Under the new organization, we will quickly uncover unique regional needs and reinforce our global-level governance under the leadership of a new CEO who is keenly familiar with circumstances both in Japan and abroad.

Moreover, I will accelerate initiatives concerning the "diversity" of our human resources. To secure personnel who can succeed on the global stage, I will promote the development of workplace environments within which employees of different nationalities, religions, and lifestyles can work together while demonstrating their own unique characteristics. At the same time, I will work on measures to expand opportunities for female employees and promote diversity management with the aim of making the company one in which women can succeed as leaders in any department.

JSR will continue responding nimbly to our ever-transforming society without fear of change, while striving to resolve the numerous challenges of the world through business.

Nobuo Kawahashi  
Representative Director, President, and COO  
JSR Corporation

A handwritten signature in black ink, appearing to read 'Na' followed by a stylized flourish.

## JSR Group's CSR Corporate Mission and CSR Philosophy

- ↓ [1. Corporate Mission and CSR Philosophy](#)
- ↓ [2. Corporate Mission](#)
- ↓ [3. Management Policies - JSR's Fundamental Pillars of Management](#)
- ↓ [4. Management Policies - Responsibility to Our Stakeholders](#)
- ↓ [5. 4C Course of Action](#)

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.

#### JSR Group's CSR

**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

**Corporate Mission**

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

**Management Policies:**  
Fundamental Pillars of Management

- Continuous Creation of Businesses
- Enhancement of Corporate Culture
- Increase in Corporate Value

**Management Policies:**  
Responsibility to Our Stakeholders

- Responsibility to Our Customers/Business Partners
- Responsibility to Our Employees
- Responsibility to Society
- Responsibility to Shareholders

**Course of Action: The 4Cs**  
CHALLENGE  
COMMUNICATION  
COLLABORATION  
CULTIVATION

**Issues facing society that need to be addressed**

**WE SUPPORT**  
UN GLOBAL COMPACT

**Business Plan JSR 2019**

- Business Development for Higher Profitability
- Reinforcement of Global Competitiveness
- Nurturing of Next-Generation Businesses

**Innovation**  
Social Issues that JSR Group Can Help Resolve

- Eco-Friendly Products
- Health and Longevity
- Better Access to Healthcare and Medical Care
- Quality of Life and Happiness

**Sustainability**  
Social Issues Attributable to JSR Group's Corporate Activity

- 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 Stakeholders

Development of a Sustainable Global Environment and Society

➤ [JSR Group's Corporate Mission and Priority Issues.\(PDF 464KB\)](#)

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.




Eric Johnson  
Representative Director and CEO  
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.

> [United Nations Information Centre "What are the Sustainable Development Goals \(SDGs\)?"](#) 

## 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.



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#### 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.

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#### 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.

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## 4. Management Policies - Responsibility to Our Stakeholders

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#### 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
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#### 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

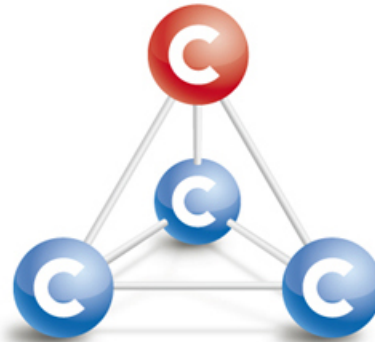
All employees should feel comfortable and confident maintaining open lines of bi-directional communication at all levels within JSR Group. Employees should strive for organizational transparency through direct conversations as the best means to share value and achieve common goals, especially in the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



**CHALLENGE**  
COMMUNICATION  
COLLABORATION  
CULTIVATION

## JSR Group's CSR CSR Management and Advancement Structure

- ↓ [1. CSR Committee](#)
- ↓ [2. The Corporate Ethics Committee](#)
- ↓ [3. The Responsible Care \(RC\) Committee](#)
- ↓ [4. The Risk Management Committee](#)
- ↓ [5. The Social Contribution Committee](#)

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.

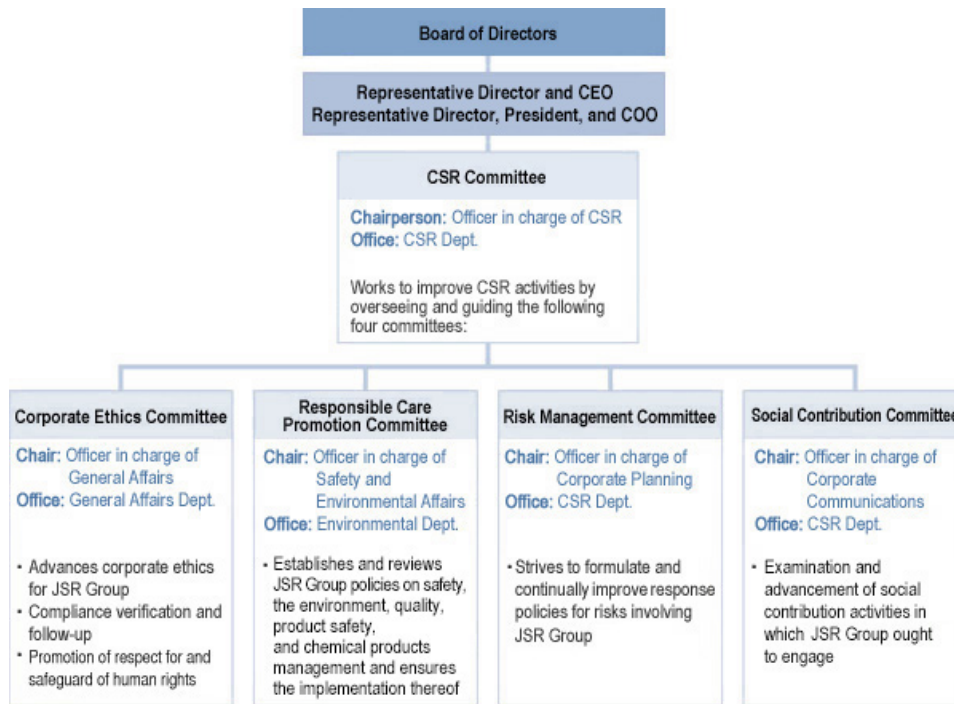
### 1. CSR Committee

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.

> [Third-party certification.\(PDF 977KB\)](#) 



## 2. 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.](#)

## 3. 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.](#)



## 4. 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.](#)

## 5. 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.](#)

## 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
<ul style="list-style-type: none"> <li>&gt; <a href="#">Eco-Friendly Products</a></li> <li>&gt; <a href="#">Health and Longevity</a></li> <li>&gt; <a href="#">Better Access to Healthcare and Medical Care</a></li> <li>&gt; <a href="#">Quality of Life and Happiness</a></li> </ul>	<ul style="list-style-type: none"> <li>&gt; <a href="#">Health and Safety Initiatives</a></li> <li>&gt; <a href="#">Environmental Impact Reduction</a></li> <li>&gt; <a href="#">Climate Change Mitigation</a></li> <li>&gt; <a href="#">Water Resources Conservation</a></li> <li>&gt; <a href="#">Waste Reduction</a></li> <li>&gt; <a href="#">Human Rights</a></li> <li>&gt; <a href="#">Labor Environment</a></li> <li>&gt; <a href="#">Diversity</a></li> <li>&gt; <a href="#">Supply Chain Management</a></li> </ul> <p>Communication with Shareholders</p> <ul style="list-style-type: none"> <li>( &gt; <a href="#">Customers and business partners</a>,</li> <li>&gt; <a href="#">employees</a>, &gt; <a href="#">the community and society</a>,</li> <li>&gt; <a href="#">shareholders and investors</a>)</li> </ul>
<b>Basic Issues in JSR Group's Corporate Activity</b>	
<ul style="list-style-type: none"> <li>&gt; <a href="#">Corporate Governance</a></li> <li style="padding-left: 20px;">&gt; <a href="#">Compliance</a></li> <li>&gt; <a href="#">Risk Management</a></li> <li>&gt; <a href="#">Responsible Care</a></li> </ul>	

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.

During our review of item 2) above in FY2019, we held a dialogue with knowledgeable persons on the theme of "JSR Group's Materiality and the SDGs." Through it, we received some valuable insights concerning JSR Group's next mid-term business plan and steps that can be taken in reorienting our long-term strategy. We will consider these insights when reviewing JSR Group's materiality and disclose the results in our next CSR Report in 2020.

■ **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

2019: JSR Group's Materiality and the SDGs

## 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"> <li>Expansion of opportunities to provide information to stakeholders</li> </ul>	
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"> <li>Compliance with the laws and regulations of all countries</li> <li>Precise response to legal revisions</li> <li>Reinforcement of monitoring</li> <li>Continued instruction on corporate ethics</li> </ul>	<ul style="list-style-type: none"> <li>Reinforcement of legal compliance in major countries</li> <li>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</li> </ul>	
Risk Management	Responses for reducing risk and preparations for emergencies are ready throughout the entire Group.	<ul style="list-style-type: none"> <li>Risk is understood and shared throughout the entire Group and appropriate measures are established</li> <li>Reinforcement of information security</li> </ul>	<ul style="list-style-type: none"> <li>Identification of risks corresponding to changes and application of PDCA to them</li> <li>Formulation of business continuity plans for domestic Group companies</li> <li>Reduction in the number of information risk cases</li> </ul>	
Responsible Care	Achievement of all goals in RC activities, including those pertaining to environmental impact reduction, climate change mitigation, water resources conservation, waste reduction, health and safety initiatives, and communication with stakeholders	Initiatives set forth in such areas as environmental impact reduction, climate change mitigation, water resources conservation, waste reduction, health and safety initiatives, and communication with stakeholders	Goals set forth in such areas as environmental impact reduction, climate change mitigation, water resources conservation, waste reduction, health and safety initiatives, and communication with stakeholders	

### Social Issues Attributable to JSR Group's Corporate Activity

Social Issues Attributable to JSR Group's	Long-term goals (to 2030)	Initiatives under JSR20i9	Goals under JSR20i9	Related SDGs








Corporate Activity				
Health and Safety Initiatives	JSR's safety culture is developed, the value of "safety first" reaches all employees, and safe and secure workplaces are maintained.	<ul style="list-style-type: none"> <li>● Safety foundation Reinforcement of the safety foundation for eliminating workplace accidents and process accidents</li> <li>● Safety culture Penetration of safety values and maintenance of personnel</li> </ul>	<ul style="list-style-type: none"> <li>● Shift from "reactive"* approach in which action is taken only after something happens</li> <li>● Laying of groundwork for a shift from "dependent"* approach (focusing on own tasks only and leaving the rest to others) to "independent"* approach (each person takes the lead in safety activity)</li> </ul> <p>* Safety culture evaluation indicator based on DuPont's "Integrated Approach for Safety"</p>	
Environmental Impact Reduction	<ul style="list-style-type: none"> <li>● Reduced impact on the air environment</li> <li>● Steady reduction of chemical substance emissions (VOC, PRTR, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>● Continuation of management using per-unit-of-sales index</li> <li>● Reduction of chemical substance emissions (VOC, PRTR, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>● SOx, NOx, and dust emissions: Continued management using per-unit-of-sales index (not to worsen compared to the present state)</li> <li>● 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)</li> </ul>	
Climate Change Mitigation	Continued contribution toward achieving the Paris Agreement's goals and development of a low-carbon society (CO <sub>2</sub> emissions: Achieve reductions with attention to government goals)	Promotion of lower CO <sub>2</sub> emissions and energy savings in response to the Paris Agreement	<ul style="list-style-type: none"> <li>● Promotion of efforts for reductions with attention to government goals</li> <li>● 1% annual reduction in specific energy consumption in line with the Energy Savings Act</li> </ul>	
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"> <li>● Higher recycling rate and contribution to biodiversity preservation with better water quality preservation technology and facilities</li> <li>● Higher water use efficiency</li> </ul>	<ul style="list-style-type: none"> <li>● 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)</li> <li>● Intake water: Maintenance of current amount of recycled water</li> </ul>	
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"> <li>● Amount of waste for final disposal: Continued landfill percentage of all generated waste of no more than 0.05%</li> <li>● 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.)</li> </ul>	
Human Rights	<ul style="list-style-type: none"> <li>● Human rights-related issues that must be addressed in the Group and globally are identified and being addressed.</li> <li>● Human rights issues in major suppliers are understood.</li> </ul>	Promotion of and response to human rights due diligence	<ul style="list-style-type: none"> <li>● Introduction of systematic implementation of human rights training (implemented for three years for all executives and employees)</li> <li>● Implementation of surveys based on an "expanded version of CSR/sustainable procurement" for major suppliers and 100% application of feedback</li> </ul>	
Labor	Highly motivated	● Promotion of employee	● Continuous improvement of a	

Environment	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.	health and building of motivation <ul style="list-style-type: none"> <li>● Promotion of work-life balance</li> <li>● Further enhancement of HR development</li> </ul>	corporate culture based on the results of employee awareness surveys <ul style="list-style-type: none"> <li>● Promotion of health measures using data analysis</li> <li>● Establishment of PDCA and KPI for health management</li> <li>● Promotion of initiatives for reducing overtime work</li> <li>● Further adjustment of attendance management</li> <li>● Implementation of measures to promote the taking of paid annual holidays</li> <li>● Promotion of work styles that pay attention to productivity (free address, etc.)</li> <li>● Study toward introduction of a telecommuting system</li> <li>● Enhancement of in-house education and expansion of off-the-job training that fit with the career ambitions of individual employees</li> </ul>	
Diversity	Diverse values are created in line with JSR's status as a global company and are accepted	<ul style="list-style-type: none"> <li>● Promotion of employment and appointment of women and people with diverse nationalities, and development of a culture that accepts and applies different values</li> </ul>	<ul style="list-style-type: none"> <li>● Promotion of understanding of the significance of diversity and how it applies to everyone</li> <li>● Promotion of activities to spread the concepts of diversity and inclusion throughout the company</li> <li>● Promotion of increases in the number of female candidates for management positions and utilization of foreign employees</li> <li>● Preparation of daily life guidelines for foreign employees and provision of support for them</li> </ul>	 
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"> <li>● Implementation of surveys based on an "expanded version of CSR/sustainable procurement" for major suppliers and 100% application of feedback</li> </ul>	 
Communication with Stakeholders	<ul style="list-style-type: none"> <li>● JSR is a manufacturer that is trusted by communities</li> <li>● Financial information and non-financial information are appropriately disclosed and communication with shareholders and investors is maintained.</li> </ul>	<ul style="list-style-type: none"> <li>● Promotion of social contribution activities that highlight JSR's sustainable orientation (visiting lessons, etc.)</li> <li>● Promotion of communication with the communities</li> <li>● Appropriate disclosure of financial information and stronger disclosure of non-financial information</li> </ul>	<ul style="list-style-type: none"> <li>● Continued implementation of visiting science lessons and lectures, etc.</li> <li>● Support for discussions and active communication with plant neighbors</li> <li>● Timely and appropriate information disclosure with website renewals</li> </ul>	

### Social Issues that JSR Group Can Help Resolve

Social Issues	Long-term goals	Initiatives	Goals	Related SDGs
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that JSR Group Can Help Resolve	(to 2030)	under JSR2019	under JSR2019	
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"> <li>Expansion of sales of eco-friendly products in accordance with the new definition</li> <li>Start of operation of an in-house authentication system that uses the JSR Sustainability Index</li> </ul>	<ul style="list-style-type: none"> <li>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.)</li> </ul>	<div> <p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p>  </div> <div> <p><b>13</b> CLIMATE ACTION</p>  </div> <div> <p><b>17</b> PARTNERSHIPS FOR THE GOALS</p>  </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.	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Achievement of the goals of the mid-term business plan</li> <li>Realization of technical development that contributes to advanced diagnosis and personalized care</li> </ul>	<div> <p><b>3</b> GOOD HEALTH AND WELL-BEING</p>  </div>
Contribution to Quality of Life and Happiness	Contribution to the realization of a digital society that leads to the resolution of the SDGs and other social issues and achievement of higher corporate value by providing advanced materials and solutions to customers	<ul style="list-style-type: none"> <li>Expansion of advanced materials business that supports society's digital revolution</li> </ul>	<ul style="list-style-type: none"> <li>Achievement of the goals of the mid-term business plan</li> </ul>	<div> <p><b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>  </div>

Dialogue with Stakeholders

JSR Group's Materiality and the SDGs - 1



In FY2015, we took the step of identifying our Materiality (Priority Issues) for the entire JSR Group. We reexamine this Materiality each time we prepare a new mid-term business plan in order to advance management founded on integrated business and CSR.

International moves toward realizing a sustainable society are accelerating. This is evidenced, for example, by the adoption of Sustainable Development Goals (SDGs) by the United Nations. With this in mind, we welcomed experts on ESG investment, the SDGs, and other international social trends to participate in a dialogue on the theme of “JSR Group’s Materiality and the SDGs.” This dialogue was oriented toward a reevaluation of our materiality that is scheduled to take place during formulation of our next mid-term business plan, whose commencement will be in FY2020.

We began by having two experts give their views on the identification and validity of JSR Group’s current materiality before moving on to the main discussion.

## Participants

### The outside experts



Keisuke Takegahara



Kaori Kuroda



Executive Officer of the Development Bank of Japan  
Member of METI's Study Group on Long-term  
Investment toward Sustainable Growth

Executive Director of CSO Network Japan  
Member of the Cabinet Office's SDGs Promotion  
Roundtable Meeting

## JSR



**Nobuo Kawahashi**  
Director and Executive  
Managing Officer\*  
Research & Development,  
Human Resources, Diversity  
Development



**Eric Johnson**  
Managing Officer\*  
Life Sciences, North America  
Business



**Takao Shimizu**  
Senior Officer  
Office of the President, IT  
Strategy, Business Process  
Renovation



**Yasufumi Fujii**  
Officer  
General Affairs, Secretarial  
Office, CSR

\*The titles provided above are as of the date the dialogue took place.

Eric Johnson became Representative Director and Chief Executive Officer (CEO) and Nobuo Kawahashi became Representative Director, President and Chief Operating Officer (COO) in June 2019.

## Facilitator

### Hidenori Imazu

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



May 13, 2019, at JSR Corporation Headquarters

▶ [Dialogue - 2 Informing Society of JSR Group's Strengths](#)

## Dialogue with Stakeholders

## JSR Group's Materiality and the SDGs - 2

## Informing Society of JSR Group's Strengths

## Reflecting Business Dynamism on Materiality

**Takegahara:** Thank you for allowing me to participate in this dialogue. The first point I'd like to address from the standpoint of an investor is the fact that JSR Group is reevaluating its materiality in conjunction with its mid-term business plan. The very fact that JSR's materiality will be reevaluated each time a new mid-term business plan is established in itself communicates the message that JSR sees financial value and non-financial value as being equal. I think this is a manifestation of what is known as "integrated thinking"\* and proof that business management and CSR activities are being pursued in an integrated manner.



\* Integrated thinking: A way of thinking that sees corporate activity in its entirety by integrating financial and non-financial information

**Kuroda:** I understand that you review your materiality simultaneously with your mid-term business plan every three or so years. The world has changed drastically between three years ago and now. I think it's good that JSR's materiality will continue to be reevaluated every three years based on anticipated great changes in the world and society.

**Takegahara:** The word "materiality" is taking on a slightly different perspective when viewed in terms of ESG investment. In the past, a matrix was prepared based on two axes—namely, "importance from the standpoint of multiple stakeholders" and "importance for the company." Those points lying within the "high importance" area for both in the upper right of the matrix were considered "materiality." But what investors want to know is very simple. First of all, and this is very important, they want to know if the company is a strong company—one with high earning power—that is worth investing in. Then they want to know if the company can maintain its strength into the medium and long term; in other words, they want to know its corporate value.

**Kuroda:** I agree. For example, in most cases, there's a gap in terms of achievement between goals ultimately established to resolve important issues and currently-available technologies and business models. How will that gap be rectified? This is a matter of concern not only for investors but also society at large.

**Takegahara:** Whether or not JSR Group can maintain its current strengths for the long term is of course important. As its point of view, if we look at the current material items arranged into the three categories of "business opportunity," "business risk," and "business foundation" from this standpoint, I think these items have been well identified, without much excess or omission. On the other hand, if we look at information disclosure, all companies in Japan's chemical industry grapple with the same issues, and thus their orientations and strategies in such non-financial areas as materiality and ESG are very similar. So, if you ask me whether JSR Group's

strengths are being differentiated from those of its competitors through this form of disclosure, I would say probably not as well as they could be.

**Kuroda:** Many companies view materiality from two aspects—namely, “active” and “passive” materiality. But it may be that this conventional way of identifying materiality is gradually falling out of step with reality. For example, in the life sciences, there are “active” aspects, such as extending healthy life expectancy. But, at the same time, human rights issues may emerge. As this shows, there are always both positive and negative sides in all things. So my sense is that it is no longer possible to speak of individual items in terms of “this is active” and “this is passive.”



**Takegahara:** One of JSR Group’s strengths is that its three mainstay businesses are each firmly responding to social issues. Given the dynamic nature of the Group’s businesses, characterized by, for example, the M&As taking place in life sciences and innovation in such forms as “materials x digitalization,” rather than presenting materiality in terms of “active” and “passive” aspects, it might be better to tie its characteristics to materiality for presentation to the public. This approach should be able to convey your “story” of developing new business models that look two or three decades into the future and achieving even greater growth through them.

**Kuroda:** Then it is important to apply the SDGs, which are global issues, and prioritizing items from the 169 targets of the 17 goals that can take advantage of JSR Group’s strengths. There is no need to insist on continuity and classification with the previous materiality. Bring an SDG that you want to put particular focus on to the forefront and then take an “outside-in” approach.\* From there it is important to prepare a road map or “story” that leads to its resolution.

\* Outside-in approach: A way of setting organizational goals that is based on social issues.



## Getting Society to Recognize the Value that Technology Produces

**Kawahashi:** You said something that is very insightful when you mentioned tying future business reform and materiality. For example, take “Climate Action,” which is SDG number thirteen. If our business grows well and our production increases, our CO<sub>2</sub> emissions will also naturally increase. However, thinking of decreasing production and plant lines in order to prevent global warming is nonsense when seen from a corporate perspective. Instead, I think JSR should be a company that makes a contribution through environment-friendly products like SSBR, which improves cars’ fuel efficiency, and technical innovations that reduce carbon dioxide in terms of production units.



And then there is the third SDG, which is “Good Health and Well-Being.” I am proud that we are making a significant contribution in the sense of raising society’s quality of life (QOL) by developing equipment that supports medical care. As Mr. Takegahara pointed out, we are also contributing to the resolution of social issues as we dynamically transform our business. I want to do more to highlight the fact that such business and our materiality are solidly linked.

**Johnson:** Our Life Sciences Business confirms strongly to the SDGs. JSR Group’s business is, quite naturally, strongly tied to better human health and living—in other words, QOL. It is our mission to improve people’s lives and health. And in this sense, the Life Sciences Business fits perfectly with this mission and therefore has high priority. The problem is, we must also firmly link our excellent technologies to revenue. It is, after all, quite difficult for a business to continue if it does not have economic sustainability. In the end, I think it will become important for our technology’s value to be recognized by society.

**Takegahara:** In the investment world, there are such phrases as “impact-based finance” and “impact-based thinking.” Looking forward, the word “impact” will become key. When a business contributes to the resolution of social issues by growing, “impact” serves as the means of measuring that contribution quantitatively.

The chemicals industry tends to be seen as an energy-intensive industry, so no matter how many excellent environment-friendly products you produce or how much social value you have, in the end the things that are measured are consumed energy and water. But if it is possible to measure positive impacts on society, I think this will help earn society’s recognition of your value and, further, help differentiate you from your competitors.

**Johnson:** I think that’s right. But on the other hand, what concerns me most is environmental burden that is attributable to business. Recently the impact of microplastic on marine life has become a matter of global concern. Of course, at JSR, we are striving to improve the environmental performance of our products and to make highly durable products. But the question remains whether such efforts are enough, and whether they alone are the correct approach.



**Takegahara:** Of course, if there are positive impacts, there are also negative impacts. However, risk and opportunity are two sides of the same coin. So I think it is important to present your message as “JSR Group: A company that creates social value while controlling negative environmental impacts.”

**Kawahashi:** Looking at the problem of microplastics, we see that biodegradable bioplastics are attracting attention as a possible solution. But my sense is that developing bioplastics that JSR does not currently have in order to provide a solution is not a choice we should make if we consider the economic risk to the company.

If we reexamine the value of an existing product or ongoing research, we often find things that are rather useful. For example, increasing the brightness of an LCD display can lower its power consumption. In other words, it can help reduce carbon dioxide and conserve energy. Our customers can control process costs without consuming massive amounts of energy by using our environment-friendly products even before our materials are commercialized and reach society. In fact, it is very important to solve problems through this kind of accumulation. The idea that it may be possible to make a greater contribution to society simply by changing our way of thinking should be the basis for approaching research and development.

**Johnson:** It is certainly possible that seeing the purpose of R&D in broader terms, without being constricted by monetization or road maps, will lead to the discovery of even greater value. It might be a good idea to add another axis to R&D to achieve that

**Kawahashi:** It is of course important to respond sincerely to social issues. But even just thinking more flexibly and building on what we can do, without being overly concerned about those issues, should



create more leeway for us to make a contribution.



## How to Best Incorporate the SDGs

**Shimizu:** As Ms. Kuroda pointed out a moment ago, building strategies that tie solutions to problems existing in society—such as the 17 SDGs—to our own growth is extremely important. However, I question whether our premise should be that all of the SDGs are applicable. I think that when we consider our sustainability as a company, we must take our discussion a bit deeper, looking not only at achieving goals in 2030 but also at the kind of essential value we must have in the future beyond that.

Specifically, the SDGs are far too comprehensive and some items have a trade-off relationship with others. For example, if we attempt to eliminate hunger, raise living standards, and increase GDP, energy consumption will also increase and the seventh SDG will not be attained. These goals have a relationship whereby “satisfying one means not satisfying another.” I think we should proceed carefully by also discussing which items to choose within the trade-off and why.



**Kuroda:** I agree. I think that when the UN prepared the SDGs, people did not expect the Global Goals to spread that much, particularly among Japanese major companies. However, behind the SDGs’ formulation is a sense of crisis concerning climate change and other issues. There are some who say that, as it becomes necessary to do business in an age of rising uncertainty when predicting the future is impossible, the successful experiences of Japanese-style management thus far are not being utilized much in dealing with the crisis. So some kind of bold change of thinking will be required. In that sense, the SDGs’ philosophy is important but there is really no need to be tied up by their 17 goals and 169 targets. I think it is acceptable to utilize those areas that you can utilize.

**Shimizu:** In Japan, in particular, there is a strong sense that companies are expected to commit to all 17 goals. But if we look at individual companies and industries, it is apparent that choice and prioritization are required. This makes it necessary to clarify “what it is we aim to do.” Moreover, I think a process whereby we tell society that “we will do this but we won’t do that” based on evidence and gain the acceptance and understanding of our stakeholders is important. For that reason, I think it is vitally important that we raise our own literacy\* with regard to quantitative information and evidence.

\* Literacy: The ability to understand, apply, and utilize information given in a particular field.

**Johnson:** Literacy is important. Literacy is also needed in communication. We must communicate with society responsibly.

**Shimizu:** Both the “speaker” and the “listener” must improve their literacy in order to achieve good communication. I therefore think that employee education will become important in addition to better education systems in society at large. This will lead to fully developed discussion.

**Johnson:** As for the details of the SDGs, people who hear about them almost always see things in simplistic terms. I think there is an aspect of the SDGs that is too simplified, as in “this is good and this bad.” So we have to be aware that we cannot educate all of society. We should provide better education to raise our own literacy and then take a more realistic and constructive approach.

**Takegahara:** Companies that list all 17 SDG logos do not understand their relative importance, and so we cannot say they are good companies for having done so. If it is a business company, the items to which it can contribute through its business will naturally be limited, and those issues that demand a response in accordance with its growth vectors will inevitably become apparent. The company will then help solve social issues by extending that field. This, I think, is material, and anything else is not material. I think we can arrange things in this manner.

**Kuroda:** Yes, I agree that “equal attention to all 17 SDGs” became the trend in Japan. One thing that impressed me was that some pharmaceutical company in Europe focused on four or so important goals from among the seventeen. Then, while linking them to their business, they spotlighted the most important one, the third SDG, which is “Good Health and Well-Being,” and presented themselves with a well-modulated message that says, “This is our goal.”

**Fujii:** I have heard it said that “Selecting materiality is discovering issues within the scope that answers can be found that have the greatest impact inside and outside the company.” That might be true in essence.

**Kuroda:** Speaking of the SDGs, a good number of companies in the US and Europe declared between 2015 and 2016—immediately after the SDGs were formulated—that they will tackle them. But I hear their number has been gradually falling to a certain extent more recently. The more that companies venture into the SDGs’ essence, the more they realize how high a hurdle the SDGs actually present. However, even so, the SDGs have achieved such a level of global recognition that I see no way but to use them.



**Takegahara:** Some people use the SDGs as a tool for discovering social issues. But what about finding the issues first and then considering how one can be of use in solving them? This might be the correct way of using them. But, like I said at the beginning, what we investors want is to make our investments after choosing companies that will survive with a strong business model. Accordingly, the question is whether or not the company can grasp the social issues it will face twenty or thirty years in the future and can use those issues as a source of its own growth. Previously I found explaining the grasping of social issues to be rather troublesome. But then the SDGs came out and became a kind of international language with the participation of stakeholders from around the world. Companies can extend their core competencies\* based on them and, as a result, help resolve social issues. Narrowing down the SDGs that you will commit to and then showing the public that you have a strategy and long-term plan that is based on them—I think that is another way of using the SDGs.

\* Core competency: The competitive core part of a company’s abilities.

**Kawahashi:** I am proud to say that, even before the SDGs existed, JSR did not engage in business that ignored the issues covered by their goals and targets. For example, when we procure raw materials, we conduct a detailed study of the “country risks”—including factors concerning human rights—of the country where the production plant is located. We thus see our procurements as being screened from the very beginning. With or without the SDGs, we first arrange and analyze how our business and CSR activities fit within society and



then check them against the direction we should be taking going forward. If anything is amiss, I want to view it as an important issue that needs addressing at that moment and to discuss it specifically with reference to materiality.

› [Dialogue - 3 What is "Differentiated Materiality"?](#)



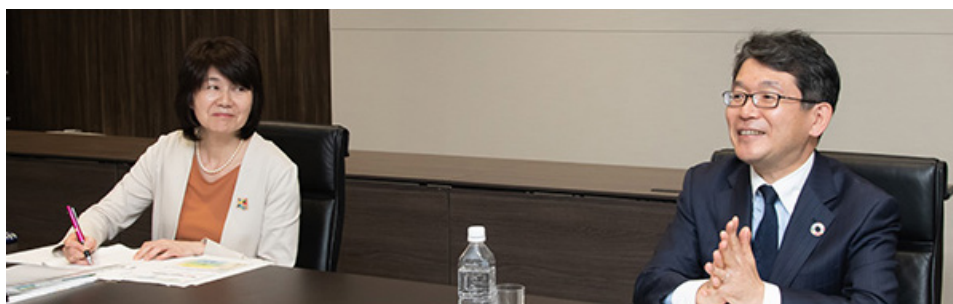
## Dialogue with Stakeholders

## JSR Group's Materiality and the SDGs - 3

## What is “Differentiated Materiality”?

## Considering Business Fields and Management Foundation as a Dualism

**Takegahara:** Looked at from the standpoint of an investor, JSR's materiality is extremely clear. I think there are many social issues that can be grasped in life sciences, such as contribution to lower medical costs by greatly improving the efficiency of new drug development. And fuel-efficient tires can undoubtedly contribute to climate change countermeasures. If you say that “issues tied to better quality of life in society are our materiality and also the SDGs that we should commit to,” then I think you will have a very clear message.



**Kuroda:** I also found it very easy to understand. Going further, because there is no need for JSR Group to resolve all issues alone, I think “Partnerships”—the seventeenth goal of the SDGs—should also be considered. For example, external partnerships that involve, say, using other company's technologies or collaboration are important in addressing microplastics. There should be no need to solve everything on your own.

Another approach is to use the SDGs not only in positive strategic aspects but also in improving areas that tend to swing in a negative direction, such as diversity and industrial safety. In the case of Japanese companies in particular, no matter how much they promote women's participation and the like, those efforts don't produce results. So they need to say what kind of future strategy they have concerning the ratio of female directors, for example, even if they currently have no female directors. So, in this sense, it may be better to show the “business fields” portion and “management foundation” portion separately when considering materiality.

**Takegahara:** That is exactly a point I wanted to make. “Business fields” and “management foundation” should be considered separately. No matter how much financial growth it achieves, if a company has weak corporate governance or holes in its compliance, it will attract social criticism. Thinking of the management foundation that supports the company's strength and the business fields that enhance its strength as a dualism, and then incorporating diversity, human rights, human resources development, and the like into the management foundation will make the company's strength stand out even more. I think this will fit in very nicely when you speak about JSR Group's materiality.

**Fujii:** Speaking of what make up the core competencies of JSR Group, I think one is human resources. If we consider what supports business reform that meets social needs, it is human resources

that can adapt to various changes in the business environment.

Looking at JSR's business, when our business expanded from petrochemical products business to what was then called "fine chemicals" business and then further to life sciences business, which is happening now, our human resources-generating corporate culture and human capital have allowed us to make the necessary adaptations. Diversity and human rights are listed as risk items in JSR's current materiality classifications. However, I think that such human capital is actually a "strength." So I felt we should highlight this point a bit more. In our materiality, I want to bring more attention to the fact that our human resources development capabilities, which produce people capable of adapting to business globalization and to changing business structures, are a strength of our company.

**Kuroda:** When I speak with people from Japanese companies, the subject of human resources development often comes up. But usually the discussion is premised on talented employees' coming into the company. As Japan's birthrate falls and its society ages, it will become more difficult to secure human resources. So, although human resources development is important, I get the sense that the time will arrive when hiring high-quality human resources will also become a candidate for materiality.

**Kawahashi:** As you say, when it comes to human resources, attention almost always goes to development. JSR also has many training programs and curricula for all levels. We are constantly working to make changes that are appropriate for the times by suitably modifying our educational programs as circumstances demand. But recently we have also been very conscious about acquiring talented human resources. In our case, hiring people with advanced knowledge and know-how in life sciences, materials informatics,\* and other fields has become particularly problematic. We need to reexamine this issue, beginning with our personnel assessment system and compensation system. We are currently beginning this discussion by going back to that point.

\* Materials Informatics: A method to efficiently search for new materials and alternative materials through information science.



## The Importance of Expressing Impact Quantitatively

**Shimizu:** When responding to SDGs is required, actions such as "SDGs wash"\* also arise. But even when no such intent exists, there is the risk that people will say "what you're doing differs from what the SDGs are supposed to be about." How should we avoid that risk? If you know of any useful examples or perspectives from other companies, even overseas companies, would you mind sharing them with us here?

\* SDGs wash: The taking of only superficial steps to address the SDGs

**Takegahara:** Recently, the EU Commission has been preparing a catalogue that delineates what is an activity compatible with sustainability and what is not. It appears that, ultimately, the catalogue will be used to prepare ISO standards. So I asked, "If even the question of what constitutes sustainability will be decided by the ISO, won't this eliminate originality and obstruct innovation?" But it seems they think that delineation is necessary to secure the minimum level of transparency, as not doing so will result in just "green wash" and "SDGs wash." There is no doubt that international opinion is moving toward stricter rules.

The point of "impact" that I mentioned earlier seems to be a focus of debate in Europe, and how to express impact will be the key. Methods for measuring impact are currently being discussed,

and various proposals are being put forward. The gist is that, in order to judge what is sustainable and whether or not something truly makes a contribution, it is important to disclose the impact of activities continuously in accordance with international rules. I think this will probably come together within the question of how to measure impact.

What this means is that measuring the impact brought by a product or activity as quantitative data and then preparing designs that will facilitate analysis later will be effective as a means of deciding what constitutes materiality. Because no means for quantification have been available, we have thus far generally talked in qualitative terms. However, if you can confirm positive effects as numerical values based on impact analysis conducted in line with established methods, you should be able to avoid accusations of “SDGs wash.”

**Shimizu:** There have been various attempts at quantification. Examples include LCA\* and carbon footprint.\* But it seems to me that these efforts have somehow lost momentum. I have some concern that quantitative evaluation of the SDGs will also fade away in five years or so. But considering that SRI (Socially Responsible Investment) has finally taken root after twenty years, it takes a certain amount of time before these things become socially recognized and established. So we may have to approach the SDGs with the same mindset.

\* LCA: Abbreviation of Life Cycle Assessment. A method of quantitatively analyzing and assessing a product's environmental impact throughout its entire life cycle.

\* Carbon footprint: The total amount of living- and activity-related greenhouse gasses emitted by individuals, organizations, and companies after conversion into CO<sub>2</sub>.

**Takegahara:** That is because finally, even in Japan, investors are making long-term investments, such as ESG investments, after gauging which companies can create value over the long term.

**Shimizu:** No matter the industry, there are giant companies that lead major trends. For example, things can change suddenly the moment such a company declares it will no longer use products derived from fossil fuels. Looked at in this light, it's possible that, in the case of JSR, there is greater risk of market change in the digital solutions field than in the petrochemical field.

**Johnson:** That's right. One of JSR's major customers in North America is Intel, which is a leading company in the digital field. One advantage of doing business with Intel is that we can quickly learn of possible industrial trends of the future. Intel has firm diversity guidelines and recently publicly announced that men and women will receive equal pay. It also presents strong statements for both financial and non-financial matters in its annual report. And most importantly, it clearly states that it emphasizes ESG in its relationship with vendors. So I think partnering with giant companies like Intel is an advantage, not a risk.

**Fujii:** Where do you see the difference between Japan and the United States?

**Johnson:** Much of the U.S. business environment is polarized right now, and thinking concerning climate change is no exception. Specifically, a general shift has been taking place recently, and I think that, right now, the U.S. is standing at a crossroads from which major change is about to take place.

My feeling is that people of the world see many challenges before them. This is causing them vague anxieties and leading to emotional responses. In this kind of social environment, I think it is very important for JSR Group to think about how it will fulfill its own responsibilities as a company and how it will convey its intent to do so.



## Incorporating Materiality into Business Schemes

**Takegahara:** So it becomes necessary to analyze risk and opportunity in each business field in that sense as well. But, even now, I think that, in JSR's case, your orientation toward realizing this as a business and the social value that it generates are being very clearly demonstrated. On the other hand, demonstrating the impact of social value with the KPIs\* is necessary to avoid being accused of practicing "SDGs wash." Through our discussion so far, I feel a good approach might be to discuss this matter with attention to international trends concerning impact measurement, with an eye to ensuring that the KPIs do not become self-directed, and then to present a strategy.

\* KPI: Abbreviation of Key Performance Indicator. An indicator for quantitatively assessing an individual's or department's progress toward a goal within a company or other organization.

**Shimizu:** Mr. Takegahara has given us some valuable comments. He noted that we should indicate impact quantitatively and explained how investors look at companies. Ms. Kuroda has said that we need not commit to all of the SDGs. Their insights made us realize the importance of ranking our priority ourselves and, indeed, the extremely heavy responsibility we bear in doing so.

**Fujii:** My department will be in charge of disclosing non-financial information, something that will be a significant issue going forward. So from that standpoint, I reaffirmed my desire to support JSR Group in its entirety by explaining and sharing how our activities contribute to a sustainable society in easy-to-understand terms.

**Shimizu:** I was reminded of the importance of three things during the discussion today. The first is "execution." The point here is how to make a contribution toward actually realizing the SDGs within business activities, rather than just using them as a slogan. Companies that operate globally across national borders play extremely important roles, and thus execution is, in itself, a social responsibility that is imposed upon us. The second is "priority." Specifically, it is important to steadfastly set and verify priorities. And the third is "literacy." The question here is how to improve the literacy of all, including employees, vis-à-vis the SDGs' concept and the social issues before us.

**Kawahashi:** The thing that particularly struck me in today's dialogue was the point about quantifying impact. Without it, JSR's policies will not take shape and the PDCA cycle will not work as it should. By all means, this point should be made part of future discussions concerning the formulation of materiality.

I was also impressed by the remarks concerning the importance of discussing business fields and management foundation separately and of preparing their policies independently. The point that logically explaining them becomes impossible if they are mixed together really struck me. From now on, I intend to arrange our company's materiality with awareness of this point in order to ultimately produce a uniform policy for JSR.

**Johnson:** Whether it's CSR or the SDGs, seeing them as peripheral to business will lead to failure. If they become superficial efforts made simply for publication in reports, they will end up being a waste of time and resources. Likewise, pretending that we can achieve all 17 of the SDGs or that we can set all as priorities will also be meaningless.

**Takegahara:** That's exactly right. Stakeholders do not want a summary of activities. They want to know if JSR Group has a strategy that can properly measure and present actual impacts to be brought by its technologies and innovation. That should become an important message in your next materiality.

**Johnson:** Through our discussion today, we gained a good appreciation of the importance of setting priorities in materiality. But more than that, we understood that those priorities will be meaningless unless they are thoroughly absorbed into our business schemes. The first thing that is necessary here is literacy. This means firmly understanding the business environment, social environment, and technical environment. The second is quantifying and measuring goals based on that understanding. If we cannot do this, we will be unable to present

clear actions later. Having understanding and then quantifying impact makes it possible to apply the PDCA cycle. From there, necessary actions will become apparent and, at the same time, accountability will become clear. Only then can we make a commitment to our stakeholders. We will be able to tell them



how we intend to grow and thrive by presenting a convincing story. I firmly believe that, if we can do that, we will be attractive to highly talented personnel. I further believe we will be able to establish healthy cycles in all areas, including in building the best possible relationship with our customers.

Thank you very much for this wonderful discussion time and your valuable opinions.



## Basic Issues in JSR Group's Corporate Activity

# Corporate Governance

- ↓ [1. Philosophy](#)
- ↓ [2. Corporate Governance Structural Diagram](#)
- ↓ [3. Timely Disclosure of Corporate Information](#)
  - (1) Principle of Information Disclosure
  - (2) State of Internal Structure Pertaining to Timely Disclosure



## 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.

To do so, we will make efforts towards the expansion and strengthening of corporate governance as important topics in management.

- [JSR's philosophy, policies, governance structural diagram and management system pertaining to corporate governance](#) 
- [Click here for Corporate Governance Report \(PDF 545KB\)](#) 

## 2. Corporate Governance Structural Diagram

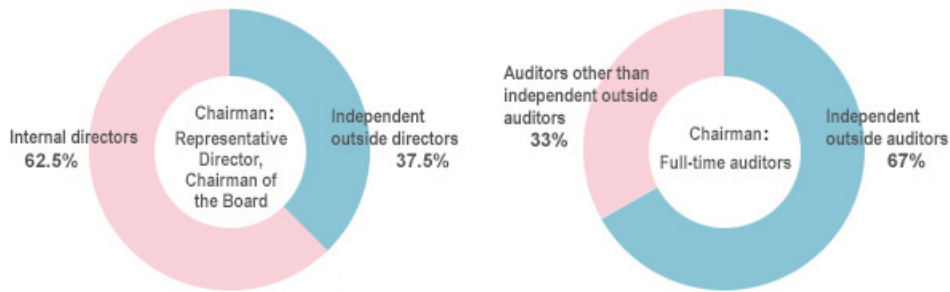
As a company with Audit & Supervisory Board members, JSR strives to strengthen and expand its corporate governance system based on a system whereby its Board of Directors and Audit & Supervisory Board members monitor and supervise the execution of duties by directors and management.

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 and independent and outside Audit & Supervisory Board members possessing broad expertise and abundant experience.

**Composition of Board of Directors**  
(as of September 6, 2019)

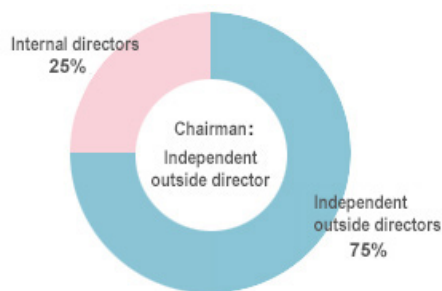
**Composition of Audit & Supervisory Board**  
(as of June 18, 2019)



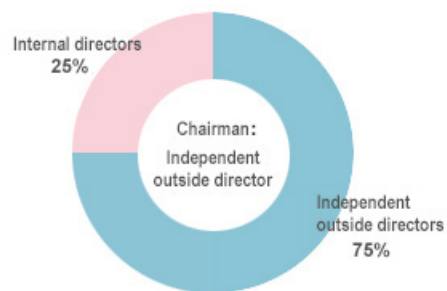


We are also striving to improve the transparency and soundness of our business management and achieve higher medium- and long-term corporate value by, for example, setting policies for director appointments and remuneration through the establishment of a Nomination Advisory Committee and Remuneration 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.

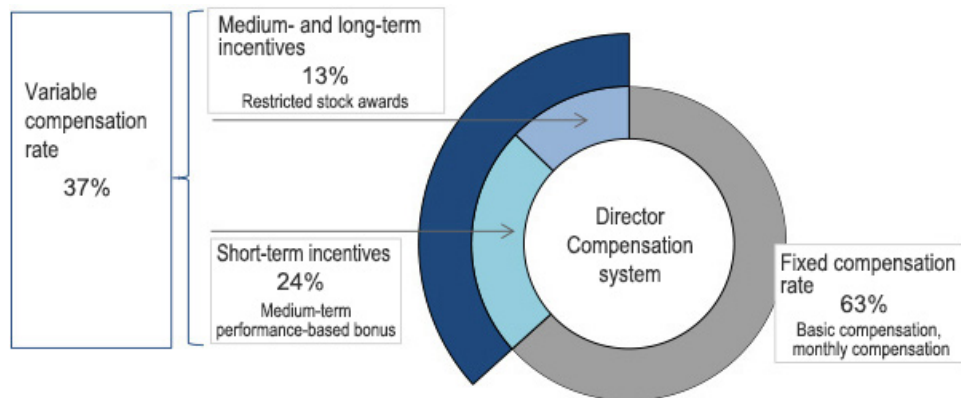
**Composition of Nomination Advisory Committee**  
(as of September 6, 2019)



**Composition of Remuneration Advisory Committee**  
(as of September 6, 2019)



**FY2018 Average compensation of directors (excluding outside directors)**



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.

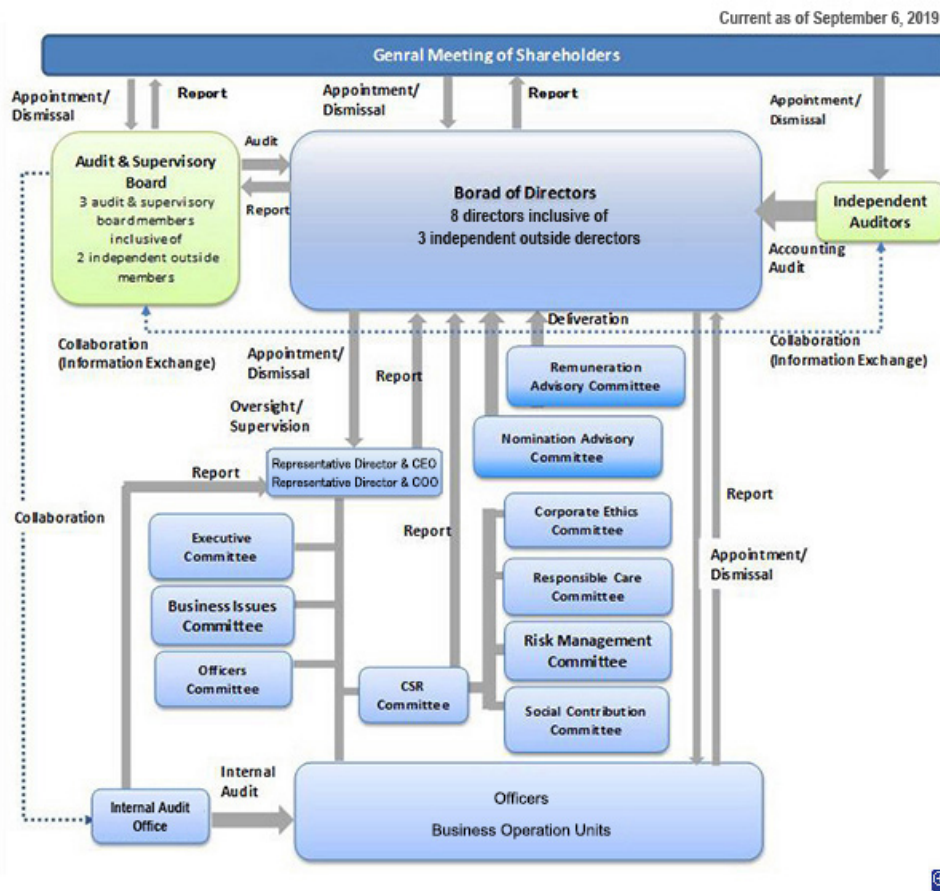
> [ESG Data \(PDF1,152KB\)](#)

**History of JSR's corporate governance reform**



	1996~	2000~	2005~	2010~	2015	2016	2017	2018
Shifts					2011: Revision of corporate mission system			
Corporate mission			2005: Introduction of officer system					
Number of directors	Approximately 16 directors		2005: Approximately 8 directors					
Outside directors				2011: 2 persons appointed as independent outside directors → 3 persons appointed as independent outside directors				
Outside auditors				2010: An attorney and CPA are appointed as independent outside auditors				
Executive compensation / appointment				2014: Remuneration Advisory Committee (ensure transparency of executive compensation)		2015: Introduction of medium-term performance-based bonus		
						2017: Introduction of restricted stock awards (incentives for continuously improving corporate value)		
					2015: Nomination Advisory Committee (ensure transparency of executive appointment)			
Various committees		2003: Establishment of CSR meeting		2008: Establishment of 4 committees under CSR meeting (Corporate Ethics, RC, Risk Management, Social Contribution)				
Information disclosure	1996: Publication of RC Report		2009: Publication of CSR Report					
				2009: Expansion of information in the notice of convening of shareholders meeting				

## Attachment 1: Corporate Governance Structural Diagram



## 3. Timely Disclosure of Corporate Information

### Principle of Information Disclosure

JSR has formulated a “Disclosure Policy” as a rule for promptly, accurately and fairly disclosing important corporate information to investors, and is making efforts towards actively disclosing information related to the state of management in line with relevant laws, such as the Financial Instruments and Exchange Act, and rules for timely disclosure specified by the Tokyo Stock Exchange, Inc.

Even with regard to information that does not apply to the rules for timely disclosure, efforts will be made towards timely and appropriate disclosure of information that is thought to affect investment decisions made by investors. Furthermore, JSR has formulated the “JSR Group Rules for Employee Insider Trading” to prevent insider trading by raising thorough awareness of basic items that should be complied with when managing internal information that executives and employees obtain in the course of their work, and during sale, purchase and other transactions related to stocks, etc.

The supervising department for disclosure of information is the Public Relations Department, and efforts are being made toward prompt disclosure by coordinating with relevant departments. Afterwards, publication data is featured on the JSR website to ensure thorough disclosure of information. For a schematic diagram of JSR's internal system related to timely disclosure of corporate information, refer to "Attachment 2: Information Disclosure Structural Diagram".

**Attachment 2: Information Disclosure Structural Diagram (Structural Diagram on Timely Disclosure of JSR's Corporate Information)**



## Basic Issues in JSR Group's Corporate Activity

# Compliance

- ↓ [1. Philosophy](#)
- ↓ [2. JSR Group Principles of Corporate Ethics](#)
- ↓ [3. Advancement Structure](#)
- ↓ [4. Corporate Ethics Activities](#)
  - (1) Publication and Education of JSR Group Principles of Corporate Ethics
  - (2) Corporate Ethics Awareness Survey
  - (3) Hotline (Internal Reporting Channels)
- ↓ [5. Legal Compliance Measures](#)
  - 1) Approach to Preventing Bribery and Unfair Competition
  - 2) Approach to Taxes (Philosophy)
  - (1) Reviewing and Improving Legal Compliance
  - (2) Training and Increasing Awareness
    - 1) Compliance Handbook
    - 2) Seminars and E-Learning
- ↓ [6. Protection of Personal Information](#)

## 1. Philosophy

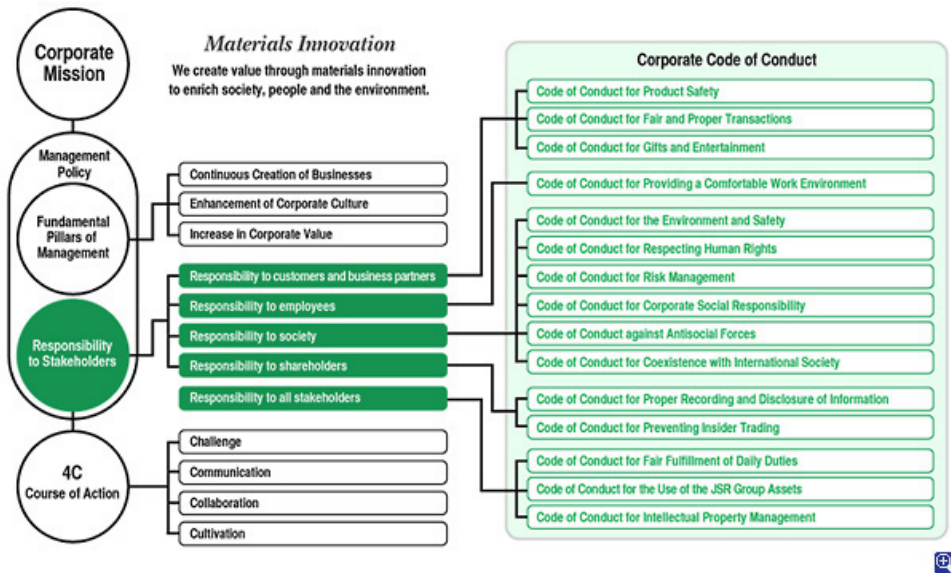
JSR Group has been endeavoring, by building up and maintaining good relationship with all our stakeholders, to become a trustworthy and indispensable corporate citizen.

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

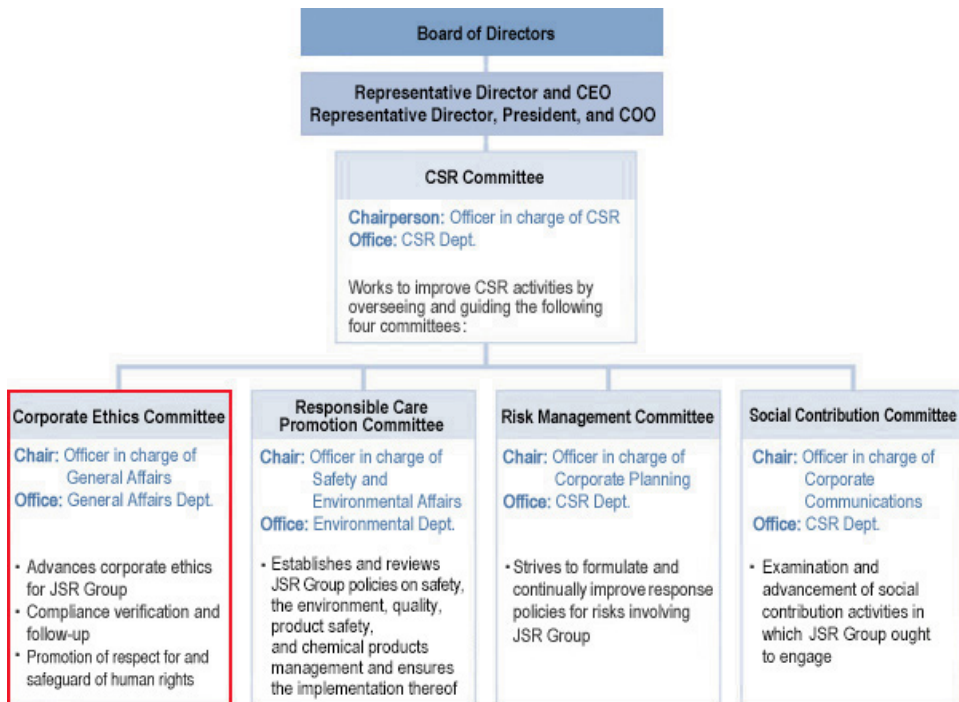
JSR Group is advancing corporate ethics activities in an integrated manner at all Group companies both at home and abroad. To achieve this, we have formulated the JSR Group Principles of Corporate Ethics as a concrete guideline for globally-shared corporate ethics that reflects our "Essential Elements." 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. Advancement 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) Publication and Education of 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. We are incorporating 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 each stratum, such as new recruits and newly promoted managers. Especially regarding harassment education, we conduct management training related to bullying and harassment reports and the handling of actual cases for high-ranking and managerial positions.

### 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. Reports made to the external hotline are also simultaneously reported to full-time auditors, and independence from management is ensured. 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.

### State of Use of JSR Group's Hotline (Number of Reports)



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 FY2018. 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. Hotline services are entrusted to the same outside organization employed for the employees' hotline. Efforts are being made toward improving reliability, by thoroughly enforcing strict secrecy of reports and prohibiting handling of reports that would be disadvantageous to those reporting something.

Since its introduction in FY2014, there have been no reports made using the Suppliers' Hotline.

## 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) Approach to Preventing Bribery and Unfair Competition

JSR has formulated "Rules on Complying with Anti-Corruption Laws" and "Standards for Gift-Giving and Entertaining" that specify necessary items for all executives and employees to comply with the Japanese Unfair Competition Prevention Act, U.S. Foreign Corrupt Practices Act, U.K. Bribery Act and other anti-corruption laws when performing their tasks, based on the JSR Group Principles of Corporate Ethics and laws and regulations that require compliance.

In addition, JSR has also formulated "Rules on Antimonopoly Law" (Japan), "Rules on Complying with U.S. Antitrust Laws", "Rules on Complying with the EU's Antitrust Laws and "Rules on Complying with Korean Fair Trade Laws" that specify items necessary for complying with each country's antimonopoly (antitrust) laws.

#### Participation in global incentives

JSR participates in the Corruption Prevention subcommittee of the Global Compact Network Japan (GCNJ), which is a local network for the UN's "Global Compact". In this subcommittee, various activities are carried out, such as lectures with invited experts, exchange of information related to measures for preventing corruption among participating companies, etc. Through these activities, JSR is exploring, examining and implementing effective and ideal corruption prevention measures that are suitable for the JSR Group.

Corruption prevention measures have a strong compliance system advancement aspect of complying with relevant laws of each country. At the same time, the foundation of such measures is closely linked to global social issues related to human rights, labor and the environment. In addition to continuing to implement effective corruption prevention measures, JSR is searching for ideal forms of such measures.

### 2) Approach to Taxes (Philosophy)



The JSR Group understands that carrying out appropriate tax payments and tax management that follows relevant laws and regulations of each country fulfills an important role in the economic and social development of each country and is linked to supporting and earning the trust of all stakeholders.

The JSR Group is engaged in taxes by supporting 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.”

## **(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.



**Compliance Handbook**

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.

### **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 FY2018 were as follows.

- January: Subcontract Act seminar
- February–March: Export Control seminar
- September: 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 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

- ↓ [1. Philosophy](#)
- ↓ [2. Risk Management System](#)
- 3. Risk Management Measures
  - ↓ [\(1\) Identifying Risks and Selecting Important Risks](#)
  - ↓ [\(2\) BCM \(Business Continuity Management\)](#)
    - 1) Formulation and Operation of BCM Procedures
    - 2) Major Earthquake Preparations
  - ↓ [\(3\) Enhancement of Initial Response to Emergencies](#)
    - 1) Crisis Management Training
    - 2) Disaster Management Training at each plant and laboratory
    - 3) Safety Confirmation System
    - 4) Infection Preparedness
    - 5) Responses to Legal Risks and Compliance Risks
  - ↓ [\(4\) Enhancing Information Security](#)

## 1. Philosophy

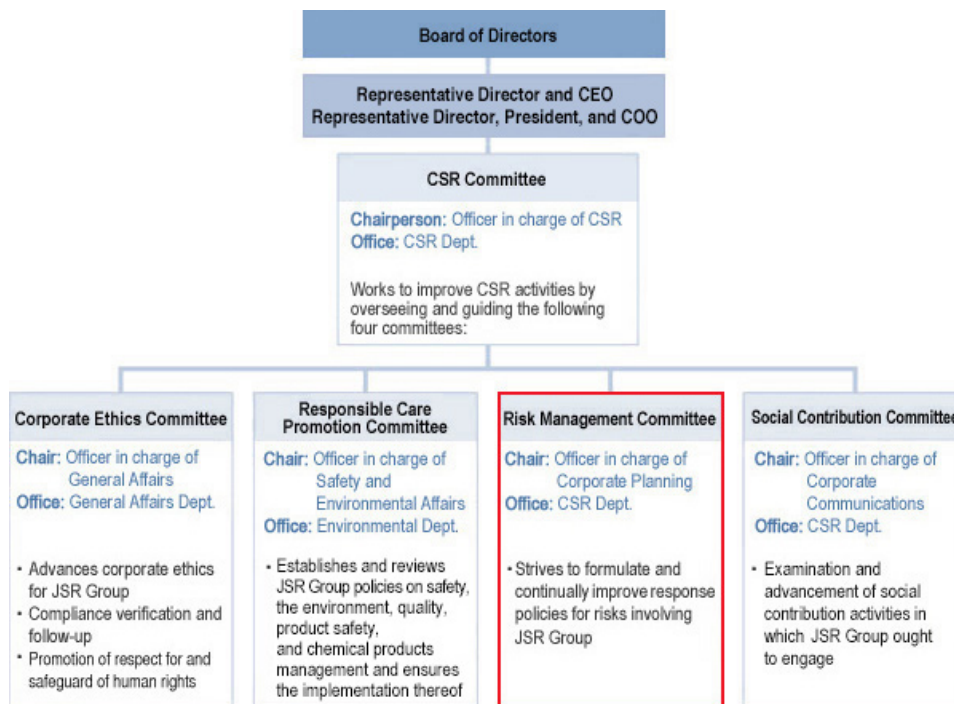
JSR Group believes that preventing a major crisis from occurring and minimizing its impacts on business activities is an important management role. The Group has formulated Risk Management Policies and established a Risk Management Committee through which it actively pursues risk management activities.

- › [Basic Views and Policies Related to JSR's Corporate Governance](#) 

## 2. Risk Management System

JSR Group manages risks by broadly dividing them into actual risks that exist in the company and potential risks. Risk management is carried out for risks arising in the normal course of business\* based on careful discussions and resolutions made in important meetings such as those of the Board of Directors. At the same time, for risks other than those arising in the normal course of business, the Risk Management Committee formulates response policies and promotes risk management in the JSR Group.

\* 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.

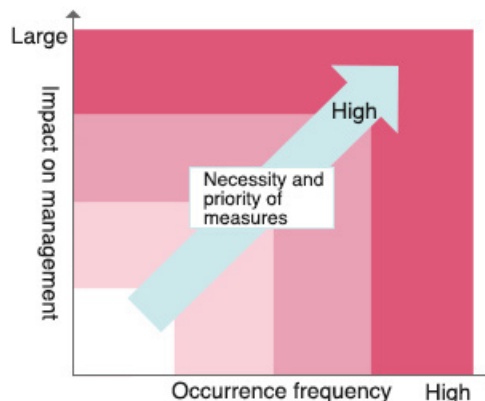


### 3. Risk Management Measures

#### (1) Identifying Risks and Selecting Important Risks

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.

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.



JSR Report

> [Financial Section 2019 05.Risk Information \(PDF 524KB\)](#)

#### (2) BCM (Business Continuity Management)

##### 1) Formulation and Operation of BCM Procedures

JSR has formulated BCM procedures that summarize the BCM/BCP<sup>\*</sup> 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.

> [Security and disaster prevention](#)

## (3) Enhancement of Initial Response to Emergencies

### 1) Crisis Management Training

With the objective of strengthening the ability of the headquarters for accident and crisis control in the Head Office (Minato Ward, Tokyo) to respond in a time of crisis, JSR has held crisis management training once a year since 2004, with participation from members from the headquarters for accident and crisis control. The training for FY2018 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 headquarters for accident and crisis control during the 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, with the President as the head of the headquarters. However, in this year's training, a scenario in which the intrinsic members of the headquarters for accident and crisis control at the Head Office were not present was envisioned, with the objective of raising the overall level of disaster response at the Head Office. Training was conducted by focusing on the people who would serve as acting agents for the absent members as the main subject, and personal and organizational actions that should be taken were confirmed, 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 and maintain business continuity.

### 2) 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)**

### 3) Safety Confirmation System

In FY2009, JSR 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.

Training using this system is conducted regularly, and JSR is prepared for large-scale and wide-area disasters.

### 4) 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.

To prevent flu infections from spreading in our workplaces and to also make sure that the cases of influenza that do occur stay minor, 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.

### 5) Responses to Legal Risks and Compliance Risks

> [Compliance](#)

## (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, by complying with laws and regulations and by observing other social norms relating to the handling of information, will protect information that belong to the JSR Group, its customers, business partners and other third parties.
- 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)

- ↓ [1. Philosophy](#)
  - (1) Promotion Items and Policy
  - (2) International Initiatives
- ↓ [2. RC Advancement Structure](#)
- ↓ [3. Environment and Safety Management](#)
  - (1) Compliance
  - (2) Environmental Management System
  - (3) Industrial Health and Safety Management System
  - (4) Environment and Safety Audits
  - (5) Environment Distinguished Service Award
- ↓ [4. Policy on Chemical Management](#)
- ↓ [5. Stakeholder Engagement](#)
  - Dialogue with employees, local communities, customers, and shareholders
- ↓ [6. 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](#)
- > [Responsible Care® \(RC\)](#)

### (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)<sup>\*1</sup> to customers and yellow cards<sup>\*2</sup> 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.

\*1 Safety Data Sheet (SDS)

A Safety Data Sheet (SDS) is a document that contains information for the safe handling of chemical products. To ensure the safe handling of chemical substances and prevent accidents, the Industrial Safety and Health Act requires the provision of information when transferring or supplying a chemical substance. One way of doing this is by issuing a document (SDS) that notes the hazardous qualities of the chemical substance in question.

\*2 Yellow Card

This is an “emergency contact card” that accompanies a hazardous material or product when it is shipped on land. Containing information on measures to take if an accident occurs, it is intended as a means of comprehensively ensuring safety in the transport of hazardous materials. The Ministry of Land, Infrastructure, Transport and Tourism (Jikan No. 48 of February 18, 1997) and the Fire and Disaster Management Agency direct that a yellow card must be carried when moving hazardous materials.

## (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.

> [RC Global Charter](#) 



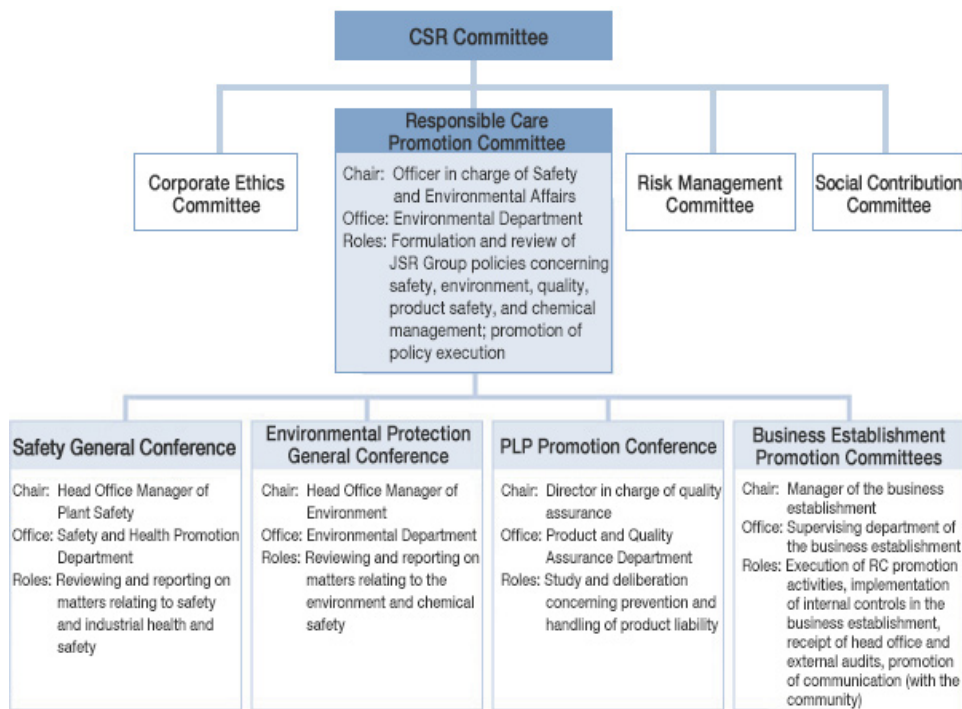
**Declaration of support for RC Global Charter**

## 2. RC Advancement Structure

Led by the officer in charge of safety and environmental affairs, the Responsible Care Promotion Committee formulates activity policies and action plans concerning JSR Group’s environmental safety, product safety, chemical management, and other matters and manages the results of those activities.

For the execution of concrete operations, the Responsible Care Promotion Committee sets up various meetings and committees and then proceeds according to plans.

Additionally, decisions made by the Responsible Care Promotion Committee are periodically presented to the CSR Committee and are also reported to senior management.



➤ [Details of the CSR Committee and Four Conferences/Committees \(CSR Management and Advancement Structure\)](#)

### 3. Environment and Safety Management

#### (1) 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.

Additionally, we actively advance 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 safety and preventing accidents.

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

#### Certified High-Pressure Gas Establishment Audits

Each year, we conduct headquarters-led audits of our certified plants—the Yokkaichi Plant, Chiba Plant, and Kashima Plant—as a certified high-pressure gas business. Through our FY2018 audits, we confirmed that all of our certified plants continue to be in compliance with our safety management system. We also audit Group companies that are certified high pressure gas establishments, and provide cooperation in the appropriate operation of their safety management system.

- › [Chemical and Product Safety](#)
- › [Health and Safety Initiatives: Accident Prevention and Industrial Health and Safety](#)

## (2) 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.

JSR Group companies, mainly manufacturing companies, have also obtained ISO certification, and are promoting environmental conservation activities using a management system that complies with the ISO14001 standard.

### ISO 14001 Certification

Japan (9 companies, 16 business establishments)	International (8 companies, 8 business establishments)
JSR Corporation	Elastomix (Thailand) Co., Ltd. (Thailand)
Japan Coloring Co., Ltd.	JSR Micro Korea Co., Ltd. (South Korea)
Techno-UMG Co., Ltd.	JSR Micro, Inc. (United States)
JSR Engineering Co., Ltd.	JSR Micro N.V. (Belgium)
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	PT Elastomix Indonesia (Indonesia)
JSR Logistics & Customer Center Co., Ltd.	

## (3) 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.

## (4) 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. Beginning with the audits of FY2015, we have been employing a style whereby we share and discuss issues challenges faced by audited departments. We also set up dialogues between top management and employees that serve as opportunities for sharing the two sides' thoughts and stimulating environmental and safety activities.

Through the FY2018 audits, we confirmed that awareness of “safety first” is penetrating throughout the organization. We further confirmed that efforts targeting facility management and recruitment of environmental safety personnel, which were previously identified issues, are progressing. However, common issues include inadequate sharing of risk information and adjustment of assessment levels, and expectations for better clarification in terms of envisioning and responding to emergency situations. It should be noted that we are also extracting and providing suggestions for matters to be presented to senior management and the head office through audits. Priority issues for FY2018 audits will be i ) management of risks concerning accidents (fires and leaks) and ii ) efforts to prevent unsafe behaviors as well as compliance with laws relating to the environment and chemicals.



**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 environmental and safety audits using the JSR audit system at our Group companies in Japan that are involved in production, transportation, and engineering processes in order to achieve integrated Responsible Care activities. The audits have allowed us to verify activities in each company and share information on them.

In addition, given differences in laws, cultures, and customs that exist in each country, we did not conduct audits of overseas Group companies in FY2018 but instead visited them to hold “safety information exchange” meetings. This was done with consideration for the fact that the challenges and concerns each business establishment faces differ from those in Japan.

We also held EHS (Environment, Health & Safety) meetings in Japan with JSR Micro Inc. and JSR Micro NV.

### Audited Dept. of FY2018 Headquarters Environment and Safety Audits

JSR (plants)	Yokkaichi Plant, Chiba Plant, Kashima Plant
JSR Group companies (in Japan)	Japan Butyl, Elastomix, JSR Engineering, Emulsion Technology, Kraton JSR Elastomers, JSR Life Sciences Corporation, JSR Micro Kyushu, Japan Coloring, JM Energy

### Department of Overseas Group Company Holding Safety Information Exchange in FY2018

JSR Group companies (overseas)	Elastomix Indonesia, Elastomix (Thailand), Elastomix (Foshan)
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**A safety information exchange with an overseas Group company**



**Hands-on safety training in an EHS meeting**

## (5) Environment Distinguished Service Award

To further encourage environmental protection activities, we created the Environment Merit Award for employees who have made important contributions to environmental protection through a range of activities that include environmental product and technology development, environmental impact reduction, and assisting local communities with environment-related issues. Ten employees received this award for four areas of excellence in FY2018.

Business establishment	Description
Yokkaichi Plant	Reduction of emissions of hazardous air pollutants by closing drain work.
Yokkaichi Plant	Prevention of colored wastewater discharges by introducing colorimeters



Chiba Plant	Control of butadiene releases to the air from gas tanks
Yokkaichi Plant	Reduction of wastewater odors from the plant

## 4. Policy on Chemical Management

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

- 1) Instead of hazard-based management,<sup>\*3</sup> we will endeavor to implement risk-based management.<sup>\*4</sup>
- 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.

<sup>\*3</sup> Management based solely on the hazardous properties of substances

<sup>\*4</sup> Management based on exposure to the hazardous properties of substances

- [Advancement Structure](#)
- [See Chemical and Product Safety for a detailed description of activities](#)

## 5. 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.

<a href="#">Employees:</a>	Employee awareness surveys, activities to ensure penetration of the Corporate Mission, the CSR & RC Caravan program, etc.
<a href="#">Local communities:</a>	Social contribution/regional contribution activities, regional dialogue meetings, etc.
<a href="#">Customers:</a>	Customer satisfaction surveys, responses to CSR questionnaires, winning of awards, etc.
<a href="#">Shareholders:</a>	Shareholders' meetings, communication with shareholders and investors, information disclosure, etc.

## 6. 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 FY2018.

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.

### What is RC?

RC is an acronym for Responsible Care<sup>®</sup>. 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."

Started in Canada in 1985, Responsible Care is practiced in the chemical industries of 58 countries and regions of the world (as of April 2015). It has attracted considerable international attention as a unique initiative of a type not seen in other industries, and is even encouraged in an action plan (Agenda 21) for implementation by countries and related international organizations to achieve sustainable development in the 21st century that was adopted at the "Earth Summit" (United Nations Conference on Environment and Development) held in Rio de Janeiro, Brazil, in June 1992.

› [Source: Japan Chemical Industry Association pamphlet "Do You Know about Responsible Care?"](#) 

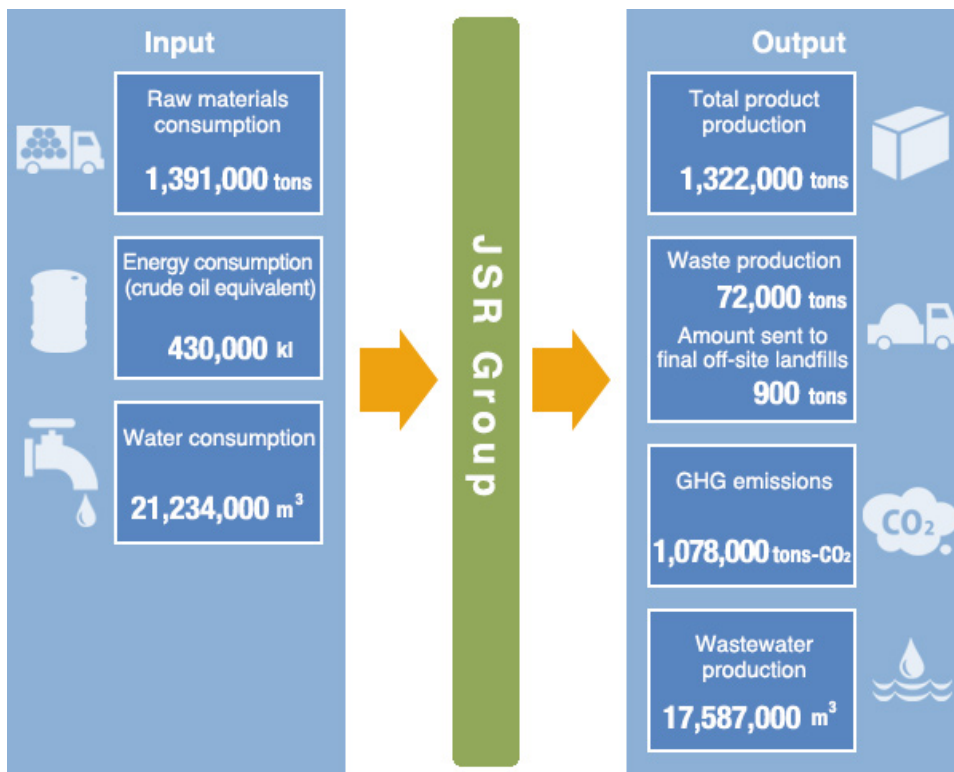
Social Issues Attributable to JSR Group's Corporate Activity  
**Environmental Conservation**  
 (Environmental Impact Reduction): Material Balance

**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 chart provides an overview of JSR Group's environmental impact (material balance) in FY2018. It presents totals for three items as input (raw materials consumption, energy consumption and water consumption) and five items as output (total product production, waste production, amount sent to final off-site landfills, greenhouse gas (GHG) emissions, and wastewater production).

> [JSR Group ESG Data](#) 



## Social Issues Attributable to JSR Group's Corporate Activity

# Climate Change Mitigation

### ↓ [1. Initiatives to Reduce Greenhouse Gas \(GHG\) Emissions](#)

- (1) JSR
- (2) Head Office Building
- (3) Logistics: Improving Transport Efficiency

### ↓ [2. Global Trends](#)

#### [GHG Emissions and Energy Consumption](#)

Environmental problems attributable global warming (e.g., forest fires, droughts, water shortages, rising sea levels, threats of extinction, and impacts on ecosystems) are occurring on a global scale. Such problems are also seen in Japan. They are represented by floods caused by torrential rains, health problems such as heatstroke that result from more and more days of extreme heat, and such impacts on the ecosystems as coral bleaching.

JSR Group recognizes this as an important issue. We therefore strive to reduce GHG emissions by, for example, reducing the amount of energy needed in the various processes of producing and supplying our products.

Amid a global trend whereby businesses are managing GHG (Scope 1 to 3) indirectly emitted from their supply chains and disclosing their emissions, JSR Group calculates and ascertains its 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 GHG emissions by sources owned or managed by a company or household (use of fuel: factory, heater, private automobile, etc.)

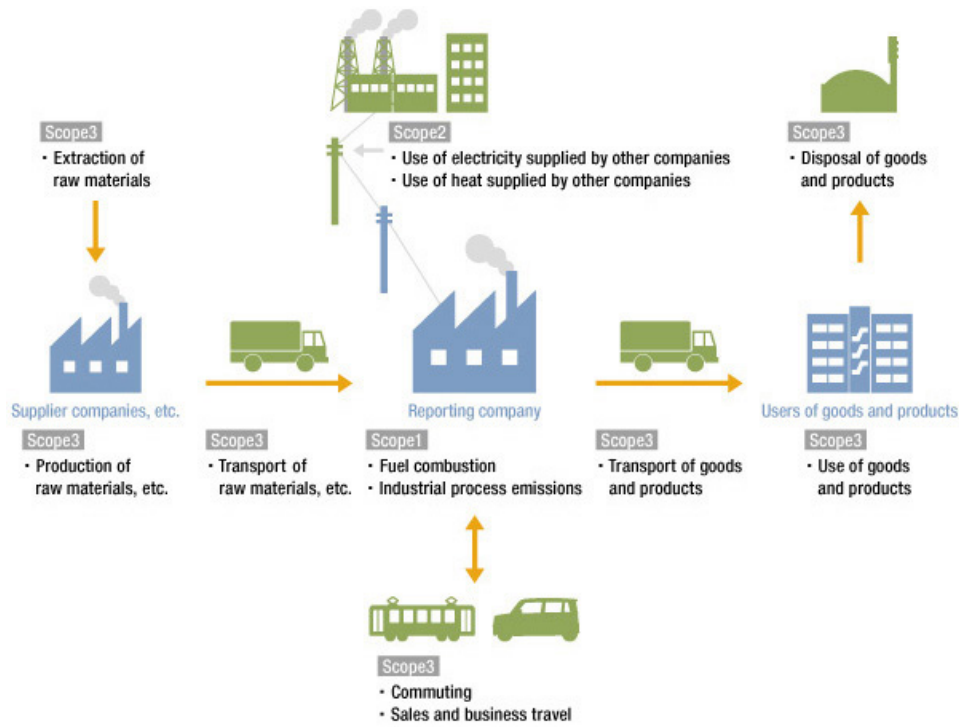
**Scope 2:** Indirect GHG emissions from the use of electricity, steam, or heat (use of purchased electricity, etc.)

**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.)

> [JSR Group ESG Data](#) 



## 1. Initiatives to Reduce GHG Emissions

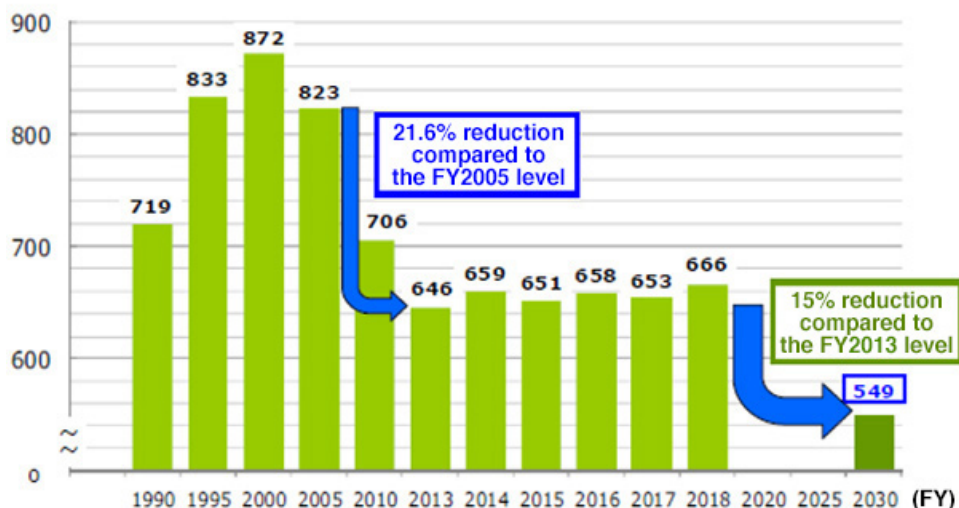
### (1) JSR

In FY2012, JSR established its "System to Reduce Total CO<sub>2</sub> 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 natural gas-fired gas turbine cogeneration system and sludge dewatering system at the Yokkaichi Plant. In FY2018, we reduced our CO<sub>2</sub> emissions by 7.4% compared to the FY1990 level.

Beginning in FY2005, we achieved a significant reduction of 21.6% by FY2013 compared to the FY2005 level by promoting the above-mentioned fuel conversion and making large-scale capital investments.

However, since FY2013, our GHG emissions have remained about the same, despite our efforts to conserve energy. Looking ahead, we will strive to reduce our GHG emissions toward achieving a long-term goal of "reducing emissions by 15% in FY2030 compared to the FY2013 level." In addition to energy conservation activities, we will achieve this by introducing highly efficient equipment and using renewable energy.

#### GHG emissions (kt-CO<sub>2</sub>)





**Natural gas-fired turbine cogeneration system (Yokkaichi Plant)**

Using natural gas as fuel  
 Reduces CO<sub>2</sub> emissions compared to coal- or heavy oil-fired steam boilers and condensing steam turbine systems.



**Sludge dryer system (Yokkaichi Plant)**

Reduces the amount of combustion support fuel (heavy oil) used in onsite incineration by drying high-water-content sludge that is produced by comprehensive wastewater treatment facilities and using it as fuel.

## (2) 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 CO<sub>2</sub> 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 FY2018, our power consumption fell below the base year average as a result of the main initiatives described below, and we achieved a 15.6% reduction in our emissions compared to the base year average.

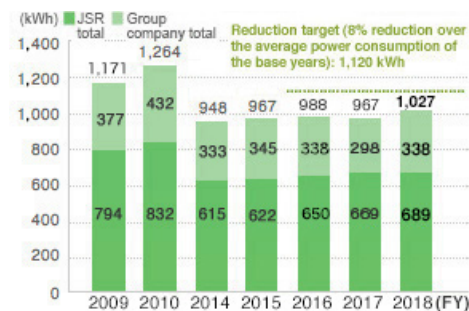
### Power Saving Target

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



## (3) 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 FY2018, as a result of policies to transport goods and raw materials by railway and ship, we achieved a modal share of approximately 85%, thus maintaining last year's high level, and successfully held down per-unit transportation energy.

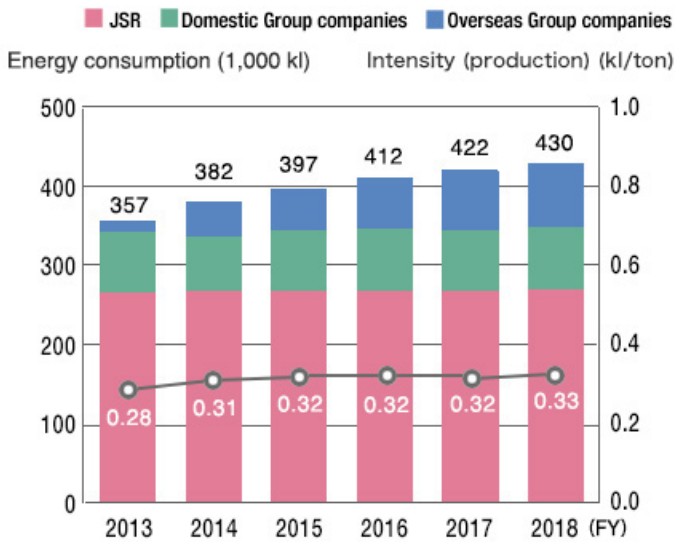
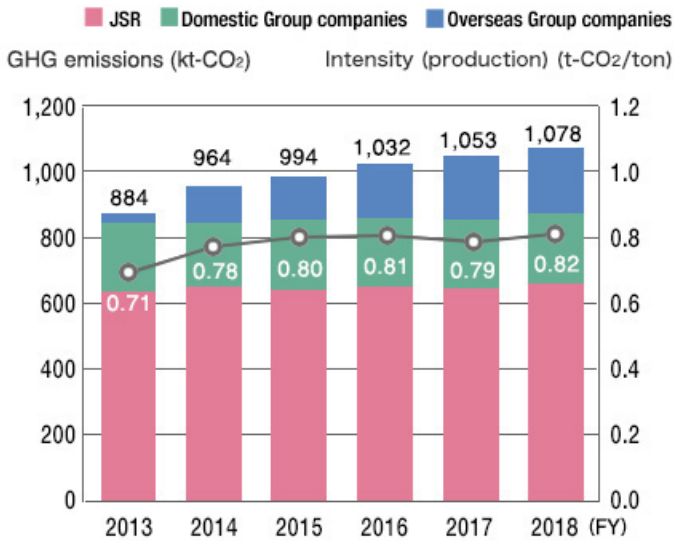
FY	2013	2014	2015	2016	2017	2018
CO <sub>2</sub> emissions (tons)	22,960	23,984	23,333	25,495	24,437	24,208
Category 4 Transportation and delivery of raw materials and other materials	10,489	12,028	12,172	14,133	13,177	13,112
Category 5 Transportation of waste from plants	164	186	245	206	195	202
Category 9 Transportation and delivery of products	12,307	11,770	10,916	11,156	11,065	10,894
Transport volume (million ton-kilometers <sup>*3</sup> )	492	523	511	562	534	514
Modal shift rate (%)	83	85	86	87	86	85
Energy consumption (kl: crude oil equivalent)	9,026	9,388	9,112	9,898	9,899	9,324
Energy intensity (kl/1,000 t-km)	0.0183	0.0180	0.0178	0.0176	0.0178	0.0181

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

## 2. Global Trends

### GHG Emissions and Energy Consumption

Globally, we emitted 1,078 kt-CO<sub>2</sub> in FY2018. This represented an increase of 2% compared to the previous year. Our energy consumption amounted to 430,000 kl, which was 2% more than the previous year. We will promote activities that take a long-term perspective on the global side of our business as well.




## Social Issues Attributable to JSR Group's Corporate Activity Environmental Conservation (Water Resources Conservation)

- ↓ [1. Breakdown of water consumption \(by intake source\) and recycling rate](#)
- ↓ [2. Global trends](#)

Water is an essential resource for living beings. Globally, freshwater, in particular, is an extremely valuable resources. In Japan, as in other countries, water resources are being affected by natural disasters caused by abnormal weather events, some of which are a result of climate change. This makes the appropriate management of water resources a necessity.

JSR Group uses such water resources for drinking water, of course, but also as a raw material and coolant in its manufacturing processes. We strive to recycle water in our processes and, after it is used, appropriately purify it before discharging it to rivers.

- ▶ Pollution load (COD discharges, total nitrogen emissions, total phosphorus emissions) → [JSR Group ESG Data](#) 

### 1. Breakdown of water consumption (by intake source) and recycling rate

JSR consumed 15,275,000 m<sup>3</sup> of industrial water, groundwater<sup>\*1</sup> and tap water in FY2018. Of this amount, 29.3% was recycled in plant processes. We will endeavor to manage our water resources by continuing this effort, with the goal of “maintaining our current recycling rate.”

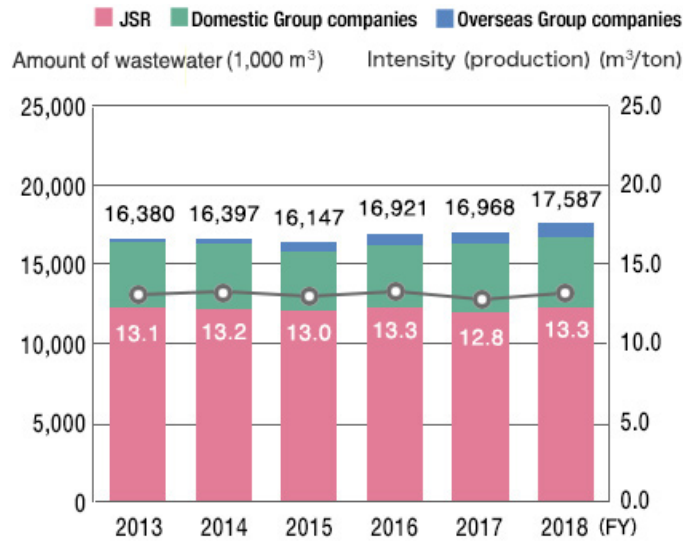
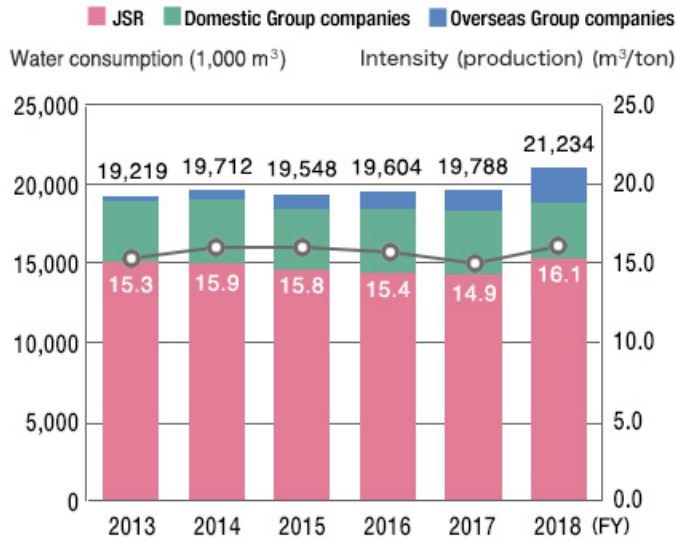
(x 1,000 m<sup>3</sup>/year)

FY	2013	2014	2015	2016	2017	2018
Industrial water	14,734	14,359	14,190	13,917	13,667	14,790
Ground water	234	357	253	354	393	313
Tap water	167	159	158	176	200	172
<b>Total Water Consumption</b>	<b>15,134</b>	<b>14,875</b>	<b>14,600</b>	<b>14,447</b>	<b>14,259</b>	<b>15,275</b>
Usage of recycling water	4,496	4,249	4,159	4,193	4,250	4,481
Recycling rate (%)	29.7	28.6	28.5	29.0	29.8	29.3

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

### 2. Global trends Water consumption and total amount of wastewater

Globally, we used 21,234,000 m<sup>3</sup> of water in FY2018. This represented an increase of 7% compared to the previous year. Our total wastewater amounted to 17,587,000 m<sup>3</sup>, which was 4% more than the previous year. We will strive to appropriately manage our water resources on the global side of our business as well.



## Social Issues Attributable to JSR Group's Corporate Activity Environmental Conservation (Waste Reduction)

↓ 1. Initiatives to Reduce Industrial Waste

- (1) JSR
- (2) Logistics: Application of "3R" (Reduce, Reuse, Recycle) to Packaging Materials
- (3) PCB Management

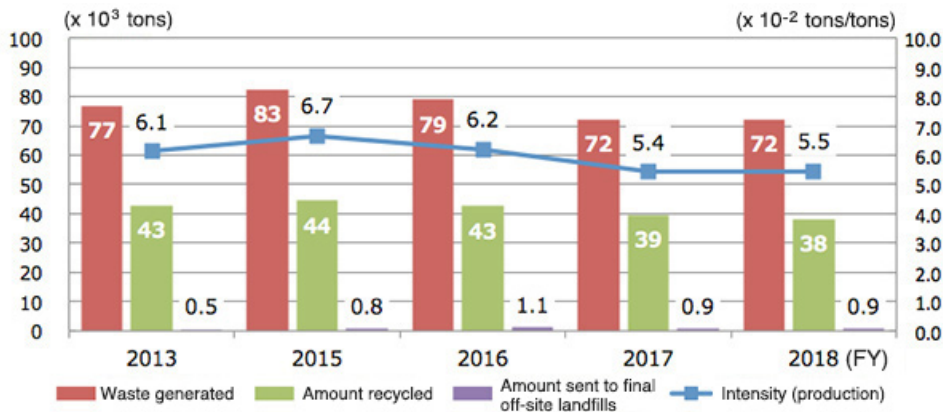
↓ 2. New Initiatives

### 1. Initiatives to Reduce Industrial Waste

JSR Group is controlling the amount of waste it generates, sorting waste, and searching for businesses that accept recyclable materials.

In FY2018, the Group generated 72,000 tons of waste globally.

#### Wastes Generated by JSR Group



#### (1) JSR

Since FY2000, JSR has been implementing its goal of "zero emissions"<sup>\*1</sup> through activities that include prevention of generation of waste materials, sorting of waste, and the search for recycling locations throughout the company. We have been continuing our zero-emissions efforts since FY2003.

\*1 JSR's definition of "zero emissions": When the volume of final off-site waste buried at third-party landfills is less than 0.1% of the volume of waste generated

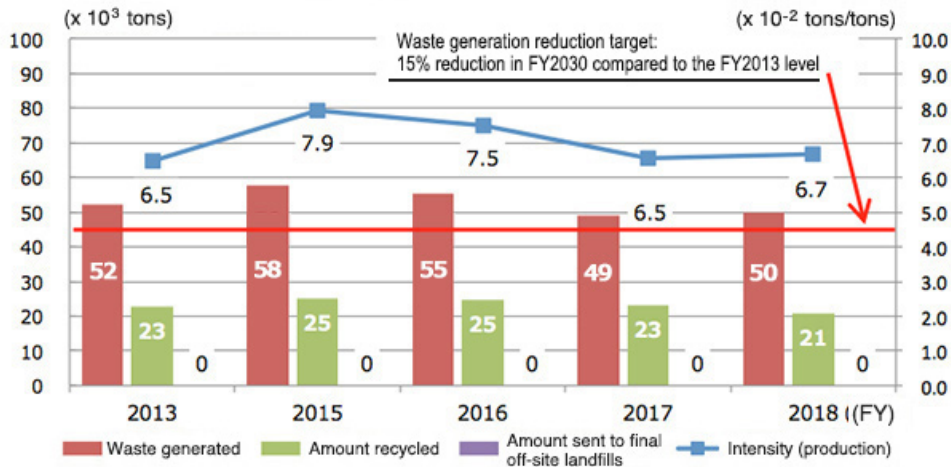
Specifically, the Yokkaichi Plant is continuing the following measures targeting 1) sludge and 2) coal ash, which account for about 90% of the total volume of generated waste materials.

- 1) Transforming sludge into a valuable material (conversion into fuel) with the introduction of sludge drying equipment
- 2) Recycling coal ash as cement material

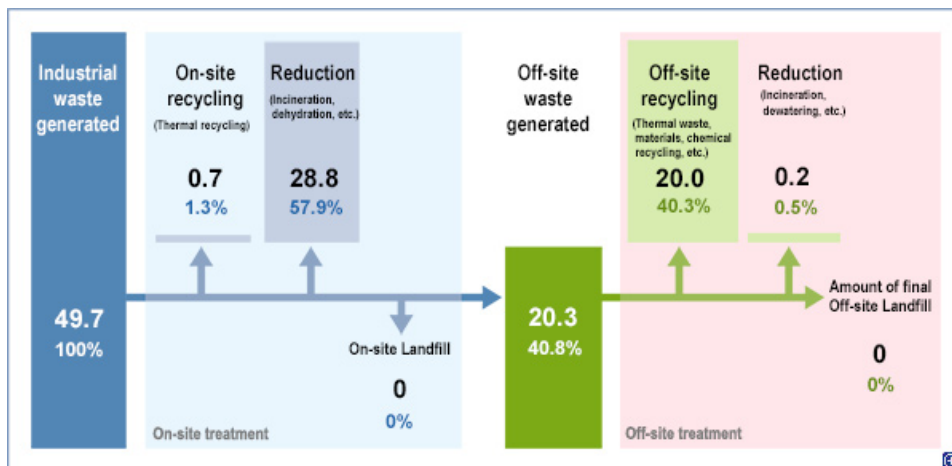
Furthermore, we are an executive member of the Mie Prefecture Industrial Waste Solutions Promotion Committee and endeavor to continually reduce industrial waste and ensure its proper disposal in cooperation with the community.

Moreover, aiming to help create a recycling-based society, JSR is searching for even more recycling locations and taking other measures toward fulfilling the goal of “reducing waste by 15% in FY2030 compared to the FY2013 level.”

In FY2018, we reduced our generated waste by 4.5% compared to FY2013. We will continue working toward our goal by reducing the amount of waste we generate.



### Industrial Waste Processing Flowchart (FY2018 performance in thousand tons/year)



## (2) Logistics: Application of "3R" (Reduce, Reuse, Recycle) to Packaging Materials

JSR has always been serious about environmental measures in its logistics. 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:** Reusing intermediate product containers and preventing the breakage of packaging materials for linked use.\*

**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.

\* Packaging materials for linked use: Packaging materials that can be returned by or collected from the customer for reuse

## (3) 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 systematically carries out detoxification treatment to



meet treatment deadlines.

#### Treatment of high-concentration PCB

Electrical devices	Number of devices	Oil containing PCB (liter)
Devices in storage (not in use)	3	462
Devices in operation	0	0
<b>Total</b>	<b>3</b>	<b>462</b>
Treatment volume thus far	318	182,960
(Current treatment status %)	99.1	99.7

As of March 31, 2019

## 2. New Initiatives

JSR considers the problem of marine plastic litter to be an important issue. In light of this, we are participating in the Japan Initiative for Marine Environment (JaIME), an organization that was launched by five chemical industry bodies on September 7, 2018, as a founding member.

We are also investigating JSR Group's disposal processes for plastics in Japan based on the national government's proposed "plastic materials recycling strategy (tentative)" and studying management indices.

Looking ahead, we will promote further recycling of waste plastics by setting the following two points as long-term targets (FY2030). We will also strive to make a social contribution by, for example, raising awareness of the plastics problem through in-house seminars and explanatory briefings, promoting "3R"-based activities in daily life (e.g., regarding the use of plastic bags and PET plastic bottles), and participating in coastal cleanups.

- 1) 100% recycling (including heat recovery)
- 2) 60% recycling (not including heat recovery)

## Social Issues Attributable to JSR Group's Corporate Activity

### Environmental Conservation (Other Environmental Impact Reduction Efforts)

- ↓ [1. Protection of Atmospheric, Water, and Soil Environments](#)
  - (1) Protection of the Atmospheric Environment
  - (2) Protection of Water Environments
  - (3) Protection of Soil Environments
- ↓ [2. Measures Targeting PRTR Substances](#)
- ↓ [3. Asbestos Measures](#)
- ↓ [4. Improving the Local Environment](#)
- ↓ [5. Environmental Accounting](#)
- ↓ [6. Investments in Environmental and Safety Equipment](#)
- ↓ [7. Maintenance Management Information Regarding Waste Treatment Facilities, By-Product Reduction Plan](#)

## 1. Protection of Atmospheric, Water, and Soil Environments

JSR endeavors to protect the environment by complying with such laws as the Air Pollution Control Act, Water Pollution Prevention Act, and Soil Contamination Countermeasures Act and thereby avoid polluting the air, water or soil (including groundwater).

### (1) Protection of the Atmospheric Environment

#### 1) Initiatives to reduce emissions of sulfur oxides (SOx) and nitrogen oxides (NOx)

JSR keeps its emissions below regulatory values by implementing various measures, including those described below.

- Installation of flue gas desulfurization equipment (Yokkaichi Plant: in-house power generation)
- Fuel conversion (from heavy oil to public utility gas) (FY2013, Kashima Plant [Kashima South Joint Power Corporation])
- Introduction of denitrification equipment and low-NOx burners

We will maintain current levels through full management of the above-mentioned measures.

▶ [SOx and NOx emissions → JSR Group ESG Data](#) 

#### 2) Initiatives for the Reduction of VOCs\*<sup>1</sup> Emissions into the Atmosphere

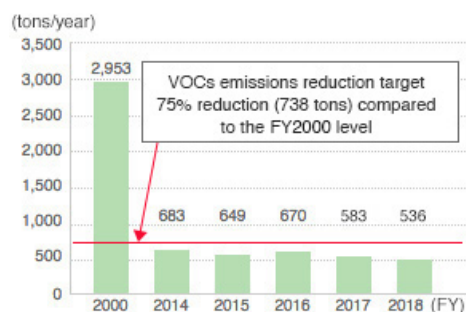
Setting a voluntary target that is even higher than that of the government and JCIA (specifically, to reduce emissions of VOCs by 75% compared to the FY2000 level), JSR is making large-scale capital investments and taking other actions to reduce its emissions.

- Installation of regenerative thermal oxidizer (synthetic rubber finishing system flue gas treatment) (FY2006-2009; 5 devices at 3 plants)
- Operational improvements (e.g., enhancing airtightness of release points, using a closed system for chemical sampling)
- Preventing leaks (valves, axle seals, etc.)

As a result, our VOCs emissions in FY2018 were 536 tons (82% reduction as compared to FY2000), and thus we continue to meet our voluntary target. We will maintain our current voluntary target levels through full management of the above-mentioned measures.

\*1 VOCs = Volatile Organic Compounds.

### VOCs Emissions



### 3) Preventing freon leaks

JSR works to control leaks when using Class-1 Specified Equipment, including industrial air conditioners, refrigerators, and freezers, based on the Act on Rational Use and Proper Management of Fluorocarbons.

In order to properly promote efforts to control freon leaks, we prepared management standards that expand the scope of management to include all devices that use freon (including those that are not designated products) and are continuing to manage leaks based on them. Our freon leaks in FY2018 amounted to 266 t-CO<sub>2</sub> after CO<sub>2</sub> conversion (reporting to the government is mandatory for leaks of 1,000 t-CO<sub>2</sub> or more).

We will continue to appropriately manage leaks and link our efforts to leak control.

## (2) Protection of Water Environments

JSR performs rigorous wastewater management at all of its plants, and strives to maintain and improve water quality. JSR has been in full compliance with the 7th Total Pollutant Load Control that was put into operation in April 2012. It should be noted that nitrogen regulations in Mie Prefecture, where our Yokkaichi Plant is located, were strengthened in the 8th Total Pollutant Load Control. We have achieved a level that meets the 8th Total Pollutant Load Control's requirements by continuing to take steps to improve water quality. We will continue to strictly monitor water quality and strive to further reduce our impact on water.

➤ [Load \(COD emissions, total nitrogen emissions, total phosphorus emissions\) → JSR Group ESG Data](#) 📄

## (3) Protection of Soil Environments

JSR regularly conducts fixed-point studies of soil and groundwater (observation wells) at each of its plants. As in previous years, no problems were found in FY2018.

Additionally, whenever we plan construction that involves changing the soil's form and nature over an area exceeding 3,000 m<sup>2</sup>, we voluntarily conduct a soil survey beforehand. In FY2018, fluorine and lead exceeding base values were detected in a voluntary survey conducted in the Yokkaichi Plant. We notified the authorities of our discovery of contamination and took appropriate measures in accordance with the law.

## 2. Measures Targeting PRTR\*<sup>2</sup> Substances

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 highly hazardous or are emitted in significant amounts and have a great impact on the environment. Such measures include enhancing the airtightness of substance release sources,

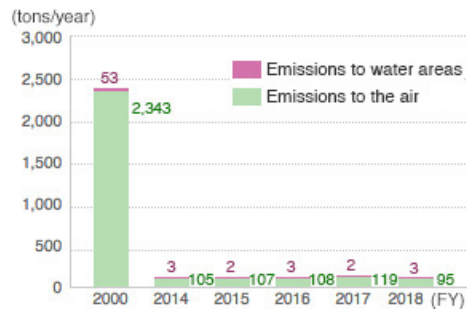
rendering substances harmless by incineration, and improving manufacturing processes.

As a result, our atmospheric emissions in FY2018 (95 tons) amounted to a 96% reduction as compared to FY2000.

We will maintain current levels through full management of the above-mentioned measures.

\*2 PRTR: Pollutant Release and Transfer Registers

▶ [Emissions of main chemical substances → JSR Group ESG Data](#)



### 3. Asbestos Measures

JSR conducted a survey of locations sprayed with materials containing asbestos in all of its facilities, including Group companies. For those places that were identified as a result, we undertook removal and enclosure work in accordance with the Ordinance on Prevention of Health Impairment due to Asbestos. This work was completed in FY2006.

In addition, whenever we demolish structures, we take appropriate measures based on the Air Pollution Control Act and Ordinance on Prevention of Health Impairment due to Asbestos to ensure that no workers or others nearby suffer health problems due to exposure to asbestos.

### 4. 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<sup>\*3</sup>) 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 of our commitment to maintaining such environment-friendly equipment, we received no environmental complaints between FY2008 to FY2018.

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

\*3 RTO (Regenerative Thermal Oxidizer): A device that combusts breaks down VOCs into water and CO<sub>2</sub> 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		2014	2015	2016	2017	2018
No. of environmental complaints	Odor	0	0	0	0	0
	Noise	0	0	0	0	0
	Vibration	0	0	0	0	0
	Other	0	0	0	0	0

## 5. 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, Yokkaichi Research Laboratories, Tsukuba Research Laboratories, and Nagoya Branch

- **Target Period**

April 1, 2018 - March 31, 2019

- **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.

### (1) Environmental Protection Costs

(Unit: one million yen)

Classification		Content of main activities Figures in parentheses express millions of yen.	Investment		Expense	
			FY2017	FY2018	FY2017	FY2018
(1) Business area costs			584	1,022	4,017	4,515
Breakdown	(1)-1 Pollution prevention costs	Investments: Water pollution (Drainage piping upgrade [primary effluent, etc.], general drainage facility aeration tank reinforcement, etc.) Expenses: Air pollution prevention, maintenance and management, etc.	346	743	1,577	1,823
	(1)-2 Global environmental protection costs	Investments: In-house power generation, etc. Expenses: Maintenance of in-house power generation, etc.	75	94	890	975
	(1)-3 Resource	Investments: Upgrade of industrial waste processing facilities, upgrade of fluidized bed furnace refractories, etc.	164	185	1,550	1,717

	circulation costs	Expenses: industrial waste recycling, treatment costs, etc.				
(2) Upstream/downstream costs			0	0	0	0
(3) Management activity costs		Expenses: Environmental impact monitoring, ISO 14001 maintenance and operation, etc.	15	25	485	502
(4) Research and development costs		Expenses: Development of environmentally friendly products, tests for legal applications, etc.	0	0	1,384	1,116
(5) Social activity costs		Expenses: Donations to environmental protection organizations, support for ICETT, etc.	0	0	41	47
(6) Environmental pollution response costs			0	0	0	0
Total			599	1,047	5,927	6,180

## (2) Environmental Protection Effects

Effect	Index	Unit	FY2017	FY2018	Difference*3	Related information
Environmental effects related to resources used in business activities	Total energy consumption (crude oil equivalent)	kL	266,400	269,400	3,000	<a href="#">For more information</a>
	Use of resources designated under PRTR Act	tons	739,300	725,700	-13,600	<a href="#">For more information</a>
	Water consumption	1,000 m <sup>3</sup>	14,300	15,300	1,000	<a href="#">For more information</a>
Environmental protection effects related to environmental impact and waste emitted from business activities	GHG emissions	tons	653,200	666,100	12,900	<a href="#">For more information</a>
	SOx emissions	tons	5	4	-1	<a href="#">For more information</a>
	NOx emissions	tons	335	308	-27	<a href="#">For more information</a>
	PRTR substance emissions	tons	121	98	-23	<a href="#">For more information</a>
	Total amount of wastewater	1,000 m <sup>3</sup>	12,100	12,500	400	<a href="#">For more information</a>
	Chemical Oxygen Demand emissions	tons	457	479	22	<a href="#">For more information</a>
	Total nitrogen emissions	tons	156	128	-28	<a href="#">For more information</a>
	Total phosphorus emissions	tons	1	1	0	<a href="#">For more information</a>
	Waste materials from plants	tons	23,200	20,300	-2,900	<a href="#">For more information</a>



	Off-site recycling	tons	22,500	20,000	-2,500	<a href="#">For more information</a>
	Reduced volume of waste treated off-site	tons	670	239	-431	<a href="#">For more information</a>
	Waste materials from plants disposed of by landfill	tons	0	0	0	<a href="#">For more information</a>
	PRTR materials transported	tons	445	328	-117	<a href="#">For more information</a>
Other environmental effects	Products transported	million ton-kilometer	534	514	-20	<a href="#">For more information</a>
	During transport GHG emissions	tons	24,400	24,200	-200	<a href="#">For more information</a>
	Number of environmental complaints (Odor, noise, and vibration)	cases	0	0	0	<a href="#">For more information</a>

\*3 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	
		FY2017	FY2018
Cost reduction	By saving energy	185	75
	By saving resources	51	124
	By treating waste on-site	397	343
Total		633	542

### (4) Consolidated Accounting

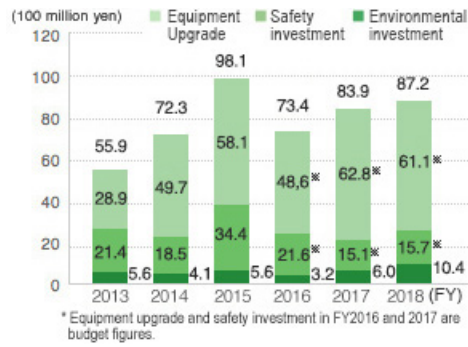
(Unit: one million yen)

	Investments		Expense		Benefit	
	FY2017	FY2018	FY2017	FY2018	FY2017	FY2018
JSR	599	1,047	5,927	6,181	634	542
Domestic Group companies total	110	363	1,558	2,241	174	194
Total*4	709	1,410	7,486	8,422	808	736

\*4 Total of JSR and nine domestic Group companies (Techno UMG's Otake Plant and Ube Plant were added in FY2018)

## 6. Investments in Environmental and Safety Equipment

JSR makes continuous investments in the environment and safety. In FY2018, our investments in various types of environmental equipment (e.g., for energy conservation, wastewater treatment, etc.) and various types of safety equipment (e.g., for prevention of workplace accidents, replacement of aging equipment, and preparations for major earthquakes) totaled 8.7 billion yen. We will continue actively making investments to maintain and improve the environment, safety, and health in accordance with our medium-term capital investment plan.



## 7. 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

- > [FY2018 \(PDF 373KB\)](#)
- > [FY2017 \(PDF 92.0KB\)](#)
- > [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](#)

## Social Issues Attributable to JSR Group's Corporate Activity Environmental Conservation (Biodiversity Conservation)

- ↓ [1. JSR Group Biodiversity Policies](#)
- ↓ [2. Activity Progress Status](#)

### 1. JSR Group Biodiversity Policies

JSR Group has formed biodiversity policies in FY2012 based on issues identified through conservation activities conducted in the past. We are currently promoting various activities in accordance with these 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<sup>\*1</sup> 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.

\*1 JBIB = Japan Business Initiative for Biodiversity.

### 2. 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 "FSC Forest Week 2019," 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.

> [FSC Forest Week 2019](#) 



## 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**


- The Yokkaichi Plant is actively using its green spaces as places for communication and environmental education.
- It holds biodiversity-themed events for employees and their families.
- It maintains and manages biodiversity spaces at the plant site and company housing.

**FY2018 Activities**

- Addition of a stop in a biodiversity space on the plant site to the plant tour route. Also, beginning of acceptance of visits at the occupational level from November 2018.
- Implementation of expert-led organism surveys in the plant's biodiversity spaces
- A planned nature tour for employees' families that was to be led by the curator of a local museum was cancelled due to poor weather.
- Maintenance and management of biodiversity spaces that were created at the plant site and company housing

**Future Activity Plans**

- Continued acceptance of visitors to biodiversity spaces at the plant site
- Holding of a nature tour for employees' families to be led by the curator of a local museum
- Implementation of an expert-led organism survey in biodiversity spaces to be conducted once every three years
- Maintenance and management of biodiversity spaces created at the plant site and company housing



**Expert-led organism survey within biodiversity-friendly green spaces**  
**The Yokkaichi Plant creates biodiversity-friendly green spaces and then strives to measure and improve their effects through expert-led organism surveys.**

### Chiba Plant

**Overview of Activities**


- The Chiba Plant has developed the "Ikoi no Hiroba" (Relaxation Garden) that is part of its green spaces into a biodiversity-friendly and uses it as a place for talking about biodiversity.

**FY2018 Activities**

- Cutting of lengthy branches and unnecessary trunks to allow sunlight to reach the ground and nurture new buds and vegetation.
- Development of a pond on the plant's grounds, formation of an environment inhabitable by fish, creation of a water flow as a means of maintaining water quality, and placement of porous stones


**Future Activity Plans**


- Development of Ikoi no Hiroba and study of ways for using it



**After cutting**

### Kashima Plant

<b>Overview of Activities</b>		
<ul style="list-style-type: none"> <li>• The Kashima Plant has developed a “pond” on its grounds to recreate the local ecosystem. It also installs birdhouses on trees in its green spaces and manages the spaces with consideration for all organisms.</li> <li>• It uses its green spaces as places for discussing biodiversity with local residents and employees’ families.</li> </ul>		
<b>FY2018 Activities</b>		
<ul style="list-style-type: none"> <li>• Planting of fruit trees (persimmon, mikan, lemon, yuzu, etc.) in green spaces (May)</li> <li>• Monitoring of all areas with birdhouses and observation of breeding in some birdhouses; additional installation of birdhouses (May and September)</li> <li>• Weeding of invasive plants (lance-leaved coreopsis and oleander) (June)</li> <li>• Regular conduct of JBIB Land Use Score Card evaluations (Scores were roughly the same as the previous year’s, indicating that biodiversity-friendly green spaces are being maintained.)</li> <li>• Review of overall green space management plans to strengthen their maintenance; development of an operational scheme</li> <li>• Regular pond cleaning</li> </ul>		<p><b>Additional installation of birdhouses.</b></p>
<b>Future Activity Plans</b>		
<ul style="list-style-type: none"> <li>• Commencement of the green space management scheme developed in FY2018; identification of subsequent problems and implementation of countermeasures</li> </ul>		

<b>Tsukuba Research Laboratories</b>		
<b>Overview of Activities</b>		
<ul style="list-style-type: none"> <li>• The facility establishes a biodiversity promotion area and practices wildlife-friendly green-space management.</li> </ul>		
<b>FY2018 Activities</b>		
<ul style="list-style-type: none"> <li>• In principle, prohibition of the chemical substances (herbicides) within the area</li> <li>• Creation of soil with fallen leaves and branches (consideration for the cycle of matter)</li> <li>• Regular monitoring of invasive species</li> </ul>		
<b>Future Activity Plans</b>		
<ul style="list-style-type: none"> <li>• Establishment of a biodiversity promotion area and wildlife-friendly green-space management</li> </ul>	<p><b>Educational activities using the Biodiversity Promotion Office’s “Seasonal Flowers” notice board</b></p>	

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

We strive to engage in biodiversity-friendly product development by procuring raw materials and developing products that have little environmental impact.

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

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

## Social Issues Attributable to JSR Group's Corporate Activity

### Health and Safety Initiatives (Security and Accident Prevention/Occupational Health and Safety)

- ↓ [1. Philosophy and Course of Action for Occupational Health and Safety, Policy for Security Management](#)
- ↓ [2. Advancement Structure and Management System](#)
- ↓ [3. Medium-Term Plan for Health & Safety and Security Management](#)
- ↓ [4. Occupational Health and Safety Initiatives](#)
  - (1) Numerical Targets and Priority Activities
  - (2) Workplace Accident Record
  - (3) Activities in FY2018
  - (4) Looking to FY2019
- ↓ [5. Security Management Measures](#)
  - (1) Numerical Targets and Priority Activities
  - (2) Facility Accident Record
  - (3) Activities in FY2018
  - (4) Looking to FY2019
- ↓ [6. Activities Common to Occupational Health and Safety and Security Management](#)
  - (1) Health & Safety and Security Management Education
  - (2) Organization and Education for Safe Plant Operation
  - (3) Safety Ceremony and Safety and Health Activity Forum
  - (4) Safety Competency Assessments by the Japan Safety Competency Center

## 1. Philosophy and Course of Action for Occupational Health and Safety

JSR has established a "Course of Action for the Philosophy for Occupational Health and Safety" that present specific actions demanded of the company and each of its employees. It is based the "Philosophy For Occupational Health and Safety" that is spelled out in the "Top Commitment" issued by JSR's top management and which serves as the basis for realizing worksites in which everyone can work "healthily," "safely," and "with peace of mind."

### 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.



### Courses of Action of the Philosophy for Occupational Health and Safety

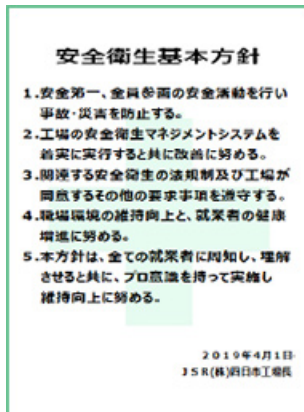
1. No matter the situation, we will act with safety foremost in mind.



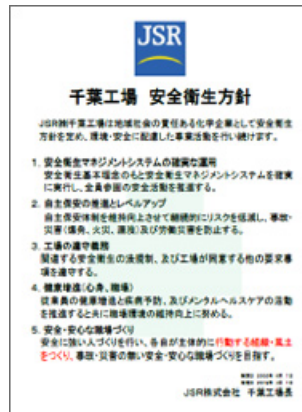
- We will comply with established rules and never fail to act in accordance with safety basics.
- We will maintain safety by identifying and eliminating both actual and potential hazards.
- We will strive to create comfortable work environments and promote physical and mental health.
- Through communication and ingenuity, we will aim to achieve 100% employee participation in all safety activities.



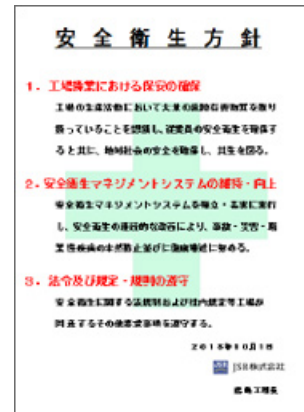
In addition, we use the “Philosophy for Occupational Health” and “Course of Action for the Philosophy for Occupational Health and Safety” as the basis for establishing health and safety policies in our plants that are matched to the individual characteristics of each plant in terms of its organizational makeup, workplace environments, and other traits.



**Health & Safety Policy for the JSR Yokkaichi Plant**



**Health & Safety Policy for the JSR Chiba Plant**



**Health & Safety Policy for the JSR Kashima Plant**

## Policy for Security Management

JSR establishes a “Policy for Security Management” that presents the company’s aim to be an accident-free organization, one in which all employees practice autonomous and proactive safety activities by accepting the “Philosophy for Occupational Health” and “Course of Action for the Philosophy for Occupational Health and Safety.”

### Policy for Security Management

#### (1) Extremely Safe Behavior

The Philosophy for Occupational Health and Safety has penetrated through the organization, the Course 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.





## 2. Advancement Structure and Management System

Activity policies and action plans concerning JSR Group's occupational health and safety, security management, and other matters are deliberated and formulated by the Responsible Care (RC) Promotion Committee, which is chaired by the officer in charge of safety and environmental affairs. The RC Committee also oversees the results of those activities.

### Occupational Health and Safety Management System and Audits of Headquarters Environment and Safety

JSR has developed and operates an "Occupational Health and Safety Management System" that establishes regulations and procedures concerning occupational health and safety and the prevention of accidents. Internal audits are conducted within JSR's business establishments to confirm the effectiveness of this management system. Additionally, an auditing team led by the President conducts annual Safety and Environment Audits in plants and laboratories to verify the effectiveness of each business establishment's health-and-safety and security-management activities that are based on the management system.

› [Responsible Care](#)

#### Labor-Management Health and Safety Committees

Once a month, each of the business establishments in JSR and domestic Group companies hold a labor-management health and safety committee meeting in accordance with the Industrial Safety and Health Act.

Representatives of both the company and employees attend the meetings. The labor side presents its views on important matters, such as measures to prevent hazards to workers and health problems (i.e., the causes of workplace accidents and measures to prevent their recurrence). Then both sides work together to prevent workplace accidents.

## 3. Medium-Term Plan for Health & Safety and Security Management

We have been comprehensively reexamining our safety activities and business establishments' operations ever since a serious workplace accident in 2014. Using a two sided approach comprised of "safety infrastructure" (equipment, organization, and mechanisms) and "safety culture" (people and climate), we are striving to improve safety in our organization with recognition that "safety infrastructure" + "safety culture" = "safety competency."

"Recreating the safety culture" is presented as a management issue in JSR's medium-term plan. We therefore aim to develop human resources possessing strong awareness of safety and to create accident-free workplaces that are safe and secure.

### JSR Roadmap for Health & Safety and Security Management

	2014		2015		2016		2017		2018		2019		2020		2021		2022			
	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	
Safety competency improvement step	<b>1st Step</b> • Development of a foundation for preventing major workplace accidents • Identification of safety foundation and safety culture-related issues in project activity leadership				<b>2nd Step</b> • Development, maintenance, operation, and establishment of the safety foundation • Rebuilding of the safety culture (safety awareness, hazard recognition, passing on of skills, etc.) under managers' leadership				<b>3rd Step</b> • Penetration of safety values among employees and enhancement of human resources development/organizational strength • Maintenance of the safety foundation and improved efficiency with new technology				<b>4th Step</b> • Penetration of JSR's safety culture among all companies and employees • Continuous maintenance and improvement of the safety foundation with the latest technologies							
Safety culture improvement objectives (Based on the Bradley Curve's classifications)	<p>Color coding indicates penetration with the passage of time</p> <p>Reactive (2014-2016) → Dependent (2017-2019) → Independent (2020-2021) → Interdependent (2022)</p>																			

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. Occupational Health and Safety Initiatives

### (1) Numerical Targets and Priority Activities

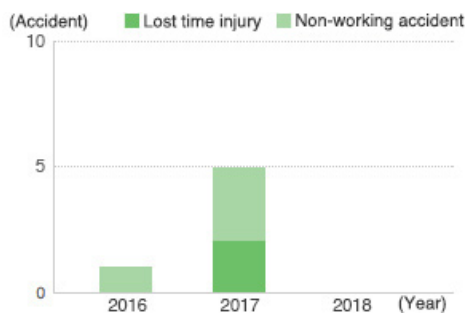
Using the JSR Roadmap for Health & Safety and Security Management, we implement activities by establishing action plans comprised of annual targets, annual policies, and priority measures that take into account actual performance and activities of the previous fiscal year. In FY2018, we focused attention on “elimination of unsafe behaviors” and “Stratified safety education” with the aim of finishing the year to “Zero workplace accidents (lost time accidents).”

### (2) Workplace Accident Record

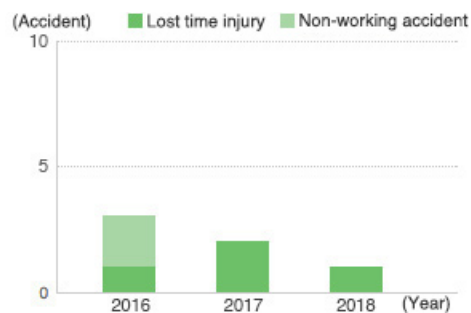
No lost time accidents nor non-lost time accidents affecting JSR employees occurred in FY2018. Among our manufacturing partners, there were no lost time accidents; however, there was one lost time accident.

> [Details: ESG Data \(PDF 1,673KB\)](#) 

**Number of Workplace Accidents (JSR)**



**Number of Workplace Accidents (Manufacturing Partners of JSR)**

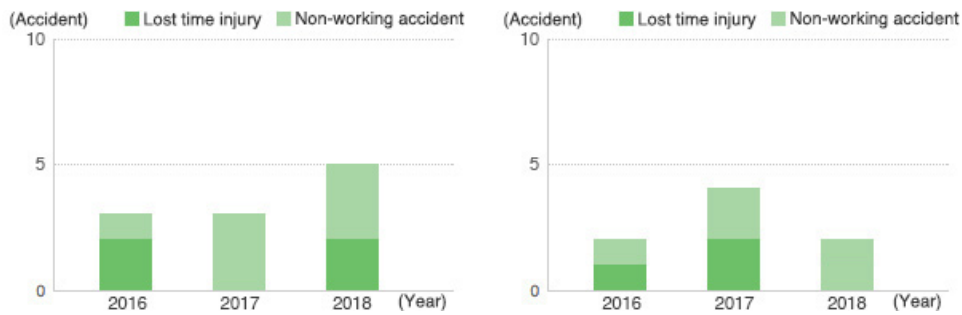


Among domestic Group companies, there were two lost time accidents and three non-lost time accidents in 2018. Among the manufacturing partners of domestic Group companies, there were no lost time accidents; however, there were two non-lost time accidents. Among domestic Group companies, an increasing trend is seen in terms of both the number of all workplace accidents and the number of lost time workplace accidents. Accidents involving tripping, falling, and entanglement are increasing.

Among overseas Group companies, workplace accidents continue to occur in a manner similar to that seen with domestic Group companies. We will make pertinent improvements by deepening collaborative safety activities throughout the entirety of JSR Group.

**Number of Workplace Accidents (Domestic Group Companies)**

**Number of Workplace Accidents (Manufacturing Partners of Domestic Group Companies)**



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

### (3) Activities in FY2018

#### Accident Prevention

Our activities in FY2018 focused on initiatives for improving hazard awareness while continuing efforts to penetrate “safety first” values among all employees. We promoted activities to eliminate unsafe behaviors that were matched to the circumstances of business establishments, which produced apparent effects in terms of employees’ notice of potential hazards. For this reason, we will present these activities to Group companies for implementation.

Although the number of workplace accidents is decreasing for JSR, such accidents continue to occur among Group companies. Within this trend, there is a continuous tendency whereby many accidents involve inexperienced young employees and veteran employees. We will therefore strive to realize accident-free workplaces by reinforcing efforts matched to the characteristics of each generation and by boosting collaborative safety activities between JSR and its manufacturing partners.

#### Promoting Education Matched to the Characteristics of Age Groups Prone to Workplace Accidents

We developed and began using curricula for hazard awareness skills improvement training that are designed for inexperienced young workers and physical limitations checks that are designed for veteran workers.

Hazard Awareness Skills Improvement Training for Young Workers	
Purpose	To improve hazard awareness skills by providing hazard awareness training based on understanding of the causes of workplace accidents
Target	Young employees whose period of service with the company is between six months and one year
Period	Underway since Jan. 2019
Content	Lecture → individual study → group exercise and discussion
Assessment	Training effects (individuals): To be ascertained from the results of exercises and questionnaires

Physical Limitations Checks for Veteran Employees	
Purpose	To encourage recognition of own situation by checking physical limitations that can lead to falling (questionnaire and measurement)
Target	JSR employees, employees of a manufacturing partner, and other persons who are at least 50 years old, affiliated with an operations department, and work onsite
Period	Between mid-November 2018 and the end of February 2019

Content	Pre-questionnaire (9 questions) Physical function measurements (5 items)
Assessment	Five-stage evaluation of measured values

#### (4) Looking to FY2019

We will aim to finish FY2019 with zero workplace accidents (i.e. lost time accidents).

To that end, we will strengthen our activity support and guidance for Group companies that had many workplace accidents and also continue our effort to eliminate unsafe behaviors. Moreover, we will work to prevent workplace accidents by expanding use of the curricula for stratified safety education that we began in FY2018.

##### Safety Initiatives of Comprehensive Disaster Prevention Councils

Within each plant of JSR and domestic Group companies, a Comprehensive Disaster Prevention Council (normally referred to as "Disaster Prevention Council") is set up with manufacturing partners that carry out construction and various operations in company facilities. The two sides team up to smoothly promote occupational health and safety activities.

##### Introduction of Disaster Prevention Councils' Safety Activities

- **Council-organized safety education**

Disaster Prevention Councils provide group education to safety instructors of member companies using workplace accident case studies. They also provide hands-on safety education and hazard-prediction training (KYT).



- **Activities timed with National Safety Week**

Disaster Prevention Councils raise safety awareness during National Safety Week by holding safety conferences, presenting safety activity reports prepared by subcommittees and member companies, and presenting awards for safety slogans. They also urge employees to engage in safe behavior by organizing active communication campaigns in the workplace.



- **Special patrols**

Disaster Prevention Councils conduct "special patrols" led by council executives during periodic repair work.



## 5. Security and Accident Prevention Initiatives

### (1) Numerical Targets and Priority Activities

Based on the JSR Roadmap for Health & Safety and Security Management, we conducted safety inspections of our plants using HAZOP<sup>\*1</sup> and other methods to enhance our management of process accident risks and executed both infrastructure- and human-based countermeasures to important and major risks with the aim of finishing the year with "zero facility accidents (i.e. abnormal phenomena stipulated in the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities) in FY2018."

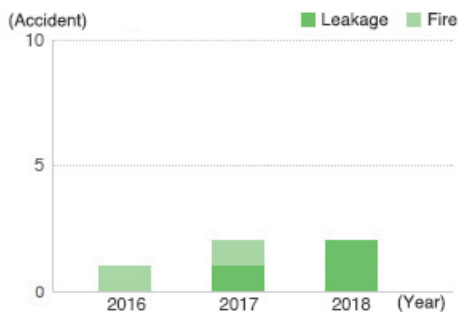
\*1 Abbreviation of "Hazard and Operability Study." It is a method of safety assessment used to identify hazards in processes and operations.

## (2) Facility Accident Record

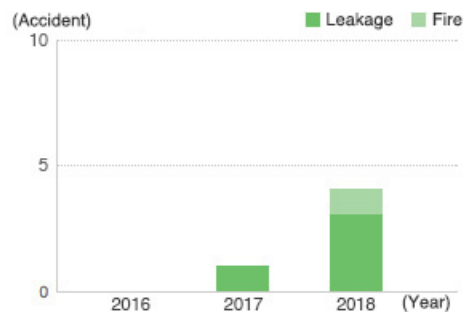
As listed below, the number of facility accidents at JSR in 2018 was two (both leaks) and the number at Group companies was four (one fire and three leaks). This information is reported to the government in compliance with the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities. Holes caused by corrosion on pipelines were the main cause of the leaks. We are therefore putting priority on measures to address facility corrosion.

> [Details: ESG Data \(PDF 1,673KB\)](#) 

**Number of Facility Accidents (JSR)**



**Number of Facility Accidents (Group Companies)**



As with 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 analyses, with the results being applied to education. Through these actions, JSR continues its effort to prevent occurrence of similar accidents in the future.

## (3) Activities in FY 2018

### Accident Prevention

Leakage accidents are increasing throughout JSR Group. Thus, measures against facility corrosion and deterioration have utmost importance at each business establishment. We are therefore checking the soundness of concerned facilities and making repairs with priority on those facilities having high risk in the event of a leakage. In addition, we began project activities aimed at eliminating leaks by reviewing our inspection and construction methods, with priority on pipe frame contact points.

We are working to prevent accidents by continuing to use HAZOP and implementing measures to address hazard risks that are uncovered and identified in our plants.

### Preparations for Large Earthquakes

We adopted a mid-term business plan in FY1995 concerning preparations for a large earthquake and have been conducting systematic activities to enhance those preparations. Since FY2006, we have been doing seismic construction focused on high-pressure gas facilities in our plants based on the results of seismic performance assessments. We also installed earthquake early-warning systems at all JSR business establishments sites under the idea that "human lives first."

Moreover, after the Great East Japan Earthquake prompted us to review the size of assumed earthquakes, we formulated safety measures that included enhancement of seismic resistance and tsunami countermeasures. We are currently implementing those measures systematically.

We will continue systematic seismic reinforcement work on spherical tank braces with an eye to completion in FY2020.

The Yokkaichi Plant Administration Building, completed in December of 2013, takes first-rate seismic measures. It can withstand earthquakes of up to 600 Gals using two types of seismic isolator: laminated rubber and oil dampers. In addition, a lattice structure ground improvement method was used to prevent liquefaction. This building has warehouses for disasters and ensures enough space to relocate headquarter functions in the event of a disaster in metropolitan Tokyo. The building also functions as the Yokkaichi City Tsunami Evacuation Building for local residents.

**Yokkaichi Plant Clean Room Building C**

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

**(4) Looking to FY2019**

We will aim to finish FY2019 with “zero facility accidents (abnormalities stipulated in the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities).

We will systematically and steadily execute both infrastructure- and human-based measures to address important and serious risks, including natural disasters, to achieve this goal. We will also continue activities aimed at preventing accidents caused by aging equipment.

**6. Common Activities of Occupational Health and Safety and Security Management**

**(1) Promotion of Risk Assessment**

An important basis for process safety and workplace safety 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**

	Facility accidents	Workplace accidents	
Items for evaluation	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) Health & Safety and Security Management Education**

JSR strives to improve employees’ knowledge, skills, and sensitivity by providing education on occupational health and safety in new employee training, mid-career employee training, and leadership training that is in addition to that legally required under the Industrial Safety and Health Act. Additionally, we improve knowledge, skills, and sensitivity pertaining to security management through hands-on safety and practical-skills courses in technical education and “miniature plant” training.



During FY2018, education on manufacturing skills common to all plants was provided 50 times at the Yokkaichi Training Center 50 times and attended by 593 employees. Additionally, “miniature plant” training was held at the same training center 6 times and attended by 75 employees.

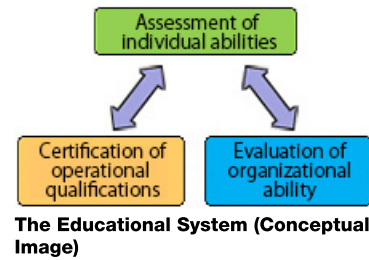
### (3) Organization and Education for Stable Plant Operation

#### Review of manufacturing-related organization and operations

In FY2017, we reviewed the necessary number of people in each manufacturing section and then divided organizations and expanded staffs so that managers can fully grasp their members. Workplace communication is improving as a result. We will continue ascertaining the effects of this organizational change and also look at how functions and roles are divided with other concerned departments.

#### Assessment of individual and organizational abilities

We have set desired levels for each rank 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.



### (4) Safety Ceremony and Safety and Health Activity Forum

In FY2018, we held a Safety Ceremony and Safety and Health Activity Forum on July 19. The Safety and Health Activity Forum is an annual event in which we select presentation themes after carefully screening safety activities that were nominated by each business establishment. The following presentations were made in FY2018. After the presentations, a panel discussion was held by the presenters and became the scene of a lively discussion on ways of eliminating unsafe behaviors.

#### Presentation Themes of the FY2018 Safety and Health Activity Forum:

Presenting group	Title	Content
Kashima Plant Manufacturing Dept.	Verification of deviation in irregular operations through the “Sangen Shugi” principle	In hazard prediction using irregular worksheets, periodically reviewing irregular worksheets by young employees, veterans, and managers can help prevent troubles and accidents in irregular operations because it passes on “know-how” and “know-why” skills to young employees and improves their hazard awareness.
Chiba Plant Manufacturing Technology Dept.	Reinforcing safety sensitivity: What do we need now?	As employees are rapidly becoming younger, we developed safety sensitivity, reinforced education, and focused on our own weak points identified from the results of a safety culture questionnaire. 1) Improving behavior concerning close calls: “Don’t pretend not to see!” 2) Expanding hands-on education: “Seeing is believing!” 3) Always having a computer on hand brings peace of mind!”
Yokkaichi Plant Manufacturing Dept.	Improving safety management skills by utilizing ICT	We successfully improved safety management skills by utilizing tablet computers for daily inspection records and equipment management at manufacturing sites. Specifically, we used the tablets in 1) training on initial actions when a problem occurs (“what would you do?” training), 2) training for in-depth investigation of problems (troubleshooting meetings), and 3) development of safety indicators and signs.
Yokkaichi Plant Manufacturing Dept.	Improving the Power Section’s emergency response abilities and	We implemented activities to improve the Power Section’s emergency response abilities and create a safety-conscious



	creating a safety-conscious workplace environment	workplace environment. Specifically, we focused on 1) training on initial actions when a problem occurs (“what would you do?” training), 2) training for in-depth investigation of problems (trouble shooting meetings), and 3) development of safety indicators and signs.
Yokkaichi Plant Manufacturing Dept.	Sharpening “ability to think”	In light of the many instances of human error (errors in judgment) that have occurred, we provided training in FY2017 to sharpen “ability to think” and thereby give employees the judgment skills needed to respond flexibly to unexpected safety situations. This training was in addition to traditional “thinking” education. Specifically, we focused on 1) hazard prediction training (KYT), 2) experience dealing with problems through actual equipment training, and 3) animating work standards.

## (5) Safety Competency Assessments by the Japan Safety Competency Center

The Kashima Plant, Chiba Plant, and Yokkaichi Plant received third-party “safety competency assessments” by the Japan Safety Competency Center. As a result of the assessments, it was confirmed that the Kashima Plant and Chiba Plant, which each underwent their second assessment, had improved in terms of both their safety infrastructure and safety culture compared to their assessments of four years ago. The assessments also identified areas in which each plant will need to make improvements. We will improve our safety competency by reflecting the assessments’ results on future activities.

**We will address safety with renewed recognition that “safety is of utmost importance to everyone working in manufacturing and the bedrock of our business activities.”**

JSR Group believes that safety is linked to the daily lives of all stakeholders and the bedrock of business activity. With this in mind, JSR Group has made it a goal to achieve zero facility accidents and zero accidents requiring time off from work. However, a serious workplace accident occurred at the Yokkaichi Plant in 23 July 2014.

With a pledge to aim for “zero accidents” and keep lessons learned from this serious workplace accident alive, and with a promise to continue developing a strong safety culture to protect precious lives, we erected a safety monument in front of the Yokkaichi Plant’s main building and also hold a safety ceremony as well as a forum for safety activities by business establishments each year at around the time of the accident.



**The safety monument**

## Social Issues Attributable to JSR Group's Corporate Activity

### Chemical and Product Safety

- ↓ [1. Philosophy and Advancement Structure](#)
- ↓ [2. Chemical Management](#)
  - (1) Compliance
  - (2) Response to Overseas Regulations Concerning Exported Chemicals, etc.
  - (3) Industrial and International Measures
  - (4) Initiatives in Supply Chain Management
- ↓ [3. Product Safety](#)
  - (1) Product Liability Prevention (PLP) Guiding Principles
  - (2) Product Liability Prevention (PLP) Activities

## 1. Philosophy and Advancement Structure

Under its CSR advancement scheme, JSR Group advances measures pertaining to chemical management and product safety based on promotion items and concrete action plans founded on those items that are established by the Responsible Care Advancement Committee.

> [“Responsible Care” 2. Advancement Structure](#)

## 2. Chemical Management

### (1) Compliance

#### 1) Response to the Amended Chemical Substances Control Act<sup>\*1</sup>

The Chemical Substances Control Act was revised in 2017, and a revised portion concerning the confirmation system for low volume new chemical substances and low production volume new chemical substances came into effect as part of this revision in 2019. JSR is responding to this revision by submitting use certificates/structural files for each required substance. Moreover, as for the lower number of applications arising from the anticipated discontinuation of applications in line with the revision's intent, we responded without problem from the very first application by coordinating with in-house education (e.g., at business departments, research centers and laboratories, etc.) beforehand.

<sup>\*1</sup> Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

#### 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) 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.

### **4) Education on Chemical Substance Regulations**

JSR provides in-house training on chemical substance regulations in Japan and abroad. In FY2018, we held seminars on important domestic law and handling US exports at the head office and business establishments to which Group companies were also invited. A total of 102 people participated.

## **(2) Response to Overseas Regulations Concerning Exported Chemicals, etc.**

Chemical products laws and regulations are being strengthened in countries around the world ahead of 2020, which is the target year for meeting an international goal.<sup>\*2</sup> Since 2018, it has become necessary to promote the registration of existing chemical substances in South Korea, Taiwan, Turkey, and other countries. JSR will implement responses without omission in a manner that corresponds to project descriptions and local subsidiary systems. Additionally, regarding Europe's REACH,<sup>\*3</sup> whose definitive registration work came to a momentary pause in 2018, we made necessary responses that included upgrading our dossiers and studying ways of dealing with Brexit.

<sup>\*2</sup> WSSD 2020 Goal (long-term goal for chemical substances management that was adopted by the 2002 World Summit on Sustainable Development): Minimization of significant adverse effects on human health and the environment by 2020

<sup>\*3</sup> REACH is an EU law for the "Registration, Evaluation, Authorisation and Restriction of Chemicals"

## **(3) Industrial and International Measures**

JSR is a member of the Japan Chemical Industry Association (JCIA) and contributes to its activities. JSR's contribution includes participating in JCIA's working groups, promoting activities of its Long-range Research Initiative (LRI)<sup>\*4</sup> as a voluntary effort by the chemical industry, and providing a part of research funding.

<sup>\*4</sup> 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 six issues: (1) development and evaluation of the new risk assessment method/development of methods for simple exposure evaluation and alternatives to using laboratory animals; (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.

## **(4) Initiatives in Supply Chain Management**

At JSR, we practice chemical management simultaneously with CSR/sustainable procurement, green procurement, and green purchasing as part of our supply chain management. Please access the links for details.

- › [CSR/Sustainable Procurement](#)
- › [Green Procurement](#)
- › [Green Purchasing](#)

### 3. Product Safety

JSR strives to offer quality products and services that both meet customer requirements and ensure user safety based on this product safety policy: “Verify safety at all stages, from raw materials to finished products, protecting the health and property of all individuals involved.”

#### (1) Product Liability Prevention (PLP) Guiding Principles

Maintaining respect for humanity, JSR does business with based on the following PLP Guiding Principles

- Social mission:  
The company's social mission is to pursue safety in the products it supplies and to ensure the safety and health of those who use them.
- Customer trust:  
Activities that unflinchingly execute PLP and continually supply safe products lead to customer trust.
- Prevention:  
The essential point of PLP is to take all possible preventative measures to ensure that product accidents do not occur.
- Company-wide activity:  
PLP activities are executed through collaboration among concerned departments and with the combined strength of JSR and JSR Group.

#### (2) Product Liability Prevention (PLP) Activities

In 1994, JSR enacted its Product Liability Prevention (PLP) Standards to reinforce product safety efforts. Since then, JSR has taken steps to prevent PLP risk by making revisions to the standards as necessary and establishing regulations for each part of the supply chain; namely, design and development, manufacture, sales, and distribution.

As we expand our business categories to include the elastomer business, which includes tire materials; the digital solutions business, which includes semiconductor materials and display materials; and the life sciences business, we have become a materials manufacturer that meets the demands of a diverse range of customers who have different needs. As such, we focus on reviews at the design stage.

At the design and development stages, we work to prevent the occurrence of PLP risk by conducting ordinary design reviews and also preparing a “PLP check sheet.” With this PLP check sheet, we are building a system whereby we conduct multifaceted safety checks on new products to be introduced to the market that start at the product design stage. A product only goes on the market after it has been approved by the department manager. For us, PLP activities are the basis upon which we grasp the standards our customers demand and raise the reliability of our products. Group companies are currently taking similar steps.

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

We use safety data sheets (SDS) to provide customers with information on the dangers and toxicities of our projects.

- › [Safety Data Sheets \(SDS\)](#)

## Social Issues Attributable to JSR Group's Corporate Activity

# Logistics Safety

- ↓ [1. Policy](#)
- ↓ [2. Safety Initiatives](#)
- ↓ [3. Accidents in FY2018](#)

Cooperation that goes beyond JSR's business establishments to include the entire supply chain is important in maintaining and improving the environment, safety, and quality in logistics. JSR Group makes various efforts to ensure the safe and environment-friendly transport of products.

## 1. Policy

Each year, JSR executes activities to manage risks and ensure safety after formulating a health and safety promotion plan at each plant based on the Philosophy and Course of Action for Occupational Health and Safety.

We formulate these plans based on actual results and issues from the previous fiscal year from the standpoint of the PDCA cycle and then implement activities with the aim of eliminating logistics and workplace accidents.

- ▶ [Philosophy and Course of Action for Occupational Health and Safety, which includes items pertaining to logistics safety](#)

## 2. Safety Initiatives

### (1) Identification and Improvement of Risks

We strive to improve the safety of our logistics sites by identifying risks for logistics and workplace accidents in terms of both the human and infrastructure sides—such as hazardous operations and locations within worksites—and making improvements. One way we do this is through regular patrols by managers.

### (2) Cultivating and Spreading Safety Awareness

We provide hazard prediction training (KYT) to raise awareness of potential risks without carelessness or overconfidence, even in routine and familiar tasks, and improve sensitivity to hazard prediction. We also broadly solicit safety slogans from logistics partners to cultivate and instill safety awareness in each worker.

### (3) Enhancing Education and Training

In addition to horizontally-implemented preventative education on logistics and workplace accidents that includes examples from other companies, we strive to improve employees' ability to respond to crises and safety awareness by jointly providing training that envisions major disasters and logistics accidents with logistics partners. Additionally, whenever points requiring improvement arise after training, we enhance the quality of our education

and training by revising crisis management manuals, incorporating improvements into subsequent training, and the like.

#### **(4) Maintaining Transport Safety and Environmental Standards**

JSR outsources the distribution of its products to outside logistics partners. To maintain environmental and safety standards during transport, we have drivers carry a "Yellow Card" imprinted with special measures and telephone numbers in case of emergency, in addition to having logistics partners train them on specific safety issues.



**Example of a Yellow Card**

#### **(5) Reinforcing Health and Safety Collaboration with Logistics Partners**

We share logistical challenges concerning quality, safety, and the environment and manage the progress of improvement activities by holding quarterly meetings with logistics partners through our logistics subsidiaries. We also verify, assess, and guide health and safety activities by conducting annual audits of our logistics partners.

### **3. Accidents in FY2018**

Logistics-related workplace accidents: 0

Traffic accidents resulting in injury to others: 0

Traffic accidents resulting in injury to JSR employee: 0

## Social Issues Attributable to JSR Group's Corporate Activity

# Quality Management

JSR Group is committed to building a quality management system and quality assurance with the aim of providing customers with products of reliable quality that they can use with peace of mind.

- [↓ 1. Philosophy and Advancement Structure](#)
  - (1) Philosophy
  - (2) Structure and Persons in Charge
- [↓ 2. Quality Assurance](#)
  - (1) ISO 9001 Certification
  - (2) Global Quality Guidelines
  - (3) "Building in" Quality
  - (4) Quality Improvement
  - (5) Quality Audits
  - (6) Quality Education
- [↓ 3. Looking Ahead](#)

## 1. Philosophy and Advancement Structure

### (1) Philosophy

JSR Group' Corporate Mission is "Materials Innovation - We create value through materials to enrich society, people and the environment." Moreover, the Group's Management Policies set forth "emphasis on improving customer satisfaction" and "continuous increase in customer satisfaction" as basic policies concerning quality for the entire company. 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.

### (2) Structure and Persons in Charge

JSR Group has established a "Group-wide Quality Policy Committee" as an organization charged with formulating quality policy and quality assurance promotion plans. The Group proceeds with business based on these plans.

Group-wide Quality Policy Committee
Chair: Director in charge of quality assurance
Office: Product Safety & Quality Assurance Department
Roles: Study and deliberation of matters concerning quality policy and quality assurance promotion plans.

## 2. Quality Assurance



## (1) ISO 9001 Certification

JSR Group supplies customers with chemicals and other diverse products and services. To continuously deliver reliable quality in all of our products and services, we give full attention to quality management each day and also continually strive to further improve quality under a management framework that is based on manufacturing and quality management standards (ISO 9001<sup>\*1</sup>).

We acquire ISO 9001 certification at all of our main plants and business establishments (including relevant divisions and indirectly involved departments). Established at each certified business establishment has a Quality Assurance (QA) Advancement Committee that is led by the plant manager or senior management. Items addressed by this committee include activities to improve quality levels, measures to prevent quality deficiencies, development of CS activities,<sup>\*2</sup> and reporting of quality abnormalities. The information the committee collects is stratified and put to use in preventing the recurrence of problems having the same root cause. CS activities receive particular attention. Customer complaints as well as quality issues that did not go so far as to generate complaints are stratified and analyzed, and the results are applied to the prevention of complaints and problems. Constantly grasping and analyzing quality risks is useful in eradicating quality-related complaints and problems. We strive to prevent and stop recurrence and emphasize activities to prevent quality problems through an organization-wide approach. In this way, the process extending from problem discovery to recurrence prevention measures operates as a PDCA cycle.

\*1 ISO 9001: An international standard for quality management systems that was issued by the International Organization for Standardization (ISO)

\*2 Customer Satisfaction (CS) activities: Activities to gain customers' satisfaction by meeting their expectations, to create a better relationship with customers and build trust with them, and to link that relationship to sales.

### ISO 9001-certified plants

Japan (11 companies, 18 business establishments)	Certification No.	Date of certification (date of renewal)	Date of expiry
JSR Corporation	-	-	-
Yokkaichi Plant	JQA-0396	February 9, 1994 (February 9, 2019)	February 8, 2022
Chiba Plant	JQA-QMA14571	May 11, 2012 (September 1, 2017)	August 31, 2020
Kashima Plant	JQA-QMA14580	May 18, 2012 (December 8, 2018)	December 7, 2021
JAPAN COLORING CO., LTD.	NQA-16100028A	March 19, 1996 (February 21, 2017)	March 18, 2020
Techno-UMG Co., Ltd.	-	-	-
Yokkaichi Plant	JCQA-0700	May 15, 2000 (May 15, 2018)	May 14, 2021
Ube Plant	JCQA-1508	July 19, 1994 (July 19, 2018)	July 18, 2021
Otake Plant	JCQA-1508	July 19, 1994 (July 19, 2018)	July 18, 2021
Japan Butyl Co., Ltd.	-	-	-
Kawasaki Plant	0105	November 28, 1995 (January 27, 2018)	January 26, 2021
Kashima Plant	0105	November 28, 1995 (January 27, 2018)	January 26, 2021

JM Energy Corporation	JP15/062714	May 29, 2009 (May 29, 2018)	May 29, 2021
JSR Life Sciences Corporation	JP13/062551	November 23, 2010 (July 27, 2018)	November 23, 2019
ELASTOMIX Co., Ltd.	-	-	-
Yokkaichi Plant	JCQA-1699	February 24, 1997 (February 24, 2018)	February 23, 2021
Tokyo Plant	JCQA-1699	February 24, 1997 (February 24, 2018)	February 23, 2021
Shiga Plant	JCQA-1699	February 24, 1997 (February 24, 2018)	February 23, 2021
JSR Logistics & Customer Center Co., Ltd.	JQA-0396	February 9, 1994 (February 9, 2019)	February 8, 2022
KRATON JSR ELASTOMERS K.K.	JCQA-0897	April 16, 2001 (April 16, 2019)	April 15, 2022
JSR Micro Kyushu Co., Ltd.	JQA-3163	March 12, 1999 (January 13, 2018)	January 12, 2021
Emulsion Technology, Co., Ltd.	NQA-16050168A	November 30, 1998 (January 21, 2019)	November 29, 2019
<b>Overseas (9 companies, 9 business establishments)</b>	<b>Certification No.</b>	<b>Date of certification (date of renewal)</b>	<b>Date of expiry</b>
ELASTOMIX (THAILAND) CO. LTD. (Thailand)	TH11/5778	June 17, 2011 (June 17, 2017)	June 17, 2020
JSR Micro Korea C., Ltd. (South Korea)	FM 88265	October 11, 2004 (September 18, 2017)	September 27, 2019
JSR Micro, Inc. (U.S.A.)	10305	April 17, 1998 (March 18, 2019)	March 17, 2022
JSR Micro N.V. (Belgium)	BE91/03002	October 1, 2004 (October 1, 2016)	September 30, 2019
Tianjin Kuo Cheng Rubber Industry Co., Ltd.	80117002/1	September 2002 (March 14, 2018)	March 13, 2021
Kumho Polychem Co., Ltd. (South Korea)	42395-2008-AQ-KOR-RvA	December 2, 2008 (November 20, 2017)	November 20, 2020
JSR Micro Taiwan Co., Ltd. (Taiwan)	TW18/00169	March 14, 2007 (February 26, 2018)	February 26, 2021
JSR BST Elastomer Co., Ltd. (Thailand)	10102215	June 9, 2014 (June 16, 2018)	June 8, 2020
PT.ELASTOMIX INDONESIA (Indonesia)	2016-1-0181	January 2016 (September 7, 2018)	September 6, 2021

## (2) Global Quality Guidelines

As its development, purchasing, production, and sales all become more globalized, JSR Group recognizes that its philosophy vis-à-vis quality in the continual pursuit of “Materials Innovation” must be shared throughout the Group, and that any divergence from that philosophy must be prevented. For this reason, we are formulating guidelines for

the sharing of basic thinking and mechanisms concerning quality management that JSR Group can rely on (e.g., elimination of differences and variations in thinking concerning quality management, application of shared language).

With these Global Quality Guidelines, we are promoting the sharing of basic thinking and mechanisms and presenting examples that illustrate quality management methods that are indispensable to “manufacturing,” which is the “soul” of our company. They include responses to quality abnormalities in design reviews for planning (e.g., of business models) and product design, contractor management, test management, logistics management, and global emergency response system. Additionally, we are focused on building a quality management system that includes not only JSR Group’s overseas production bases but also contractors and business partners. Such a system will permit us to supply products and services of reliable quality continually and globally throughout the entire supply chain, from product planning, design and development to mass production and customer service. To respond to JSR’s push into global and widespread fields, and to respond to supply chain diversification and increasingly sophisticated customers’ needs that are occurring as a result, we will continue reinforcing our global quality assurance system.

### **(3) “Building in” Quality**

JSR Group builds in quality by conducting verifications and tests using quality control methods matched to product characteristics in each of the steps of development and design, manufacture, and quality assurance.

For example, we use Quality Function Deployment<sup>\*3</sup> (QFD) as a means of managing product quality. In addition, when starting the production of a new product or making changes or improvements to a manufacturing process, we make it a point to begin actual work only after conducting verifications that predict abnormalities using Failure Mode and Effect Analysis<sup>\*4</sup> (FMEA) to ascertain risks. In this way, we repeatedly analyze risk while making verifications of prevention—for example, we ask, “Are we providing the quality demanded by the customer?” and “Can quality be maintained in mass-production?”—so that we can be sure that no product defects will occur. Moreover, we strive to achieve quality consistency in manufacturing by using Statistical Process Control (SPC).

\*3 Quality Function Deployment (QFD)

A design approach aimed at making quality assurance possible by bring the design quality of a supplied product to the manufacturing process.

\*4 Failure Mode and Effect Analysis (FMEA)

A systematic method for analyzing potential accidents and defects in order to prevent accidents and defects.

### **(4) Quality Improvement**

JSR Group adds the “Six Sigma methods.”<sup>\*5</sup> a quality control approach that reduces product defect rates based on statistical data analyses, to its traditional quality control (QC) methods. The Group is steadily producing results by promoting the use of both in quality improvement activities. Moreover, the Six Sigma methods also form the foundation for cultivating a culture of data-driven thinking in preparation for coming digitalization. We are working to build each employee’s awareness of this point.

\*5 The Six Sigma methods

A quality improvement method that was developed by Motorola of the United States in the 1980s. It seeks to suppress quality deficiencies and improve quality by controlling variability with focus on the processes by which variability occurs.

### **(5) Quality Audits**

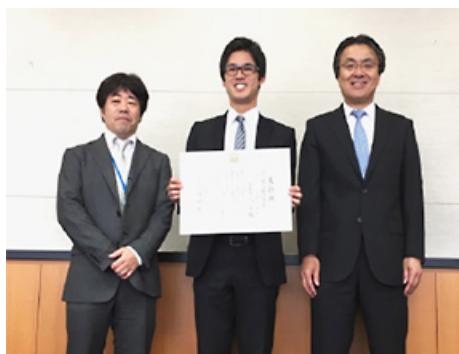
As a manufacturer, JSR Group has responsibilities to meet the quality, cost, and supply requirements of its customers. To fulfill these responsibilities, top management-led quality performance audits have been performed annually since FY2012 in place of the previously conducted head office quality audits. 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 seventh Quality Performance Audits were conducted at JSR’s three plants in January and February of 2019 with the specific aims of pinning down the true causes of quality problems and achieving the best possible balance among quality, cost, and stable supply.

In addition, we implement internal quality audits and external quality audits for the purpose of improving our quality

management system. We strive to improve quality control activities and frameworks in all quality audits with a view to achieving higher customer satisfaction.



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



**Presentation of a Quality Performance Audit's "highest excellence" award (at JSR Corporation's Head Office; March 28, 2019)**

#### **FY2018 Quality Performance Audits**

<b>Place</b>	<b>Date</b>
Yokkaichi Plant	January 31, 2019
Kashima Plant	February 7, 2019
Chiba Plant	February 19, 2019

### **(6) Quality Education**

JSR Group is also working to enhance employee education. In FY2007, we established training centers in our three plants as part of this effort. We are expanding our education program and providing education on quality control and PLP, holding QFD seminars, and implementing product safety training for specific employee classes (employees with the company between 1 and 3 years, employees with the company between 6 and 10 years, and employees who will be/have been promoted to the rank of manager). We also see education oriented toward improving quality levels and preventing product accidents as an important activity. JSR Group will continue to promote better awareness of quality among our employees and pour effort into human resources development in order to improve quality control and meet the sophisticated needs of our customers.

## **3. Looking Ahead**

With “emphasis on improving customer satisfaction” and achieving a “continuous increase in customer satisfaction,” we will continue optimizing our quality management system and improving the quality of our products and services to stay in step with business transformations taking throughout JSR Group. By doing so, we will stay true to our aims of offering innovative materials and excellent products that meet customer needs and contributing to the making of a better society.

## Social Issues Attributable to JSR Group's Corporate Activity

# Human Rights

- ↓ [1. Philosophy](#)
- ↓ [2. Advancement Structure](#)
- ↓ [3. Response to Human Rights Issues](#)
- ↓ [4. Respect for Human Rights in the Labor Environment](#)
- ↓ [5. Respect for Human Rights in the Supply Chain](#)

## 1. Philosophy

As a global company, JSR Group supports the thinking behind the UN Universal Declaration of Human Rights (UDHR), the UN Guiding Principles on Business and Human Rights, and the UN Global Compact and accordingly respects the basic human rights and diversity of individuals. Moreover, we will not discriminate nor permit discrimination on the basis of gender, age, nationality, ethnic group, race, origin, religion, beliefs, social status, physical disability, or sexual orientation.

- > [The Ten Principles of the United Nations Global Compact](#) 
- > [Compliance](#)

## 2. Advancement Structure

We promote respect for human rights as an activity guideline of the Corporate Ethics Committee. The Corporate Ethics Committee is charged with formulating and executing plans to promote human rights and verifying their progress.

- > [CSR Management and Advancement Structure](#)

## 3. Response to Human Rights Issues

### (1) Participation in Global Initiatives

The JSR Group is a signatory and supporter of the United Nations Global Compact. We also participate in the Human Rights Due Diligence Working Group of Global Compact Network Japan and, as such, participate in workshops and gather and disseminate pertinent information within the company.

As a specific activity in FY2019, we participated in a human rights policy group and presented a model case for newly formulating human rights policy under the theme of "our vision of the ideal framework for human rights policy."

At the present time, we have begun applying knowledge we obtained through this activity in a study toward formulation of JSR Group's human rights policy with concerned departments in the company.

› [Corporate Mission and CSR Philosophy](#)

## **(2) Principles of Corporate Ethics**

JSR Group respects human rights and prohibits discrimination by establishing the following code of conduct for human rights and labor in [the JSR Group Principles of Corporate Ethics](#).

### **Code of Conduct for Respecting Human Rights**

- 1) We will respect and uphold basic human rights, such as the Universal Declaration of Human Rights and the UN Guiding Principles on Business and Human Rights, declared internationally and protected under constitution and legal precedents of respective countries, and will not infringe basic human rights.
- 2) We shall never allow child labor or forced compulsory labor, whether at the JSR Group or in the workplaces of business partners and collaborating companies.
- 3) 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.

## **4. Respect for Human Rights in the Labor Environment**

JSR Group respects the human rights of employees by clearly specifying its responsibilities to employees in its management policies.

- 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

› [Labor Environment](#)

› [Diversity](#)

## **5. Respect for Human Rights in the Supply Chain**

JSR Group clearly specifies its responsibilities to customers and business partners in its management policies.

- Act in good faith and maintain fair and equitable business relations
- Continue to be socially and environmentally conscious throughout the supply chain

Specifically, we respect the human rights of our customers and business partners through our supply chain management.

› [Supply Chain Management](#)

## Social Issues Attributable to JSR Group's Corporate Activity

# Labor Environment

- ↓ [1. Philosophy](#)
- ↓ [2. Advancement Structure](#)
- ↓ [3. Organization and Personnel](#)
- ↓ [4. Human Resources Development](#)
- ↓ [5. Work-Life Management](#)
- ↓ [6. Employees Healthy Mind and Body](#)
- ↓ [7. JSR Workers' Union](#)

## 1. Philosophy

We, JSR Group, specify our responsibilities to employees within our management policies.

- 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

## 2. Advancement Structure

We advance initiatives to maintain appropriate labor environments as an activity guideline of the Corporate Ethics Committee.

- > [CSR Management and Advancement Structure](#)

## 3. Organization and Personnel

### (1) Philosophy

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

- 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.
- 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.
- 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) Codes of Conduct**

- We shall ensure the fair treatment of employees, based on each person's tasks, roles, and level of commitment.
- 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.
- 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.
- We shall not force religion and/or belief on others.
- 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.
- In the event that a staff member reports the 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.

## **(3) Rank System**

We have established an ability-based grade system that sets capability grades that correspond to employees' abilities. Moreover, for employees of higher ranks, we also apply a job rank system that establishes ranks that correspond to given duties (i.e., responsibilities in the organization and performance responsibilities).

## **(4) Assessment System**

We conduct assessments by employing two systems. One is an "ability assessment system" that establishes occupational group-specific behavioral standards specifying the specific behavioral characteristics of abilities required for each capability grade in individual occupational categories and then assesses demonstrated abilities based on those standards. And the other is a "objective management system" that assesses the degree to which a person has achieved predetermined objectives.

# **4. Human Resource Development**

## **(1) 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.

## **(2) 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

### (3) Training Programs

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

In the FY2018, the total annual training time per JSR employee was 14.7 hours.

This total was calculated by including technology and skill training, stratified training programs, 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	Assistance to applicants for career transfer	
General Manager, Plant Manager	Training the leaders of tomorrow (JSR Business School)				Specialized knowledge courses								
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			External courses on management strategies							Career-development seminars and education assistance benefits Career and life planning development support seminars MBA and MOT programs etc.	
Project Leader													
Section Manager	Subsection chief training												
Group Leader	Group leader training New supervisor training												
General Employees	Mid-level employee training	<ul style="list-style-type: none"> <li>- General technical skills training</li> <li>- Safety and environmental training</li> <li>- Quality control training</li> <li>- Public certification training</li> </ul>	Basic knowledge training (polymer chemistry, chemical engineering, and chemical processes)	Understanding of JSR's unique technologies	Quality control (levels: introductory and intermediate)	Chemical management, environmental preservation	Intellectual property, contracts	External courses (for graduates) Accounting, finance, marketing and other external courses	Correspondence course (for graduates) English, accounting, finance, marketing, legal affairs, and other correspondence courses	Technical skill courses conducted by individual department			
	New employee follow-up training												
	New employee training												

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)**

## **(4) Career Development Program (CDP)**

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.

## **5. Work-Life Management**

### **(1) 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.

### **(2) Codes of Conduct**

We provide a work environment that facilitates flexible “work-life management” for employees, and strive to improve both productivity and employee satisfaction.

### **(3) 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 advancing 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.

#### **Holding of a Seminar on Work-Style Innovation and Corporate Culture Reform**

On March 4, 2019, we organized a lecture presentation by Mr. Piotr Feliks Grzywacz, a person who has been involved in human resources development and organizational development for many years at Google and Morgan Stanley.

Mr. Grzywacz has written numerous books, among them *Fast Leadership* and *Why Googlers Deliver High Output Without Fatigue?* During the seminar, he spoke about future work styles and approaches to organizational structure while giving participants various projects to tackle.



### **(4) Work Hours Management and Overtime Reduction Initiatives**

The total number of working hours per JSR employee in FY2018 was 1,969 hours. This includes, on average, 220 hours of overtime per employee, per year. We introduced 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.

### **(5) Flexible Working Style Support Benefits**

While life is a series of major events, childcare 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.

We are taking various initiatives to support employees' diverse working styles from FY2019. They include changing the system to allow many employees to work from home, not just those who do so for child-rearing and nursing care, by relaxing work-from-home requirements; starting a by-the-hour annual paid leave system that allows employees to take their annual paid leave in one-hour increments; extending the time employees can work shortened hours for child-rearing and nursing care; and adding more annual paid holidays for young employees (14 days in the first year of employment).

[ESG data \(PDF 1,673KB\)](#) 

#### **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	Employees can work from home one day per week, even in cases not related to child-rearing or nursing care.
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 sixth year of elementary school.
	- Work from home	Employees can work from home one day per week, even in cases not related to child-rearing or nursing care.
	- 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 can work from home one day per week, even in cases not related to child-rearing or nursing care.
	- 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.



**Next Generation  
Accreditation  
Mark "Kurumin"**

**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.



## (6) 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.

> [ESG Data \(PDF 1,673KB\)](#) 

### - 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.

### - 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.

### - 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.

### - 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.

## 6. Employees Healthy Mind and Body

### (1) 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.

### (2) Codes of Conduct

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.

### (3) 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 has introduced a portal site called "KenCoM" as a tool to support efforts to maintain and promote employees' health. Through a point system and events, the society provides services that support health for the purpose of encouraging employees to have fun as they watch their health. We will continue working to strengthen our use of ICT in employees' health management.

**JSR was Recognized under the 2019 Certified Health and Productivity Management Organization Recognition Program.**

JSR was recognized for the third year in a row as one of the "White 500" enterprises under the 2019 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, five members of JSR Group—JSR Micro Kyushu Co., Ltd.; Japan Coloring Co., Ltd.; Elastomix Co., Ltd.; JSR Logistics & Customer Center Co., Ltd.; and JSR Health Insurance Society—were recognized under the Certified Health and Productivity Management Organization Recognition Program for 2019 (SME category).

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.



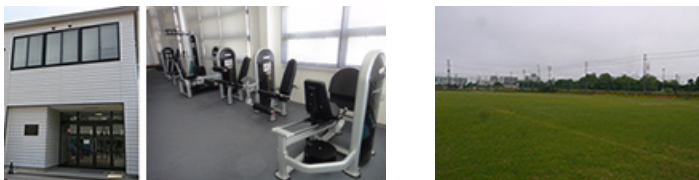
\* The "Certified Health and Productivity Management Organization Recognition Program" examines large enterprises, SMEs and other organizations engaging in initiatives for overcoming health-related challenges in regional communities or for promoting health-conscious activities led by the Nippon Kenko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

#### (4) 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





### **The JSR Health Insurance Society organized an "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, sales, and development departments. Health and exercise instructors with the JSR Health Insurance Society visited JSR's Head Office and Group companies as well as the Nagoya Branch, Tsukuba Research Laboratories, Group companies, and other establishments in various regions. They provided instruction on "refresh stretching" that prevents stiff shoulders and lower back pain, chair yoga, fall-prevention exercises, and exercises to prevent locomotive syndrome to 1,559 employees. 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 90.7% of respondents said they found the Exercise Support Seminar and health exercises 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.



**Chair yoga (JSR Head Office)**

## **(5) 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.

## **7. JSR Workers' Union**

### **(1) Thinking vis-à-vis Workers' Union Activities**

We strive to maintain a relationship with the JSR Workers' Union whereby we can routinely conduct constructive dialogues through regular labor-management councils, meetings concerning the revision of labor agreements, and other opportunities. We also work with the JSR Workers' Union to build better workplace environments with attention to union concerns—namely, “wage policy,” “labor environment policy,” “welfare policy,” “leisure time, public relations, and volunteerism policy,” and “organizational policy.”

## **(2) Codes of Conduct**

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) 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. In FY2018, we worked to build a more comfortable environment through repeated discussions on an extension of the time employees can work shortened hours for child-rearing and nursing care and additional annual paid holidays for young employees.

## **(4) Dialogue between the Workers' Union and its Members**

Union members at each plant represent 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.

## **(5) JSR Workers' Union Membership**

> [ESG Data \(PDF 1,673KB\)](#) 

## Social Issues Attributable to JSR Group's Corporate Activity

### Diversity

#### ↓ [1. Philosophy: Recruitment and Promotion of Diverse Human Resources](#)

#### ↓ [2. Advancement Structure](#)

#### ↓ [3. Advancement Measures and Schemes](#)

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

(2) Promoting the Active Participation of Employees Providing Nursing Care

(3) Promoting the Reactivation of Resigned Employees

(4) Activation of Foreign Nationals

(5) Employment Opportunities beyond Retirement

(6) Support for Employees with Disabilities

## 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.

## 2. Advancement Structure



JSR has established a Diversity Development Office to serve as an organization dedicated to the advancement of diversity. The office's mission 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.

## 3. 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.

- › [Act on Promotion of Women's Participation and Advancement in the Workplace: Action Plan for Promoting the Active Participation and Advancement of Women in the Workforce \(PDF 28KB\)](#) 
- › [Act on Advancement of Measures to Support Raising Next-Generation Children: Action Plan for Advancing Measures to Support Raising Next-Generation Children \(PDF 32KB\)](#) 

#### Active support of Women in the Workforce: Quantitative Targets

	Target	FY2016	FY2017	FY2018	FY2019
Percentage of women hired annually per position	College graduates, engineering positions: 15-20%	15%	20%	18%	23%
	College graduates, administrative positions: 40-50%	60%	50%	45%	50%
Percentage of women in managerial positions	March 2020: 4.5%	3.6%	3.8%	4.1%	4.3%

\* As of April 1st of each fiscal year

- › [ESG Data \(PDF 1,152KB\)](#) 

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

- › [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
- Work Communication Seminar: Managers improve their diversity management skills
- Career Track Transfer Seminar: Employees brainstorm about career possibilities and skill development after changing career tracks within JSR.
- General Career Development Seminar: Non-managerial, general employees develop efficient internal communication skills.

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

## (2) Promoting the Active Participation of Employees Providing Nursing Care

Today, Japan has what is called a "super-aging society"<sup>1</sup>. It is reported that about one in four people in Japan aged 75 or older requires nursing care, and it is thought that the number of employees who are faced with providing such care will increase. JSR offers a variety of support measures that allow employees who provide nursing care to balance that care with their work.

\*1: Super-aging society: A society in which the share of the elderly population aged 65 years or older within the total population exceeds 21%.

- > [Labor Environment](#)
- > [ESG Data \(PDF 1,152KB\)](#) 

### (3) Promoting the Reactivation of Resigned Employees (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 rehire in accordance with company needs and the former employee's desires.

- > [ESG Data \(PDF 1,152KB\)](#) 

### (4) 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.

In FY2018, we set up places of worship in two locations within the Yokkaichi Plant as part of our effort to promote diversity among our human resources.

#### 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	19	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

- > [ESG Data \(PDF 1,152KB\)](#) 

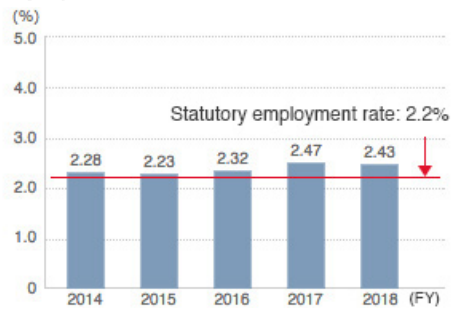
### (5) Employment Opportunities beyond Retirement

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. All of those who wish to continue working are re-employed.

### (6) Support for Employees with Disabilities

As of the end of FY2018, JSR's employment rate of individuals with disabilities was 2.43% (the statutory employment rate is 2.2%). 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.

#### Employment rate of individuals with disabilities



Scope of aggregation: JSR Corporation

## Social Issues Attributable to JSR Group's Corporate Activity

### Supply Chain Management

- ↓ [1. Philosophy](#)
- ↓ [2. Supply Chain Management](#)
  - (1) CSR/sustainable procurement
  - (2) Assessment of business partners
  - (3) Initiatives concerning conflict minerals
  - (4) Education and training of employees in charge of procurement
  - (5) Participation in initiatives concerning CSR/sustainable procurement
- ↓ [3. Green Procurement and Purchasing](#)
  - (1) Green procurement of raw materials
  - (2) Green purchasing of office equipment and supplies

## 1. Philosophy

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. The JSR Group Purchasing 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 our 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.

Additionally, amid recent globalization of the supply chain, issues such as forced labor, child labor, environmental destruction, global warming, and corporate scandals have occurred, and boycotts and demand for improvement are being seen. Such developments are beginning to significant impacts on corporate activities. In response, we revamped and expanded the questionnaire items used for surveying CSR/sustainable procurement in FY2017. We



are now conducting the second round of the survey using this revised questionnaire. Moreover, understanding that engaging in supply chain management in this way brings mutual prosperity to both JSR Group and our business partners, we rearranged the items that JSR Group wants business partners to comply with that appear on the revised questionnaire and newly formulated the “JSR Group CSR/Sustainable Procurement Policy” in December 2018.

We are sequentially distributing the new policy to our business partners and asking them to make it known to their organizations and to practice it.

› [JSR Group CSR/Sustainable Procurement Policy \(PDF 123KB\)](#) 

## **(2) Assessment of business partners**

We regularly confirm that our business partners satisfy assessment standards that we demand. This confirmation takes place when beginning new business with a partner as well as during ongoing business with existing partners. When assessing candidates for new business, we evaluate them based on certain criteria concerning the status of their financial affairs and level of quality management. We also conduct an onsite audit prior to the start of business to verify items concerning safety, the environment, and quality. At the same time, we also reassess business partners with whom we have a continuing business relationship using similar criteria when starting a new transaction with them.

With regard to important raw materials that are difficult to procure in an emergency due to issues concerning availability or scarcity, for example, we strive to secure stable availability for our customers by conducting regular supplier audits and onsite confirmation of items pertaining to supply continuity and providing proposals and guidance for quality reliability.

## **(3) Initiatives concerning conflict minerals**

Our policy based on the above-mentioned Purchasing Policy is to never permit the use of conflict minerals, either directly or indirectly. We continuously verify that we use no conflict minerals with our business partners' cooperation. In FY2015, we conducted an investigation concerning the use of conflict minerals and confirmed that none of the targeted suppliers used them. Since then, we have investigated the use of conflict minerals when acquiring new raw materials or using a new supplier, and have maintained a system that guarantees we do not use conflict minerals.

## **(4) Education and training of employees in charge of procurement**

We recognize that educating and training purchasing department personnel who promote CSR/sustainable procurement, deal with conflict minerals, and handle other actual operations is important for guaranteeing sound supply chain management. We therefore provide introductory education to procurement personnel that are newly assigned to purchasing departments to ensure that they fully understand the JSR Group Purchasing Policy. We also encourage them to acquire the Japan Management Association-accredited Certified Procurement Professional certification (CPP; a qualification certifying that a person has acquired expertise in the purchasing and procurement field) to deepen their understanding of CSR/sustainable procurement and promote their acquirement of more advanced knowledge. We support them in this endeavor by paying the costs of workshops and examination fees.

## **(5) Participation in initiatives concerning CSR/sustainable procurement**

JSR participates in Global Compact Network Japan's Supply Chain Working Group. We utilize knowledge obtained through dialogues with stakeholders to strengthen our CSR/sustainable procurement activities. For example, we apply this knowledge when formulating the JSR Group CSR/Sustainable Procurement Policy and reflect it in questionnaire items used when surveying business partners.

# **3. 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)<sup>\*1</sup> in October 2008, and reviewed of its Green Procurement Guidelines<sup>\*2</sup>. JSR will continue to practice green procurement with an emphasis on disseminating information through the supply chain.

<sup>\*1</sup> 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.

<sup>\*2</sup> 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) in 2018. 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 FY2018, green purchasing represented 200,858,000 yen out of a total of 211,270,000 yen in purchases at all business sites. This is equivalent to a green purchasing rate of 95%.

## Social Issues Attributable to JSR Group's Corporate Activity Communication with Stakeholders (Customers and Business Partners)

- ↓ [1. Philosophy](#)
- ↓ [2. Communication with customers](#)
  - (1) Customer satisfaction questionnaires
  - (2) Responses to CSR questionnaires for our customers
  - (3) Issuance of market reports
  - (4) Receipt of Sysmex's Technology Uniqueness Award
  - (5) Receipt of BOE's Collaborative Innovation Award
- ↓ [3. Communication with business partners](#)
  - (1) Presentation of Suppliers Awards (Digital Solutions Business)
  - (2) Holding of agency meetings and presentation of agency awards (Specialty Elastomer Department, Elastomers Business)

### 1. Philosophy

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, improving product quality, and continually improving 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<sup>\*1</sup> and our customers.

<sup>\*1</sup> 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 Sysmex's Technology Uniqueness Award**

Sysmex, a manufacturer of medical devices, held a 50th anniversary event (Partner Celebration) on November 12, 2018. At this celebration, JSR was awarded Sysmex's Technology Uniqueness Award in recognition of its development and sales of high-quality reagent materials.



**Sysmex's Partner Celebration From left, Mr. Kenji Tachibana, Managing Board Member and Senior Executive Officer of Sysmex; Mr. Eric Johnson, then Managing Officer of JSR; and Mr. Hiroki Ito, General Manager of the Diagnostic & Research Reagents Department of JSR's Life Sciences Division**

#### **(5) Receipt of BOE's Collaborative Innovation Award**

On May 11, 2018, JSR received a "Collaborative Innovation" award from BOE Technology Group Co., Ltd., China's leading LCD panel manufacturer, at the 2018 BOE Supplier Partner Conference held in Hefei, Anhui Province. This award is presented to companies that work with BOE to achieve innovation and breakthroughs and that contribute to BOE's product competitiveness and brand power. JSR was the first to receive it.



**Mr. Keisuke Wakiyama, Division Manager of Display Solution Division, holding the award**

### **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.

## Social Issues Attributable to JSR Group's Corporate Activity Communication with Stakeholders (Employees)

- ↓ [1. Philosophy](#)
- ↓ [2. Progressing Corporate Culture](#)
- ↓ [3. CSR & RC Explanatory Briefings](#)
- ↓ [4. Employee Awards Program](#)
- ↓ [5. Employee Awareness Survey](#)

### 1. Philosophy

- > [Labor Environment](#)

### 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) advancement, 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.

### 3. CSR & RC Explanatory Briefings

#### (1) CSR & RC Explanatory Briefings

Every year, JSR holds RC & CSR explanatory briefings in which officers and managers in charge of specific areas visit each business site. They use the briefings to share the results of activities to advance CSR and responsible care (environment, safety, and quality) and future challenges with employees and to discuss these matters directly with them.

#### CSR & RC Explanatory Briefings held in FY2018

JSR business establishment (including domestic Group companies)	Date
Head office	December 5 and 18, 2018
Yokkaichi Plant	November 29, 2018

Chiba Plant	October 18, 2018
Kashima Plant	October 5, 2018
Tsukuba Research Laboratories	November 22, 2018



**Kashima Plant (October 5)**



**Chiba Plant (October 18)**



**Tsukuba Research Laboratories (November 22)**



**Yokkaichi Plant (November 29)**



**Head Office (December 5 and 18)**



**Q&A session**

## (2) CSR Report Presentation Meetings

JSR holds CSR Report Presentation meetings every year at each site for all domestic divisions, including Group companies and uses them to assist CSR activities. The theme for the 2018 meetings involved the relationship between employees' own department and society. We are analyzing the opinions expressed by each department and feeding the results back to employees.

## 4. Employee Awards Program

We use various awards programs to enhance employees' motivation. Among the awards presented are the President's Award, Production and Technology Award, Research and Development Award, Environment Distinguished Service Award, special commendations, length-of-service commendations, "zero accidents" commendations, the Nice Try Award<sup>\*1</sup> and Nice Support Award.<sup>\*2</sup>

<sup>\*1</sup> Nice Support Award: This 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.

<sup>\*2</sup> Nice Try Award: This award recognizes employees who have helped foster a corporate culture in which all employees are bettering able to take on new challenges without fear of failure.

## 5. Employee Awareness Survey

Every three years since FY2004, we have conducted an employee awareness survey that targets the entire JSR Group. We make fixed-point measurements and provide feedback to all employees, and also reflect the survey's results on the implementation of measures and system design. The Nice Support Award and Nice Try Award programs mentioned above were introduced based on the outcome of an employee awareness survey. 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 FY2016 survey, the most recent, the response rate was high at 96.6%, indicating a tendency toward stronger interest in the company's future. Additionally, employee satisfaction rose



compared to the FY2010 and FY2013 levels, which is believed to show that human resources development that stresses corporate culture reform and dialogue have become part of the corporate culture.

**Examples of survey items:**

- Satisfaction with the company and workplace
- State of motivation to work
- Degrees of understanding and organizational penetration of the Corporate Mission
- Understanding and organizational penetration of diversity
- Understanding and organizational penetration of work-life innovation

## Social Issues Attributable to JSR Group's Corporate Activity

### Communication with Stakeholders (Local / Society)

↓ [1. Dialogues with Local Communities](#)

↓ [2. Social Contributions](#)

(1) Philosophy

(2) Advancement Structure

(3) Approaches in FY2018

## 1. Dialogues with Local Communities

JSR Group is aware of the impact of the activities, products and services of factories and research laboratories on local communities, and promotes symbiosis with local communities. To build favorable relationships with local communities, we are continuing approaches by taking in opinions.

### Responsible Care Participation in Regional Dialogue Meetings

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 FY2018, JSR participated in a regional dialogue meeting held in Yokkaichi District.

▶ [7th Responsible Care Yokkaichi Regional Dialogue](#)

[\(External site You will be directed to the National Institute of Technology and Evaluation\).\(Japanese only\)](#) 

## 2. Social Contributions

### (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) Advancement Structure

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

> [CSR management and advancement structure](#)

## (3) Approaches in FY2018

The following section describes some of our main social and community activities for FY2018.

### 1) Social Welfare Activities

#### - Cooperation with blood donation activities

Blood cannot be stored for a long time, nor can artificial blood be created.

To supply blood to medical institutions in a stable manner and save the lives of as many people as possible, the JSR Group has been actively cooperating with blood donation activities for a long time with both Japanese and overseas bases.

#### - Donations to charity

Through the Cheongwon Ward Office, JSR Micro Korea presented 22 underprivileged, local households with monetary donations raised through an internal bazaar auction. The money was distributed to families selected by the Ward Office, including single-parent households with no income and low-income households with a disabled elderly person living alone.

#### - 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)

#### - 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 NPO. 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.

#### - Participation in aluminum can collection activities

Since October 2010, the JSR Yokkaichi Plant has been participating in aluminum can collection activities for "i-project", an independence support organization for children with disabilities in Yokkaichi City. 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.

#### - 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)**

#### - The Table for Two Program

The JSR Group's Tokyo and Yokkaichi Districts have participated in the TFT program run by the non-profit organization TABLE FOR TWO since February 2010. We have donated approximately 140,000 meals as of the end of March 2019.

TFT is an approach to share meals with children in developing countries. When an employee purchases a healthy meal designated by TFT, 20 yen per meal is donated to buy a school meal for a child in a developing country. School meals not only satisfy children's hunger; they also improve school attendance rates and academic records, improve children's physical fitness and strengthen disease prevention. Results such as formation of a community of schools and parents are expected, and school meals play an important role in solving poverty.

In Yokkaichi City, activities (CUP FOR TWO) that utilize beverage vending machines are ongoing.



## 2) Health and Medicine

#### - 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.

## 3) Academic and Research Programs

#### - 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.

#### - 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 young-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.

#### - Science education for elementary school students

On August 3, JSR exhibited in the "7th Yokkaichi Children's Science Seminar" organized by the Yokkaichi Board of Education. The objective was to raise children's interest in science through experiments. At JSR's booth, approximately 120 children participated in a synthetic rubber coagulation experiment.

In October 2018, JSR held a visiting lecture for 86 students at Utsubehigashi Elementary School in which they learned about global warming through the Yokkaichi Kids' CO2 Diet Challenge.



**Yokkaichi Children's Science Seminar**

**- JSR Kashima Plant - Classes for local junior high school students**

In November 2018, employees from JSR Kashima Plant visited Kamisu Third Junior High School and held a class for 129 second-year students.

Class contents consisted of three experiments—"Rubber manufacturing experience using a coagulant", "Bouncing ball and non-bouncing ball" and "Unbreakable plastic". The peculiarities of the materials and their relationship with molecules were explained in an easily understandable manner.



**Visiting lecture by employees from Kashima Plant**

**- Participation in a program for training skilled workers to lead local industry**

The Yokkaichi Plant accepted 12 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.



**Safety training**



**Practice operation in the miniature plant**

**- 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 September 27, 2018, it presented a course titled "The Properties and Manufacturing Processes of Rubber and Quality Assurance" that attracted approximately 50 students.

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





## - Support of “Summer School for Junior High and High School Girls: Encounters with Science, Technology and People”

JSR supports “Summer School for Junior High and High School Girls” run by the non-profit organization GSTEM-CPP.

Summer School for Junior High and High School Girls: A program in which junior high and high school girls are exposed to science and technology, which connects them to women who are active in the world of science and technology, and also encourages them to think about the future with friends and seniors who are also interested in science and technology. The objective is for these girls, through exchanges with scientific researchers and engineers, university and graduate school students, etc., to learn about the merits of choosing a path in science, or to re-realize these merits and strengthen their determination in moving forward along the science path. After the program, participating junior high and high school girls will be given support in selecting their future path and in deepening their ideas on career development.

> [Junior high and high school girls Summer School \(Japanese only\)](#) 

## - Creation of educational opportunities Participation in 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 FY2018, 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.

> [JOICFP \(external site\)](#) 

## (5) Culture and Art

### - Support for the non-profit organization Supporting Organization for Artists of Tohoku (SOAT)

JSR supports the activities of the non-profit organization SOAT. SOAT carries out support activities for victims in the Great East Japan Earthquake in 2011 by creating motivation in life through an art workshop. As part of these activities, SOAT and women who suffered damages create wine bags, and sell them at JSR Trading’s Wine Sale event. The wine bags are made out of leftover curtain cloth provided by Actus Co., Ltd., an interior goods store, and bottom liners provided by Techno-UMG Co., Ltd., and are sustainable. All profits go back to the victims.



A fabricated wine bags

> [NPO Supporting Organization for Artists of Tohoku \(external site\)](#) 

## 6) Environmental activities

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

### - Beach clean-up 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 2018, 117 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.

#### **International clean-up activity (JSR BST Elastomer)**

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 projects in the world.

JSR Micro (U.S.) carried out beach clean-up activities on April 22, 2018.

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

#### **- Mountain clean-up activities**

On November 25, JSR Micro Korea implemented nature protection activities at Sangdang Mountain Fortress, in which participants cleaned up the mountain while hiking.



**Mountain clean-up activity (JSR Micro Korea)**

### **7) Community activities, preservation of historic sites and traditional culture**

#### **- 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 1,700 people in FY2018. Many fun and interesting activities were featured, including various sports and games, soccer lessons, and workshops. On the stage, dance and other performances were presented by neighboring schools and welfare facilities. This time, the non-profit organization COM-FRIENDS, whose objective is to support the independence of disabled persons by providing them with a place to work, also participated in the JSR Harmony Festa by setting up a shop with food and drinks.

The JSR Harmony Festa is an excellent opportunity for the JSR Group and neighboring residents to build a favorable relationship.



**Break the decorative paper ball and catch a fluttering number**



**First-time participant! COM-FRIENDS' kitchen car**

#### **- 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.

### **8) Assistance to disaster-stricken areas**

#### **- Support for the 2018 Japan floods**

JSR donated relief money towards the rescue of people and restoration of afflicted areas that suffered damages in western Japan in July 2018. We are praying for the victims to be able to return to their peaceful lives as quickly as



possible.

#### **- Holding of a "Tohoku reconstruction support market"**

On February 13, 2019, 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. Eight businesses from the three Tohoku prefectures set up sales stands. Many people from both inside and outside the company visited and enjoyed purchasing products while talking to the stand operators. Approximately seven years after the Great East Japan Earthquake, the affected areas continue to move from the reconstruction phase to the business promotion phase. Nonetheless, around 52,000 people\* continue to live a refuge life, and thus the road to recovery 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.



\* Number of evacuees: Announced by the Reconstruction Agency on February 27, 2019).

Cooperation: Office for disaster victim support coordination, Reconstruction Agency, FY2018, and Mitsubishi Research Institute, Inc.

#### **9) Employee volunteer activity support**

JSR actively supports employees voluntarily participating in social contribution activities. 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.

▶ [ESG Data \(PDF1,673KB\)](#) 

## Social Issues Attributable to JSR Group's Corporate Activity Communication with Stakeholders (Shareholders and Investors)

- ↓ [1. Philosophy](#)
- ↓ [2. Codes of Conduct](#)
- ↓ [3. Investor Relations \(IR\)](#)
- ↓ [4. Shareholder Composition](#)

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

JSR Group's 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.

› [Corporate Governance](#)

### 2. Codes of Conduct

Code of Conduct to fulfill Responsibility to Shareholders

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

- 1) 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.
- 2) We shall disclose information on management and business activities in a timely and appropriate manner.

#### (2) Code of Conduct for Preventing Insider Transactions

- 1) 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.
- 2) 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. The following provides a few examples.



**Panel exhibition at a shareholders' meeting**

##### ■ Examples of measures to facilitate the exercise of shareholder voting rights

- Early holding of general meetings of shareholders to avoid the typical peak period of shareholders' meetings
- Earlier notification for general meetings of shareholders
- Adoption of a system for voting via the Internet
- Participation in electronic platforms for the exercise of voting rights by institutional investors
- Listing of invitations to shareholders' meetings on JSR's website in both Japanese and English, and 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.

#### (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.

During FY2018, we held a total of about 240 meetings with investors in Japan and overseas. We also participated in several seminars (briefings) for corporate investment analysts and for individual investors. 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 FY2017 in an effort to improve the comparability of financial information regarding international capital markets.

\* International Financial Reporting Standards

##### 1) 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/](http://www.jsr.co.jp/jsr_e/ir/) 



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

## 2) Information Disclosure in Annual Reports

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

We also published a Japanese version of our annual report in FY2018.

> [Annual Reports](#) 

## 3) 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.

> [JSR Throughout Society](#) 

## 4) Environmental Reporting Platform Development Pilot Project

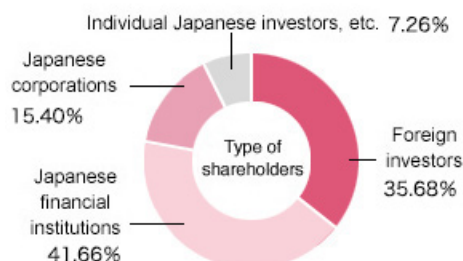
JSR is a participant in the Ministry of the Environment's "Environmental Reporting Platform Development Pilot Project" and discloses environmental information accordingly.

> [Environmental Reporting Platform Development Pilot Project, Ministry of the Environment: ESG Discussion Platform](#) 

# 4. Shareholder Composition

The number of JSR shareholders was 17,678 as of March 31, 2019; shareholder composition is as follows:

\* The shareholding ratio is calculated by using 220,431,196 shares (calculated by deducting the number of treasury shares (5,694,949 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

- ↓ [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

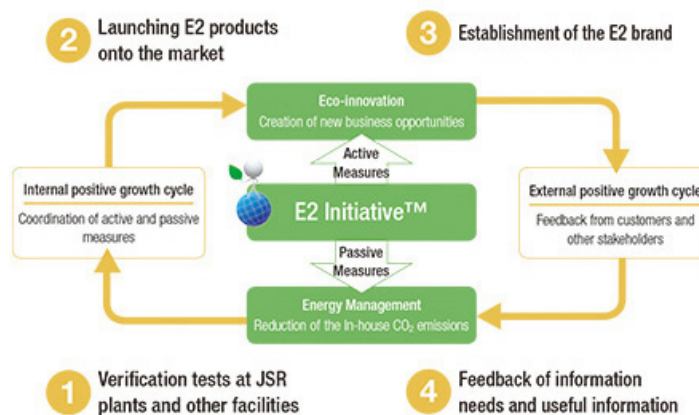
JSR Group's "E2 Initiative™" is a clear and important concept of "environmental value creation" that we constantly have in mind as we manufacture our products and develop our business. It is also used as a concept that allows us to work toward solving problems in environmental burden, resources, and 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 CO<sub>2</sub> 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.

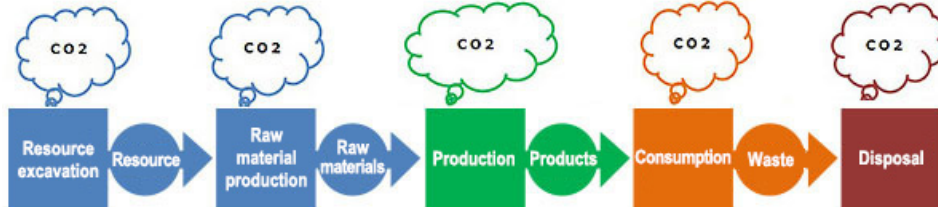
By using the "Life Cycle Assessment (LCA)" to evaluate the "environmental impact" of our products from the design stage in the product development to the use of the product, we are working to solve environmental problems throughout business operations.



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

### 3. LCA & LCI Initiatives

LCA (Life Cycle Assessment) is a method of quantitatively 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 CO<sub>2</sub> emissions during all stages of the life cycle of a product (LCI data).

The entire synthetic rubber industry, including the JSR Group, has engaged in LCI data calculations for representative synthetic rubber products. LCI data is compiled in an LCA database maintained by the Life Cycle Assessment Society of Japan.

▶ [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 polymerization SBR (SSBR) solution 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.\*<sup>1</sup> 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 transportation-related environmental impact is an urgent issue.

Amidst the rapid pace of automotive electric motor adoption, SSBR not only adds lower rolling resistance to tires, it also contributes to wear resistance and durability, thereby helping to maintain long-term performance. In addition, SSBR helps in meeting the growing demand for all-season tires that can be used year-round by adding a degree of softness that ensures even tires with safe stopping performance in the summer can also provide reliable stopping performance on cold road surfaces.

Within the JSR Group, we are constantly working on delivering more of this sort of added value through the innovative SSBR products that we develop and bring to market.

The JSR Group currently manufactures SSBR 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 2019. We will continue helping to solve global environmental issues by meeting the global demand for fuel-efficient tires.

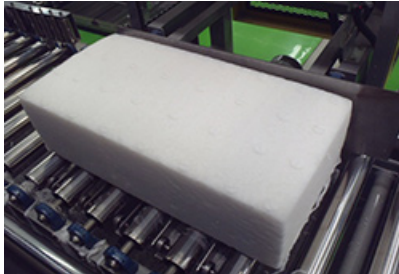




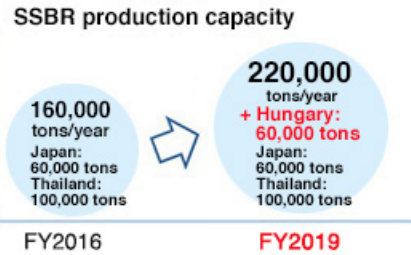
**JSR BST Elastomer Co., Ltd. (Thailand)**



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



**SSBR before packing**



\*1 Rolling resistance: Resistance in the direction opposite to the direction of tire rotation.

## (2) Environmentally-friendly modified asphalt waterproofing material: HAL E-COAT

The HAL E-COAT modified asphalt enamel manufactured and marketed by JSR Group company Emulsion Technology Co., Ltd. is an environmentally-friendly asphalt waterproofing material used in newly constructed buildings, commercial facilities and various other construction projects.

Conventional asphalt waterproofing techniques ("conventional techniques") utilize fire to melt the asphalt, which results in noxious odors and smoke being produced that have a significant, negative impact on the workers and the surrounding environment; however, because HAL E-COAT can be used at normal temperatures, it has less of an impact on the surrounding environment and cuts CO<sub>2</sub> emissions by 99% compared to conventional techniques.

Moreover, the number of steps and materials required to install HAL E-COAT are less than those required by conventional techniques; thus, for example, by using HAL E-COAT on a roof, the weight of the waterproofing layer can be reduced by 50% to 70%.

In addition, when assessed by Construction Technology Review and Certification<sup>\*2</sup> standards, HAL E-COAT achieves the same degree of waterproofing performance and quality as conventional techniques and is garnering attention as a future, environmentally-friendly alternative to conventional waterproofing techniques.

\*2 Construction Technology Review and Certification is a review, certification and popularization process aimed at helping new construction technologies developed by private sector entities become registered and widely recognized, and it is carried out by registered examination authorities in Japan.



**JSR Center of Materials Innovation  
HAL E-COAT is also used on the Center's roof.**

## (3) Energy utilization-enhancing pre-doping technology for power storage devices

Lithium-ion secondary batteries (LIB) are used in electric automobiles, smartphones and a wide variety of other devices, but as the market for LIB expands, so too does the need for greater power storage capacity per unit size and reusability without degradation or loss.



The pre-doping technology developed by JSR offers a novel approach to meeting these needs, for which it is attracting attention. Generally speaking, the problem of deteriorating charge/discharge capacity is due to the lithium ions inside the LIB being consumed by secondary reactions and other internal factors, but if an electrode is first used on these lithium ions that are going to be consumed (pre-doping), it has the effect of increasing storage capacity and battery life.

The pre-doping technology, which builds on many years of research and development by JSR, has found its way into such applications as the mass production of lithium-ion capacitors (LIC) developed by JSR Group company JM Energy Corporation. The newly developed process is used as the normal roll-to-roll system employed in LIB manufacturing, thereby allowing LIB manufacturers to introduce pre-doping technology without the need to significantly alter their materials or processes.

This pre-doping technology enhances the characteristics of LIB and other power storage devices, making it possible to widen their scope of application and, thereby, contribute to more efficient energy use and the realization of a low-carbon society.



**Roll-to-roll pre-doping system**

#### **(4) 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.



In addition to being used in computers, mobile phones, electric vacuum cleaners and a host of other electronic devices, recent years have seen the rapidly growing adoption of lithium-ion secondary batteries as high-performance power sources for electric and hybrid automobiles.

The binders manufactured by the JSR Group are aqueous emulsion-type binders that rely on high-performance adhesive polymers whose particles disperse in water, thereby imbuing the binders with a number of outstanding characteristics, such as making them organic solvent-free (which reduces the environmental burden of the manufacturing process) and giving them an ideal, low-resistance adhesive form (point adhesion by nanoparticles).

Within the JSR Group, the advanced macromolecular design and dispersion stabilization-driven manufacturing technologies that we have cultivated over many years are being used in the development of cutting-edge binders that stand up to rigorous and repeated battery testing.

#### **(5) Lithium-Ion Capacitors that Help Achieve Efficient Energy Use**

Lithium-ion capacitors have the advantage of being able to perform instant charging and discharging with little propensity for self-discharge, all while offering a high degree of safety combined with a long lifespan. They have found use as an energy-efficient energy source for a wide variety of applications, including as the primary power source or regeneration/assistance supplementary power source for overhead wireless trams, subways, hybrid buses, automated conveyor systems and other

#### **JM Energy Corporation ULTIMO™ brand of lithium-ion capacitors**



**Laminated cells**



**Laminated-cell modules**

mobile systems; as a backup power source, such as for instantaneous voltage drop compensators; and as an electrical storage device for short-term fluctuation compensators used in solar and wind power generation. And looking ahead, the scope of market applications for lithium-ion capacitors is expected to continue to grow.



Square cells



Square-cell modules

JM Energy Corporation, which brought the world's first lithium-ion capacitor mass production facility online at the end of 2008, is the industry leader in lithium-ion capacitor production. By capitalizing on the materials and precision machining technology of the JSR Group, JM Energy Corporation delivers high-performance, high-quality lithium-ion capacitors for the mass market.

#### **(6) CALGRIP™ Brand of Latent Heat Storage Materials Contributes to Energy Conservation**

Unlike conventional cold insulators, the JSR Group's CALGRIP™ latent heat storage material is able to maintain a specific temperature between 5°C and 40°C over long periods of time. The energy-saving effects of CALGRIP™ can be put to use not only in fields requiring strict temperature control, such as constant temperature transport and storage of pharmaceuticals, but also more broadly in construction, HVAC and other fields involving energy-saving or temperature control-related applications.

#### **(7) 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 cleanliness 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.

#### **(8) HUSHLLOY™ Reduces Squeak Noise, Grease Application, and Non-Woven Fabric Lamination**

HUSHLLOY™\*3, a product of JSR Group company Techno-UMB, 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.

\*3 HUSHLLOY™ is a registered trademark of Techno-UMB Co., Ltd.

#### **(9) 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

- ↓ [1. Philosophy](#)
- ↓ [2. Medical Care Trends and JSR's Life Sciences Business Fields](#)
- ↓ [3. Structure of the Life Sciences Business](#)
- ↓ [4. Contributing to a Healthy and Long-Living Society in Open Innovation](#)

## 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.

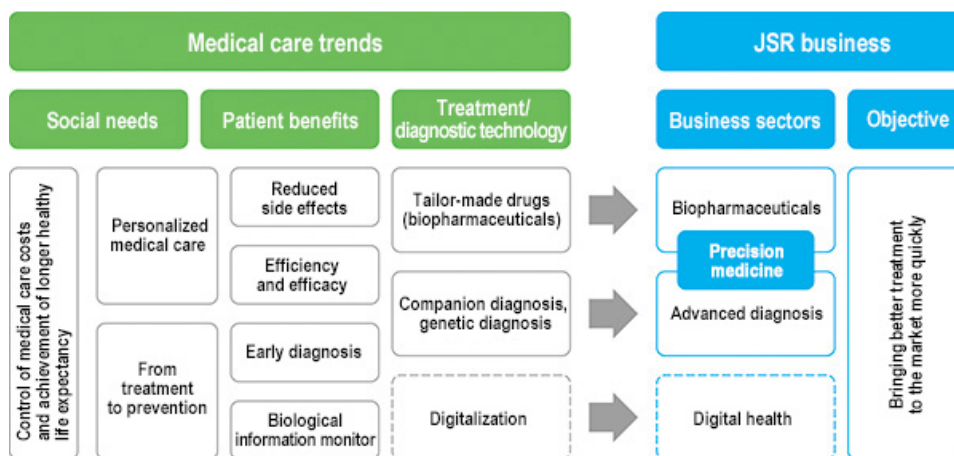
## 2. Medical Care Trends and JSR's Life Sciences Business Fields

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).<sup>\*1</sup> Moreover, the average length of time needed for a new drug to reach the market was 12 years.<sup>\*2</sup>

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

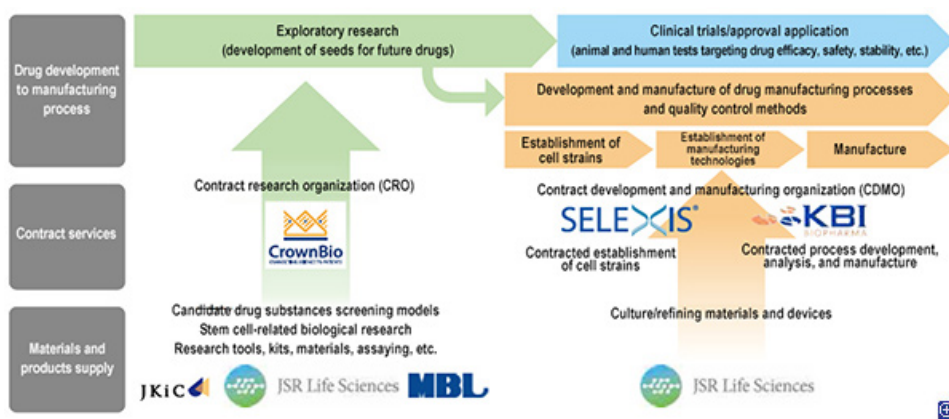
\*2 Source: California Biomedical Research Association



### 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, 2019)

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 PDx<sup>3</sup> 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<sup>\*4</sup> 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.

#### **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.

## **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<sup>®</sup>, 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.

## Social Issues that JSR Group Can Help Resolve

# Contribution to Quality of Life and Happiness

- ↓ [1. Philosophy](#)
- ↓ [2. Society and the Coming Digital Revolution](#)
- ↓ [3. Added Value for Society by the Digital Solutions Business](#)

## 1. Philosophy

The materials developed through our Digital Solutions Business contribute to the creation of newer and better computers, microchip-equipped electronics and digital communications devices, and these, in turn, add value to society. As the ongoing digital revolution continues to evolve, we expect that such materials will have an important role to play in addressing the societal challenges embodied in the SDGs; thus, in order to contribute to a better quality of life and happiness for society, the JSR Group is expanding its business across the entire range of advanced materials essential to the digital revolution.

## 2. Society and the Coming Digital Revolution

Today, when life without computers and the Internet is no longer imaginable, an even greater revolution is underway.

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 become dramatically 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"

### 3. Added Value for Society by the Digital Solutions Business

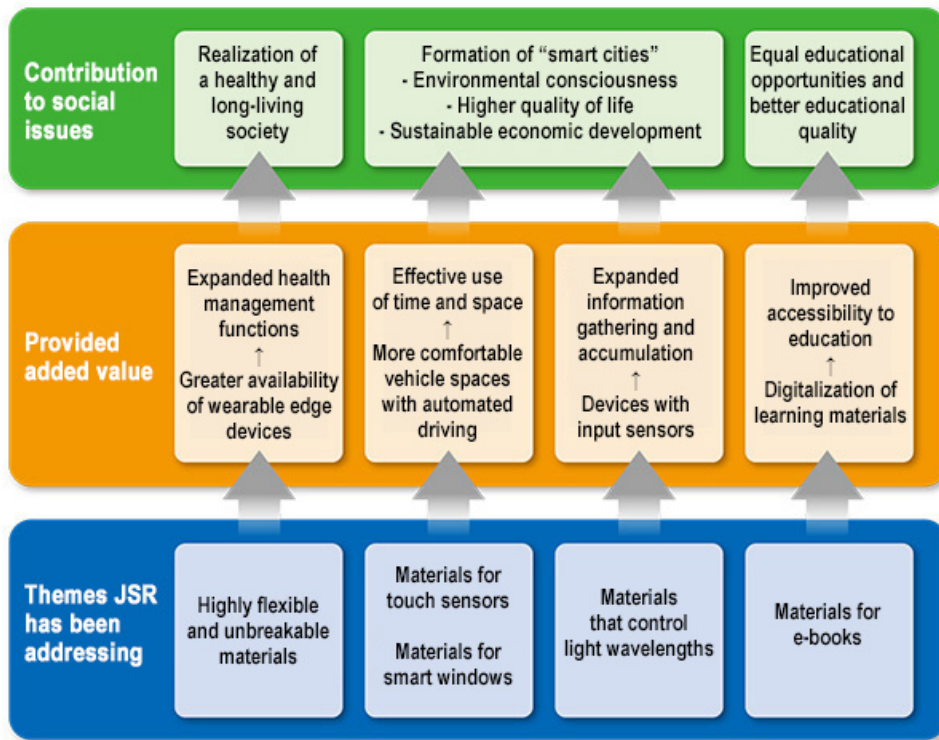
The Digital Solutions Business of the cognitive computing age will need more than a materials-based approach whereby it simply supplies functional chemical products—specifically, differentiated high-value products. It will also require an approach that involves providing solutions that are matched to 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-lived 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 development of 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.

#### 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 2019: Formats](#)
- ↓ [3. Referenced Guidelines](#)
- ↓ [4. Target Period and Fiscal Year](#)
- ↓ [5. Operations Covered](#)
- ↓ [6. Note concerning Numerical Notations](#)
- ↓ [7. Independent Review](#)
- ↓ [8. 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.

We recently launched a new management organization (CEO Eric Johnson and Representative Director, President, and COO Nobuo Kawahashi) at the General Meeting of Shareholders held in June 2019. This report contains a message by the newly appointed Representative Director, President, and COO, Mr. Kawahashi. Mr. Johnson and Mr. Kawahashi also participated in the Dialogue with Stakeholders, where they spoke in their capacities prior to the new organization's launch; namely, as Managing Officer responsible for Life Sciences and North America Business and as Executive Managing Officer responsible for Research and Development, Human Resources Development, and Diversity Promotion, respectively.

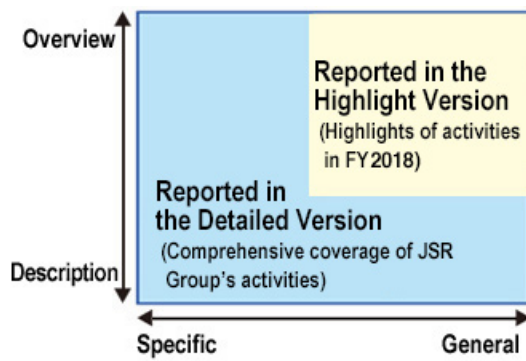
We executed our activities by arranging our CSR priorities into three approaches: "Basic Issues in JSR Group's Corporate Activity," "Social Issues Attributable to JSR Group's Corporate Activity," and "Social Issues that JSR Group Can Help Resolve." This report aims to communicate our CSR activities during FY2019 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 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. In addition to the Online Version, we have published a Highlight Version in the form of a PDF file that outlines the essence of our CSR activities in FY2019. This version is available on the Internet.

### 2. CSR Report 2019: Formats

JSR Group CSR Report 2019 is issued in a Detailed Version and a Highlight Version. It is provided in the following media.

› [Report Downloads](#)



Please visit the JSR website for details on products and services, financial information, etc.

> [JSR Website: Home Page](#)

### 3. Referenced Guidelines

- United Nations Guiding Principles on Business and Human Rights
- Environmental Accounting Guidelines 2005 / Environmental Reporting Guidelines 2012, Ministry of the Environment
- Environmental Accounting Guidelines for Chemical Companies, Japan Chemical Industry Association (JCIA)
- Global Reporting Initiative (GRI) Standards

### 4. Target Period and Fiscal Year

- FY2018 : April 1, 2018, to March 31, 2019

Please note that some sections include activities conducted during periods that are other than that provided above.

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

### 5. Operations Covered

- The entire report  
JSR Group: 61 companies
  - JSR: Head Office, Yokkaichi Plant, Chiba Plant, Kashima Plant, Yokkaichi Research Center, Tsukuba Research Laboratories, JSR-Keio University Medical and Chemical Innovation Center, Nagoya Branch, Taiwan Branch
  - Group Companies: 20 domestic Group companies, 40 overseas Group companies (Current as of March 31, 2019)
- RC data (environment, safety, health)  
JSR Group: 19 companies
  - JSR: Head Office, Yokkaichi Plant, Chiba Plant, Kashima Plant, Yokkaichi Research Laboratories, Tsukuba Research Laboratories, Nagoya Branch
  - Group Companies: 9 domestic Group companies, 9 overseas Group companies\*

(Current as of March 31, 2019)

\*For information about Group companies that collected RC data, see "[ESG Data: JSR Group Companies](#)." 

“JSR” and “JSR Group” are classified as follows:

JSR Group: JSR and Group companies

JSR: JSR Corporation

## 6. Note concerning Numerical Notations

For both absolute values and percentages, numerical values that fall below the shown number of digits are rounded off.

For this reason, the sums of individual numbers may differ from the sum values provided.

## 7. Independent Review

Independent Review: Responsible Care Verification Center, Japan Chemical Industry Association

The Detailed Version of the report is verified by the third-party, Responsible Care Verification Center. After that the report is published with the approval of the CSR committee of JSR.

## 8. Publication Information

Date of publication:	September 2019
Next scheduled issue:	September 2020
(Previous issue:	September 2018)

## Targets and Results

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 FY2018.

Assessment ◎: Better than planned ○: As planned △: Improvement needed — : New item for this FY

Basic Issues in JSR Group's Corporate Activity	FY2018 Target	FY2018 Result	Assessment	FY2019 Target
Compliance	● Continue corporate ethics awareness surveys	● Conducted corporate ethics awareness surveys and followed up at domestic and overseas offices	○	● Continue corporate ethics awareness surveys
	● 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	○	● Continue providing training for new employees and new management employees as well as e-learning and other forms of employee education ● Revise JSR Group Principles of Corporate Ethics
	● Improve level of legal compliance	● Confirmed periodic legal compliance verification at domestic and overseas offices ● Held legal compliance seminars ● Implemented e-learning on antitrust laws, corruption prevention, subcontracting laws, and export control	○	● Continue periodic legal compliance verification ● Continue providing employee education through legal affairs seminars, e-learning, etc.
Corporate governance	● Continue response to the Corporate Governance Code	● Revised Corporate Governance Report in November 2018 in accordance with partial revision of Corporate Governance Code ● Expanded disclosure concerning officers' remuneration and methods for determining officers' remuneration ● Continuing from the previous year, evaluated the Board of Directors' effectiveness	○	● Continue response to the Corporate Governance Code ● Expand disclosure concerning officers' remuneration and methods for determining officers' remuneration ● Continue Board of Directors' effectiveness evaluation
Risk management	● Reconfirm and revise risks identified in FY2017 at all JSR Group divisions ● Verify the progress and status of measures to cope with critical JSR Group risks	● Reconfirmed and revised risks identified in FY2017 at all JSR Group divisions ● Implemented interviews in the Head Office and departments as part of monitoring of departmental risk and verified the progress and status of measures to cope with risk ● Reexamined risk management regulations and made partial revisions	○	● Verify the progress and status of measures to cope with critical JSR Group risks
	● Continue to hold and improve JSR headquarter crisis management drills (initial response drills and BCP drills) ● Establish and revise BCP*1 manuals for domestic manufacturing subsidiaries	● Conducted crisis-management training assuming a direct hit from a large-scale earthquake in Tokyo for mid-level personnel in each team of the headquarters for accident and crisis control ● Implementing countermeasures and follow-up for issues identified through crisis management training ● Rechecked the crisis management system and BCP manual in case of a crisis affecting a Group company ● Conducted a workshop on corporate duty to consider safety in the event of a major disaster	○	● Continue implementation of crisis management training (initial response training and BCP training) and improve issues identified through training ● Recheck the crisis management system and BCP manual in case of a crisis affecting a Group company
	● Continue measures in accordance with the seismic reinforcement plan (Yokkaichi Plant reinforcement work to be completed for manufacturing facilities in FY2018 and for the containment building in FY2021; Kashima Plant reinforcement work to be completed in FY2020. Note that seismic reinforcement work at the Chiba Plant is complete.)	● Conducted seismic reinforcement work according to plan (Yokkaichi Plant, Kashima Plant) Equipment work at Yokkaichi Plant was completed FY2018	○	● Continue measures in accordance with the seismic reinforcement plan (Kashima Plant reinforcement work to be completed in FY2020; Yokkaichi Plant reinforcement work to be completed for the containment building in FY2021) ※ Complete seismic work for Chiba Plant and Yokkaichi Plant equipment

Social Issues Attributable to JSR Group's Corporate Activity	FY2018 Target	FY2018 Result	Assessment	FY2019 Target
Health and safety initiatives	<ul style="list-style-type: none"> <li>● Zero facility accidents and zero serious workplace accidents</li> <li>&lt;Safety foundation&gt; <ul style="list-style-type: none"> <li>- Improve mechanisms for sharing needed information</li> <li>- Maintain and manage information on the safety foundation and keep information up to date</li> </ul> </li> <li>&lt;Safety culture&gt; <ul style="list-style-type: none"> <li>- Continue efforts to spread safety values</li> <li>- Continue activities to eradicate unsafe behavior</li> <li>- Provide education and awareness-raising on safety mindsets suitable for the current age</li> <li>- Conduct safety competency level assessments by Japan Safety Competency Center (Yokkaichi Plant)</li> </ul> </li> <li>● Continue systematic identification of hazards with HAZOP*2 and implement measures for major identified hazards</li> </ul>	<ul style="list-style-type: none"> <li>● Accidents ※Accidents tallied for the calendar year</li> <li>- Facility accidents (abnormalities stipulated in the Act on the Prevention of Disaster in Petroleum Industrial Complexes and Other Petroleum Facilities): 2 JSR accidents, 4 Group accidents</li> <li>There was an increase in the number of leak-related accidents attributable to aging equipment.</li> <li>- Workplace accidents (requiring time off work or worse): 0 JSR accidents, 1 accident in a JSR manufacturing partner, 2 Group accidents</li> <li>Although there were fewer serious accidents, there were more accidents involving tripping/falling as well as getting caught in machinery due to inattentiveness.</li> <li>&lt;Safety foundation&gt; <ul style="list-style-type: none"> <li>- Improved mechanism for sharing safety information; however, promoting use of safety foundation information remained a problem</li> </ul> </li> <li>&lt;Safety culture&gt; <ul style="list-style-type: none"> <li>- Conducted questionnaire survey on organizational penetration of safety values and found that, although some progress was made, disparities exist among business establishments</li> <li>- Prepared and tested separate safety education curricula for young workers and veteran workers and observed results</li> <li>- Yokkaichi Plant underwent safety competency level assessment by Japan Safety Competency Center</li> </ul> </li> <li>● Implemented hazard identification with HAZOP according to plan</li> </ul>	<ul style="list-style-type: none"> <li>△</li> </ul>	<ul style="list-style-type: none"> <li>● Zero facility accidents and zero serious workplace accidents</li> <li>- Reinforce measures to prevent accidents due to equipment damage</li> <li>- Prevent workplace accidents through eradication of unsafe behaviors and development of age group-specific safety education curricula</li> <li>● Improve security capability (from dependent to independent organization)</li> <li>&lt;Safety foundation&gt; <ul style="list-style-type: none"> <li>- Review safety and security-related regulations and criteria schemes and make regulations common throughout the organization</li> <li>- Predict damage from major accidents and apply results to prevention activities</li> </ul> </li> <li>&lt;Safety culture&gt; <ul style="list-style-type: none"> <li>- Continue efforts to spread safety values</li> <li>- Advance education to improve hazard recognition skills (with dual use of virtual reality and exercises)</li> </ul> </li> </ul>
	<ul style="list-style-type: none"> <li>● Maintain and renew certifications on security-related laws and regulations</li> <li>- Renew 2-year consecutive certification as a Class 1 Pressure Vessel: Chiba Plant</li> <li>● Maintain and improve security management activities in accordance with the Accreditation system acquired by plants</li> </ul>	<ul style="list-style-type: none"> <li>● Maintained and renewed certifications on security-related laws and regulations</li> <li>- Renewed certification of Class 1 Pressure Vessel: Chiba Plant (March 2018)</li> <li>● Conducted certified high pressure gas establishment audits and confirmed security management systems are compliant</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Maintain and renew certifications on security-related laws and regulations</li> <li>● Maintain and improve security management activities in accordance with the Accreditation system acquired by plants</li> </ul>
	<ul style="list-style-type: none"> <li>● Make audits more efficient while continuing to use the previous fiscal year's audit method</li> <li>● Conduct priority-oriented audits, focusing on the handling of critical risks present at the audited division</li> </ul>	<ul style="list-style-type: none"> <li>● Conducted efficient audits by simultaneously conducting environment and safety audits and certified high-pressure gas establishment audits</li> <li>● Disseminated thoughts of business establishment managers on safety through audits, verified expansion of activities tailored to section operations, identified issues, and linked the above to improvements</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Implement efficient and highly accurate audits</li> <li>- Conduct priority-oriented audits, focusing on the handling of critical risks present at the audited division</li> </ul>
Climate change mitigation	<ul style="list-style-type: none"> <li>● Promote efforts for reductions with attention to government goals on CO2 emissions reductions</li> </ul>	<ul style="list-style-type: none"> <li>● 3.2% increase in FY2018 compared to FY2013</li> </ul>	<ul style="list-style-type: none"> <li>△</li> </ul>	<ul style="list-style-type: none"> <li>● Promote new activities for achieving a 15% reduction compared to FY2013 by FY2030</li> </ul>
Environmental impact reduction	<ul style="list-style-type: none"> <li>● Reduce VOC*3 emissions by 75% from FY2000 levels</li> </ul>	<ul style="list-style-type: none"> <li>● Reduced VOC emissions by 82% from FY2000 levels through continuance of stable operation of RTO*4 installed in the three JSR plants</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Continue current efforts</li> </ul>
	<ul style="list-style-type: none"> <li>● Ensure reliable and stable functionality of environmental equipment and maintain current status of zero environmental complaints</li> </ul>	<ul style="list-style-type: none"> <li>● Ensured reliable and stable functionality of environmental equipment and maintained current status of zero environmental complaints in FY2018</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Continue current efforts</li> </ul>
Waste reduction	<ul style="list-style-type: none"> <li>● Reduce generated waste by 15% in FY2030 compared to FY2013</li> </ul>	<ul style="list-style-type: none"> <li>● 4.5% reduction in FY2018 compared to FY2013</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Continue current efforts</li> </ul>
Water resources conservation	<ul style="list-style-type: none"> <li>● Maintain current recycling rate</li> </ul>	<ul style="list-style-type: none"> <li>● Used 15,275,000 m3 of water and recycled the equivalent of 29.3% of that water (4,481,000 m3)</li> </ul>	<ul style="list-style-type: none"> <li>○</li> </ul>	<ul style="list-style-type: none"> <li>● Continue current efforts</li> </ul>



Social Issues Attributable to JSR Group's Corporate Activity	FY2018 Target	FY2018 Result	Assessment	FY2019 Target
Chemical and product safety	<ul style="list-style-type: none"> <li>● Provide environmental and safety information to customers</li> <li>● Continue to label products and provide SDS based on GHS<sup>*5</sup> in compliance with domestic regulations</li> <li>● Comply timely with GHS in accordance with laws and regulations of each export destination</li> </ul>	<ul style="list-style-type: none"> <li>● Provided proper SDS on prototypes and products to customers by utilizing the SDS<sup>*6</sup> electronic management system</li> <li>● Labeled products shipped domestically and provided SDS based on GHS in compliance with domestic laws/JIS</li> <li>● Implemented responses corresponding to GHS legislation of export destinations for overseas SDS</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue providing environmental and safety information to customers</li> <li>● Continue to label products and provide SDS based on GHS in compliance with domestic regulations</li> <li>● Advance compliance with GHS in accordance with laws and regulations of each export destination</li> </ul>
	<ul style="list-style-type: none"> <li>● Continue precise compatibility with domestic laws/regulations and standards</li> </ul>	<ul style="list-style-type: none"> <li>● Completed preparations for smooth pre-enforcement response to portion of 2017 revision of Chemical Substances Control Act coming into effect in January 2019 through in-house publicity and preparations concerning necessary responses</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue precise compatibility with domestic laws/regulations and standards</li> </ul>
	<ul style="list-style-type: none"> <li>● Continue proper responses to overseas legislation and amendments, such as the EU's REACH<sup>*7</sup> and US's revised TSCA<sup>*8</sup></li> </ul>	<ul style="list-style-type: none"> <li>● Transferred necessary information and upgraded dossiers for REACH compliance and made preparations for compliance associated with Brexit</li> <li>● Made notifications necessary for compliance with the US's revised TSCA</li> <li>● Continued preparing for compliance with other amended laws in Asian countries</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue response to the EU's REACH and UK laws concerning Brexit as well as surefooted response to amended laws in South Korea, Taiwan, Turkey, etc.</li> </ul>
Quality management	<ul style="list-style-type: none"> <li>● Develop quality control systems and upgrade quality control by introducing new methods</li> </ul>	<ul style="list-style-type: none"> <li>● Reflected business strategy formulated from customers' perspective on quality assurance plan and advanced the plan through PDCA</li> <li>● Completed ISO9001 renewal audits at JSR's 3 plants</li> <li>● Began making product quality testing equipment online-compatible</li> <li>● Advanced quality improvement and operational efficiency using the Six Sigma methods</li> </ul>	○	<ul style="list-style-type: none"> <li>● Develop quality control systems and upgrade quality control by introducing new methods</li> </ul>
	<ul style="list-style-type: none"> <li>● Implement Seventh Quality Performance Review as well as external and internal quality audits</li> </ul>	<ul style="list-style-type: none"> <li>● Implemented Seventh Quality Performance Review as well as external and internal quality audits</li> <li>● Conducted five extra audits as well</li> </ul>	○	<ul style="list-style-type: none"> <li>● Implement Eighth Quality Performance Review as well as external and internal quality audits</li> </ul>
	<ul style="list-style-type: none"> <li>● Prepare company-wide quality guidelines toward building a global quality control system</li> </ul>	<ul style="list-style-type: none"> <li>● Prepared guidelines for sharing thinking vis-à-vis quality and implemented activities for disseminating them, including in overseas Group companies</li> </ul>	○	<ul style="list-style-type: none"> <li>● Develop company-wide quality guidelines toward building a global quality control system</li> </ul>
Labor environment	<ul style="list-style-type: none"> <li>● Advance workstyle innovation activities</li> <li>● Continue other efforts</li> </ul>	<ul style="list-style-type: none"> <li>● Implemented workstyle innovation activities</li> <li>● JSR recognized as a 2019 Excellent Health and Productivity Management Organization (White 500)</li> <li>● Provided stratified training programs, etc.</li> <li>● Disclosed overtime status (monthly)</li> </ul>	○	<ul style="list-style-type: none"> <li>● Advance workstyle innovation activities</li> <li>● Continue other efforts</li> <li>● Provide stratified training programs, etc.</li> </ul>
Diversity	<ul style="list-style-type: none"> <li>● Execute concrete measures and achieve quantitative targets for diversification of human resources</li> </ul>	<ul style="list-style-type: none"> <li>● Percentage of female employees hired in April 2019 [JSR] College graduates hired for technical positions: 23% (target: 15-20%) College graduates hired for general office positions: 50% (target: 40-50%)</li> <li>● Percentage of females in management positions as of April 2019 [JSR]: 4.3% (target: 8%)</li> </ul>	△	<ul style="list-style-type: none"> <li>● Execute concrete measures and achieve quantitative targets for diversification of human resources</li> </ul>
	<ul style="list-style-type: none"> <li>● Advance recruitment diversity</li> </ul>	<ul style="list-style-type: none"> <li>● Percentage of employees with disabilities [JSR]: 2.43% (statutory employment rate : 2.2%)</li> <li>● Foreign national employees recruited [JSR]: 19 (hired from FY2016 to FY2018)</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue current efforts</li> </ul>
	<ul style="list-style-type: none"> <li>● Advance corporate culture</li> </ul>	<ul style="list-style-type: none"> <li>● Continued communication-building activities at each office/workplace</li> <li>● Held various seminars</li> </ul>	○	<ul style="list-style-type: none"> <li>● Cultivate a corporate culture built on healthy communication</li> </ul>
Human rights	<ul style="list-style-type: none"> <li>● Improve awareness of corporate ethics and revision of JSR Group Principles of Corporate Ethics as necessary</li> </ul>	<ul style="list-style-type: none"> <li>● Implemented corporate ethics e-learning program</li> <li>● Conducted corporate ethics training that included the topics of sexual harassment and power harassment for new employees and new management employees</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue providing training for new employees and new management employees as well as e-learning and other forms of employee education</li> <li>● Conduct corporate ethics training that included the topics of sexual harassment and power harassment for new employees and new management employees</li> </ul>
Supply chain management	<ul style="list-style-type: none"> <li>● Expand CSR/sustainable procurement<sup>*9</sup> (continue second round of the supplier survey)</li> </ul>	<ul style="list-style-type: none"> <li>● Continued second round of supplier survey with revised CSR/Sustainable Procurement Questionnaire</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue with the second round of the supplier survey (including for overseas suppliers)</li> </ul>
	<ul style="list-style-type: none"> <li>● Continue advancing activities focusing on collaborations in supply chains</li> </ul>	<ul style="list-style-type: none"> <li>● Practiced green procurement<sup>*10</sup> based on JSR Green Procurement Guidelines</li> <li>● Provided data on chemical substances in supply chains using chemSHERPA<sup>*11</sup></li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue advancing activities focusing on collaborations in supply chains</li> </ul>
Communication with employees	<ul style="list-style-type: none"> <li>● Continue CSR awareness-raising activities</li> </ul>	<ul style="list-style-type: none"> <li>● Held CSR Explanatory Briefings (4 domestic bases)</li> <li>● Held annual CSR report presentation meeting</li> </ul>	○	<ul style="list-style-type: none"> <li>● Continue CSR awareness-raising activities</li> </ul>

Social Issues Attributable to JSR Group's Corporate Activity	FY2018 Target	FY2018 Result	Assessment	FY2019 Target
Communication with communities and society	<ul style="list-style-type: none"> <li>Utilize the UN Global Compact (GC) network</li> <li>Participate in the Consortium for Sustainable Paper Use</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Participated in the Consortium for Sustainable Paper Use</li> </ul>	○	● Continue current efforts
	<ul style="list-style-type: none"> <li>Advance social contribution activities that highlight JSR Group's sustainable orientation (continue visiting lessons and lectures, etc.)</li> <li>Continue communication with local communities, including plant neighbors, with the aim of being a company that is trusted by the community</li> </ul>	<ul style="list-style-type: none"> <li>In cooperation with educational institutions, continued providing education on preventing and coping with global warming by means of guest science lessons at elementary schools as well as accepting junior high school and high school students for a workplace experience program</li> <li>Carried out communication activities with local communities near each base</li> </ul>	○	● Continue current efforts
	<ul style="list-style-type: none"> <li>Advance communication using green areas that help conserve biological diversity</li> </ul>	<p>Implemented the following measures at business establishments to advance communication using green areas that help conserve biological diversity</p> <ul style="list-style-type: none"> <li>Yokkaichi Plant: Accepted green area tours at the plant workplace level and confirmed the potential of green spaces through an expert-led biological study</li> <li>Chiba Plant: Developed the green spaces through forest thinning and created a new pond</li> <li>Kashima Plant: Conducted an overall review of the green space management plan, planted new trees, and installed more birdhouses</li> <li>Tsukuba Research Laboratories: Eliminated use of herbicides and chemical fertilizers within the biodiversity promotion area, created soil from fallen leaves and branches, and monitored invasive species</li> </ul>	○	● Continue current efforts
	<ul style="list-style-type: none"> <li>Create and distribute marketing materials to promote the "Mirai no kigen (Origin of the Future)" TV program</li> </ul>	<ul style="list-style-type: none"> <li>Distributed marketing materials during student recruitment and at universities hosting program filming</li> <li>Placed text advertisement on Shinkansen trains</li> </ul>	○	● Continue current efforts
Communication with shareholders and investors	<ul style="list-style-type: none"> <li>Release information through various media</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>	○	● Continue current efforts
	<ul style="list-style-type: none"> <li>Communicate bi-directionally with shareholders and investors</li> </ul>	<ul style="list-style-type: none"> <li>Held financial results briefings (quarterly) and management policy briefing (annually) for institutional investors and analysts</li> <li>Held meetings with domestic and overseas institutional investors and securities analysts (e.g., participated in domestic and overseas conferences, including those specialized in the Life Sciences Business; held individual visits with institutional investors in Japan and abroad; held small meetings, etc.)</li> <li>Held briefings for individual investors</li> </ul>	○	● Continue current efforts
	<ul style="list-style-type: none"> <li>Conduct shareholder meetings that encourage relationship-building</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>	○	● Continue current efforts

\*1 BCP = Business Continuity Plan. A plan that defines decision-making criteria and courses of action for continuing business operations in the event of an emergency or disaster in order to permit the continuation or restoration of operations as quickly as possible following a major emergency event—such as a large-scale disaster, fire/explosion, or terrorist attack—that could affect the existence of the company. Business Continuity Management (BCM) refers to the management system implemented to improve and operate the BCP through PDCA.

\*2 HAZOP (Hazard and Operability Studies) safety inspection

\*3 VOC = "Volatile Organic Compounds," which is a cause of air pollution.

\*4 RTO = Regenerative Thermal Oxidizer. A device used to burn VOCs and decompose them into CO<sub>2</sub> and water to create cleaner exhaust gases.

\*5 GHS = Globally Harmonized System Classification and Labeling of Chemicals. A system designed to globally standardize the classification and labeling of chemicals and the provision of SDS.

\*6 SDS = Safety Data Sheet. A sheet describing the safety information on chemical substances is attached when shipped to other operators.

\*7 REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) is an EU regulation that requires the registration of all uses and safety data for imported chemicals.

\*8 TSCA: The Toxic Substances Control Act of the United States. The act was revised in 2016 to more strongly regulate chemical substances that pose unreasonable risks.

\*9 CSR/sustainable procurement is a system of procuring raw materials from suppliers that practice environmental protection as well as implement initiatives having social importance in terms of corporate ethics, employment, etc.

\*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 chemSHERPA : A basic information sheet used to provide downstream users with information on chemical substances in products. It is managed by the Joint Article Management Promotion Consortium.

## GRI Guidelines Comparison Table

JSR Group's CSR Report 2019 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., JSR Report, 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.



> [ESG Data](#) 

### General Disclosures

Explanation of locations (titles) —: No data available N/A: No applicable items

GRI Standards General Disclosures 2016		Location (Title)	ISO 26000 Core Subject	UN Global Compact Principle
<b>1. Organizational profile</b>				
102-1	Name of organization	JSR Corporation	—	—
102-2	Activities, brands, products, and services	> <a href="#">JSR Group Profile</a>	—	—
102-3	Location of headquarters	1-9-2 Higashi-Shimbashi, Minato-ku, Tokyo, Japan	—	—
102-4	Location of operations	> <a href="#">JSR Group Profile</a> > <a href="#">JSR Group ESG Data</a> 	—	—
102-5	Ownership and legal form	> <a href="#">JSR Group Profile</a>	—	—
102-6	Markets served	> <a href="#">JSR Group Profile</a>	—	—
102-7	Scale of the organization	> <a href="#">JSR Group Profile</a>	—	—
102-8	Information on employees and other workers	> <a href="#">Labor Environment</a> > <a href="#">Diversity</a> > <a href="#">ESG Data: Social Data</a> 	6.4 6.4.3	—
102-9	Supply chain	> <a href="#">Supply Chain Management</a>	—	—
102-10	Significant changes to the organization and its supply chain	> <a href="#">Supply Chain Management</a>	—	—
102-11	Precautionary Principle or approach	> <a href="#">Corporate Mission and CSR Philosophy</a> > <a href="#">CSR Management and Advancement Structure</a> > <a href="#">Corporate Governance</a>	6.2	—

		<ul style="list-style-type: none"> <li>› <a href="#">Compliance</a></li> <li>› <a href="#">Risk Management</a></li> <li>› <a href="#">Responsible Care</a></li> </ul>		
102-12	External initiatives	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Mission and CSR Philosophy</a></li> <li>› <a href="#">Responsible Care</a></li> <li>› <a href="#">Environmental Conservation (Biodiversity Conservation)</a></li> </ul>	6.2	—
102-13	Membership of associations	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Mission and CSR Philosophy</a></li> <li>› <a href="#">Responsible Care</a></li> <li>› <a href="#">Environmental Conservation (Biodiversity Conservation)</a></li> </ul>	6.2	—
<b>2. Strategy</b>				
102-14	Statement from senior decision-maker	<ul style="list-style-type: none"> <li>› <a href="#">Message from the Representative Director, President and COO</a></li> </ul>	6.2	—
102-15	Key impacts, risks, and opportunities	<ul style="list-style-type: none"> <li>› <a href="#">Message from the Representative Director, President and COO</a></li> <li>› <a href="#">Priority Issues to be Addressed by JSR Group</a></li> <li>› <a href="#">JSR Group's Mid-Term CSR Plan</a></li> </ul>	6.2	—
<b>3. Ethics and integrity</b>				
102-16	Values, principles, standards, and norms of behavior	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Mission and CSR Philosophy</a></li> <li>› <a href="#">Compliance</a></li> </ul>	—	—
102-17	Mechanisms for advice and concerns about ethics	<ul style="list-style-type: none"> <li>› <a href="#">Compliance</a></li> </ul>	—	—
<b>4. Governance</b>				
102-18	Governance structure	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-19	Delegating authority	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> </ul>	—	—
102-20	Executive-level responsibility for economic, environmental, and social topics	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> </ul>	—	—
102-21	Consulting stakeholders on economic, environmental, and social topics	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> </ul>	6.2	—
102-22	Composition of the highest governance body and its committees	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-23	Chair of the highest governance body	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
		›		

102-24	Nominating and selecting the highest governance body	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-25	Conflicts of interest	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-26	Role of highest governance body in setting purpose, values, and strategy	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> </ul>	—	—
102-27	Collective knowledge of highest governance body	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	—	—
102-28	Evaluating the highest governance body's performance	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-29	Identifying and managing economic, environmental, and social impacts	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">CSR Management and Advancement Structure</a></li> <li>› <a href="#">Compliance</a></li> <li>› <a href="#">Risk Management</a></li> <li>› <a href="#">JSR Report</a></li> </ul>	6.2	—
102-30	Effectiveness of risk management processes	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">Risk Management</a></li> <li>› <a href="#">Responsible Care</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> <li>› <a href="#">JSR Report</a></li> </ul>	—	—
102-31	Review of economic, environmental, and social topics	<ul style="list-style-type: none"> <li>› <a href="#">CSR Management and Advancement Structure</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-32	Highest governance body's role in sustainability reporting	<ul style="list-style-type: none"> <li>› <a href="#">CSR Management and Advancement Structure</a></li> </ul>	—	—
102-33	Communicating critical concerns	<ul style="list-style-type: none"> <li>› <a href="#">CSR Management and Advancement Structure</a></li> <li>› <a href="#">Risk Management</a></li> </ul>	6.2	—
102-34	Nature and total number of critical concerns	—	—	—
102-35	Remuneration policies	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance Report</a> </li> <li>› <a href="#">ESG Data: Policy/Guidelines/Philosophy</a> </li> </ul>	6.2	—
102-36	Process for determining remuneration	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Governance Report</a> </li> <li>› <a href="#">ESG Data: Policy/Guidelines/Philosophy</a> </li> </ul>	—	—
102-37	Stakeholders' involvement in remuneration	<ul style="list-style-type: none"> <li>› <a href="#">Communication with Stakeholders (Shareholders and Investors)</a></li> <li>› <a href="#">Corporate Governance</a></li> <li>› <a href="#">Corporate Governance Report</a> </li> </ul>	6.2	—
102-38	Annual total compensation ratio	—	—	—
102-39	Percentage increase in annual	—	—	—

	total compensation ratio			
<b>5. Stakeholder engagement</b>				
102-40	List of stakeholder groups	<ul style="list-style-type: none"> <li>› <a href="#">Corporate Mission and CSR Philosophy</a></li> </ul>	6.2	—
102-41	Collective bargaining agreements	<ul style="list-style-type: none"> <li>› <a href="#">Labor Environment</a></li> </ul>	6.3.10 6.4 6.4.3 6.4.4 6.4.5	1, 3
102-42	Identifying and selecting stakeholders	<ul style="list-style-type: none"> <li>› <a href="#">Priority Issues to be Addressed by JSR Group</a></li> </ul>	6.2	—
102-43	Approach to stakeholder engagement	<ul style="list-style-type: none"> <li>› <a href="#">Communication with Stakeholders (Customers and Business Partners)</a></li> <li>› <a href="#">Communication with Stakeholders (Employees)</a></li> <li>› <a href="#">Communication with Stakeholders (Communities and Society)</a></li> <li>› <a href="#">Communication with Stakeholders (Shareholders and Investors)</a></li> <li>› <a href="#">Dialogue with Stakeholders</a></li> </ul>	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	<ul style="list-style-type: none"> <li>› <a href="#">Priority Issues to be Addressed by JSR Group</a></li> </ul>	6.2	—
<b>6. Reporting practice</b>				
102-45	Entities included in the consolidated financial statements	<ul style="list-style-type: none"> <li>› <a href="#">JSR Group Profile</a></li> </ul>	6.2	—
102-46	Defining report content and topic Boundaries	<ul style="list-style-type: none"> <li>› <a href="#">Editorial Policy</a></li> </ul>	—	—
102-47	List of material topics	<ul style="list-style-type: none"> <li>› <a href="#">Priority Issues to be Addressed by JSR Group</a></li> </ul>	—	—
102-48	Restatements of information	N/A	—	—
102-49	Changes in reporting	—	—	—
102-50	Reporting period	<ul style="list-style-type: none"> <li>› <a href="#">Editorial Policy</a></li> </ul>	—	—
102-51	Date of most recent report	September 2018	—	—
102-52	Reporting cycle	1 year	—	—
102-53	Contact point for questions regarding the report	<ul style="list-style-type: none"> <li>› <a href="#">Submit Comments concerning the CSR Report Here</a></li> </ul>	—	—
102-54	Claims of reporting in accordance with the GRI Standards	—	—	—
102-55	GRI content index	—	—	—
102-56	External assurance	<ul style="list-style-type: none"> <li>› <a href="#">Independent Review Third-Party Opinion</a></li> </ul>	7.5.3	—

## 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 Compact Principle
<b>GRI 103: Management Approach 2016</b>				
103-1, 103-2, 103-3		<ul style="list-style-type: none"> <li>› <a href="#">Priority Issues to be Addressed by JSR Group</a></li> <li>› <a href="#">JSR Group's Mid-Term CSR Plan</a></li> <li>› <a href="#">Targets and Results</a> 📄</li> </ul>	—	—
<b>Economic Performance 2016</b>				
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	› <a href="#">JSR Report</a>	—	—
201-4	Financial assistance received from government	› <a href="#">JSR Report</a>	—	—
<b>Market Presence 2016</b>				
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	› <a href="#">Labor Environment</a>	6.8 6.8.5 6.8.7	—
<b>Indirect Economic Impacts 2016</b>				
203-1	Infrastructure investments and services supported	› <a href="#">Communication with Stakeholders (Communities and Society)</a>	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 2016				
204-1	Proportion of spending on local suppliers	—	6.6.6 6.8 6.8.5 6.8.7	—
Anti-Corruption 2016				
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	> <a href="#">Compliance</a>	6.6 6.6.3	10
205-3	Confirmed incidents of corruption and actions taken	> <a href="#">ESG Data: Governance Data</a> 📄	6.6 6.6.3	10
Anti-Competitive Behavior 2016				
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)	ISO 26000 Core Subject	UN Global Compact Principle
GRI103: Management Approach 2016				
103-1, 103-2, 103-3		> <a href="#">Priority Issues to be Addressed by JSR Group</a> > <a href="#">JSR Group's Mid-Term CSR Plan</a> > <a href="#">Targets and Results</a> 📄	—	—
Materials 2016				
301-1	Materials used by weight or volume	> <a href="#">Environmental Conservation (Environmental Impact Reduction): Material Balance</a>	6.5.4	7, 8
301-2	Recycled input materials used	—	6.5.4	7, 8
301-3	Reclaimed products and their packaging materials	> <a href="#">Environmental Conservation (Waste Reduction)</a>	6.5.4 6.7.5	7, 8
Energy 2016				
302-1	Energy consumption within the organization	> <a href="#">Environmental Conservation (Environmental Impact Reduction): Material Balance</a> > <a href="#">Environmental Conservation (Climate Change Mitigation)</a> > <a href="#">ESG Data: Environment Data</a> 📄	6.5.4	7, 8
302-2	Energy consumption outside of the organization	> <a href="#">Environmental Conservation (Climate Change Mitigation)</a>	6.5.4	7, 8




		> <a href="#">ESG Data: Environment Data</a> 		
302-3	Energy intensity	> <a href="#">Environmental Conservation (Climate Change Mitigation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4	7, 8
302-4	Reduction of energy consumption	> <a href="#">Environmental Conservation (Climate Change Mitigation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4 6.5.5	7, 8
302-5	Reductions in energy requirements of products and services	> <a href="#">Environmental Conservation (Climate Change Mitigation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4 6.5.5	7, 8
<b>Water and Effluents 2018</b>				
303-1	Interaction with water as a shared resource	> <a href="#">Environmental Conservation (Water Resources Conservation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4 6.5.6	7, 8
303-2	Management of water discharge-related impacts	> <a href="#">Environmental Conservation (Water Resources Conservation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.3 6.5.4 6.5.6	7, 8
303-3	Water withdrawal	> <a href="#">Environmental Conservation (Water Resources Conservation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4 6.5.6	7, 8
303-4	Water discharge	> <a href="#">Environmental Conservation (Water Resources Conservation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.3 6.5.4 6.5.6	7, 8
303-5	Water consumption	> <a href="#">Environmental Conservation (Water Resources Conservation)</a> > <a href="#">ESG Data: Environment Data</a> 	6.5.4 6.5.6	7, 8
<b>Biodiversity 2016</b>				
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	> <a href="#">Environmental Impact Reduction (Biodiversity Conservation)</a>	6.5.6	7, 8
304-3	Habitats protected or restored	> <a href="#">Environmental Impact Reduction (Biodiversity Conservation)</a>	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




<b>Emissions 2016</b>				
305-1	Direct (Scope 1) GHG emissions	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Climate Change Mitigation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.5	7, 8
305-2	Energy indirect (Scope 2) GHG emissions	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Climate Change Mitigation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.5	7, 8
305-3	Other indirect (Scope 3) GHG emissions	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Climate Change Mitigation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.5	7, 8
305-4	GHG emissions intensity	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Climate Change Mitigation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.5	7, 8
305-5	Reduction of GHG emissions	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Climate Change Mitigation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.5	7, 8
305-6	Emissions of ozone-depleting substances (ODS)	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Other Environmental Impact Reduction Efforts)</a></li> </ul>	6.5.3 6.5.5	7, 8
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Other Environmental Impact Reduction Efforts)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.3	7, 8
<b>Effluents and Waste 2016</b>				
306-1	Water discharge by quality and destination	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Water Resources Conservation)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.3 6.5.4	7, 8
306-2	Waste by type and disposal method	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Waste Reduction)</a></li> </ul>	6.5.3	7, 8
306-3	Significant spills	<ul style="list-style-type: none"> <li>&gt; <a href="#">Responsible Care</a></li> <li>&gt; <a href="#">Environmental Conservation (Other Environmental Impact Reduction Efforts)</a></li> </ul>	6.5.3	7, 8
306-4	Transport of hazardous waste	<ul style="list-style-type: none"> <li>&gt; <a href="#">Environmental Conservation (Other Environmental Impact Reduction Efforts)</a></li> <li>&gt; <a href="#">ESG Data: Environment Data</a> </li> </ul>	6.5.3	7, 8
306-5	Water bodies affected by water discharges and/or runoff	N/A	6.5.4	7, 8
<b>Environmental Compliance 2016</b>				
307-1	Non-compliance with environmental laws and regulations	<ul style="list-style-type: none"> <li>&gt; <a href="#">Responsible Care</a></li> </ul>	4.6	7, 8

Supplier Environmental Assessment 2016				
308-1	New suppliers that were screened using environmental criteria	—	6.3.5 6.6.6 7.3.1	7, 8
308-2	Negative environmental impacts in the supply chain and actions taken	—	6.3.5 6.6.6 7.3.1	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 Compact Principle
<b>GRI103: Management Approach 2016</b>				
103-1, 103-2, 103-3		<ul style="list-style-type: none"> <li>&gt; <a href="#">Priority Issues to be Addressed by JSR Group</a></li> <li>&gt; <a href="#">JSR Group's Mid-Term CSR Plan</a></li> <li>&gt; <a href="#">Targets and Results</a> </li> </ul>	—	—
<b>Employment 2016</b>				
401-1	New employee hires and employee turnover	<ul style="list-style-type: none"> <li>&gt; <a href="#">ESG Data: Social Data</a> </li> <li>&gt; <a href="#">Diversity</a></li> </ul>	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	<ul style="list-style-type: none"> <li>&gt; <a href="#">ESG Data: Social Data</a> </li> <li>&gt; <a href="#">Diversity</a></li> </ul>	6.4 6.4.3	6
<b>Labor/Management Relations 2016</b>				
402-1	Minimum notice periods regarding operational changes	—	6.4 6.4.3 6.4.4 6.4.5	—
<b>Occupational Health and Safety 2018</b>				
403-1	Occupational health and safety management system	> <a href="#">Health and Safety Initiatives</a>	6.4.6	—
403-2	Hazard identification, risk assessment, and incident investigation	> <a href="#">Health and Safety Initiatives</a>	6.4.6	—
403-3	Occupational health services	> <a href="#">Health and Safety Initiatives</a>	6.4.4	—
403-4	Worker participation, consultation, and communication on occupational health and safety	> <a href="#">Health and Safety Initiatives</a>	6.4.7	1
403-5	Worker training on occupational health and safety	> <a href="#">Health and Safety Initiatives</a>	6.4.7	—
403-6	Promotion of worker health	> <a href="#">Labor Environment</a>	6.4.4	—

403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	> <a href="#">Chemical and Product Safety</a>	6.4.6	—
403-8	Workers covered by an occupational health and safety management system	—	6.4.3 6.4.6	—
403-9	Work-related injuries	> <a href="#">ESG Data: Social Data</a>  > <a href="#">Health and Safety Initiatives</a>	6.4.3 6.4.4 6.4.6	1
403-10	Work-related ill health	> <a href="#">Labor Environment</a>	6.4.3 6.4.4	1
<b>Training and Education 2016</b>				
404-1	Average hours of training per year per employee	> <a href="#">ESG Data: Social Data</a> 	6.4 6.4.7	—
404-2	Programs for upgrading employee skills and transition assistance programs	> <a href="#">Labor Environment</a> > <a href="#">Diversity</a>	6.4 6.4.7 6.8.5	6
404-3	Percentage of employees receiving regular performance and career development reviews	> <a href="#">Labor Environment</a>	6.4 6.4.7	—
<b>Diversity and Equal Opportunity 2016</b>				
405-1	Diversity of governance bodies and employees	> <a href="#">Labor Environment</a> > <a href="#">ESG Data: Social Data</a> 	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	—
<b>Non-Discrimination 2016</b>				
406-1	Incidents of discrimination and corrective actions taken	> <a href="#">Compliance</a>	6.3 6.3.6 6.3.7 6.3.10 6.4.3	—
<b>Freedom of Association and Collective Bargaining 2016</b>				
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	—	6.3 6.3.3 6.3.4 6.3.5 6.3.8 6.3.10 6.4.3 6.4.5	—
<b>Child Labor 2016</b>				
408-1	Operations and suppliers at significant risk for incidents of child labor	> <a href="#">Supply Chain Management</a> > <a href="#">Human Rights</a>	6.3 6.3.3	—

			6.3.4 6.3.5 6.3.7 6.3.10	
<b>Forced or Compulsory Labor 2016</b>				
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labor	<ul style="list-style-type: none"> <li>&gt; <a href="#">Supply Chain Management</a></li> <li>&gt; <a href="#">Human Rights</a></li> </ul>	6.3 6.3.3 6.3.4 6.3.5 6.3.7 6.3.10	—
<b>Security Practices 2016</b>				
410-1	Security personnel trained in human rights policies or procedures	<ul style="list-style-type: none"> <li>&gt; <a href="#">Compliance</a></li> <li>&gt; <a href="#">Human Rights</a></li> </ul>	6.3 6.3.5 6.4.3 6.6.6	—
<b>Rights of Indigenous Peoples 2016</b>				
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	—
<b>Human Rights Assessment 2016</b>				
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	> <a href="#">Compliance</a>	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	—
<b>Local Communities 2016</b>				
413-1	Operations with local community engagement, impact assessments, and development programs	> <a href="#">Communication with Stakeholders (Communities and Society)</a>	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
<b>Supplier Social Assessment 2016</b>				
414-1	New suppliers that were screened using social criteria	> <a href="#">Supply Chain Management</a>	—	—
414-2	Negative social impacts in the supply	> <a href="#">Supply Chain Management</a>	—	—

	chain and actions taken			
<b>Public Policy 2016</b>				
415-1	Political contributions	> <a href="#">ESG Data: Governance Data</a> 	—	—
<b>Customer Health and Safety 2016</b>				
416-1	Assessment of the health and safety impacts of product and service categories	> <a href="#">Chemical and Product Safety</a>	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	> <a href="#">Responsible Care</a>	6.3.9 6.6.6 6.7 6.7.4 6.7.5	—
<b>Marketing and Labeling 2016</b>				
417-1	Requirements for product and service information and labeling	> <a href="#">Chemical and Product Safety</a>	6.7 6.7.3 6.7.4 6.7.5 6.7.6 6.7.9	—
417-2	Incidents of non-compliance concerning product and service information and labeling	> <a href="#">Chemical and Product Safety</a>	6.7 6.7.3 6.7.4 6.7.5 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	—
<b>Customer Privacy 2016</b>				
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	N/A	6.7 6.7.7	—
<b>Socioeconomic Compliance 2016</b>				
419-1	Non-compliance with laws and regulations in the social and economic area	> <a href="#">ESG Data: Governance Data</a> 	6.6 6.6.3 6.6.7 6.8.7	—



## Evaluation by Outside Organization and Independent Review

- ↓ [1. Evaluation by Outside Organization](#)
- ↓ [2. Independent Review](#)

### 1. Evaluation by Outside Organization

#### (1) Inclusion in ESG indexes, socially responsible investment (SRI) indexes and investment universes (Current as of July 1, 2019)

The JSR Group is highly regarded for its CSR activities and other non-financial initiatives, as reflected by its inclusion in international socially responsible investment indexes and investment universes. Also, the JSR Group has been selected for inclusion in the FTSE Blossom Japan Index and MSCI Japan Empowering Women Index (WIN), S&P / JPX Carbon Efficient Index, these of which are ESG indexes selected by the Government Pension Investment Fund (GPIF).



FTSE Blossom  
Japan

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)



MSCI Japan Empowering  
Women Index (WIN)

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.\*



FTSE4Good

For 16 consecutive years since 2004 we have been selected by FTSE Russell as a constituent of the FTSE4Good Index Series.



We are reconfirmed for inclusion in the EURONEXT Vigeo Eiris World 120 Index as a global company with outstanding ESG (environment, social, governance) performance.



On June 30, 2017, we were reconfirmed for inclusion in the Ethibel Pioneer & Excellence Investment Registers, which is an international SRI universe.



In recognition of our standing as a company with a high ESG (Environment, Social, and Governance) evaluation, we are reconfirmed by Sompo Japan Nipponkoa Asset Management Co., Ltd. (SNAM) as a brand for investment to be included in the SNAM Sustainable Investment Fund.

Additionally, the JSR Group has continually been ranked in the Global Compact 100 since FY2013.

\* The inclusion of JSR Corporation in MSCI indexes, as well as the use of the MSCI logo, trademark, service mark and index name, does not constitute support, endorsement or promotion of MSCI or any MSCI-affiliated company by JSR Corporation. MSCI indexes are the sole property of MSCI.

MSCI and all MSCI index names and logos are the trademark or service mark of MSCI and its affiliated companies.

## (2) Evaluation by non-ESG evaluation organizations



"White 500" - 2019 Certified Health & Productivity Management Outstanding Organizations Recognition Program (Large Enterprise Category)

We were selected by the Ministry of Economy, Trade and Industry and the Nippon Kenko Kaigi as one of the top 500 companies in Japan in terms of outstanding health and productivity management practices.



"White 500" - 2019 Certified Health & Productivity Management Outstanding Organizations Recognition Program (SME Category)

In the SME Enterprise Category, JSR Group member companies JSR Micro Kyushu Co., Ltd., Japan Coloring Co., Ltd., Elastomix Co., Ltd., JSR Logistics & Customer Center Co., Ltd. and JSR Kenko Hoken Kumiai were selected.

## (3) Major awards and commendations received in FY2018

Award Sponsor	Award Name	Winner
New Office Promotion Association, Nikkei Inc.	Chubu New Office Promotion Award	JSR Yokkaichi Plant
Kamisu City	Commendation for Efforts Toward the Formation of a Gender-Equal Society	JSR Kashima Plant
Saga Prefecture	Saga Saiko Award ("Promotion of Participation by Women" Category)	JSR Micro Kyushu
Mie Labour Bureau	Mie Labor Bureau Director's Award	E-Tec Co., Ltd.
Central Taiwan Science Park	Outstanding Workplace Safety Award (Factory Safety)	JSR Micro Taiwan Co., Ltd.
Central Taiwan Science Park	Special Achievement Award ("Excellence in Waste Reduction and Resource Recycling" Category)	JSR Micro Taiwan Co., Ltd.

## 2. 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 2019.

> [Click here for the Independent Review Report \(PDF 977KB\)](#)

# Report Downloads

- ↓ [1. JSR Group CSR Reports](#)
- ↓ [2. JSR Micro, Inc. CSR Report](#)
- ↓ [3. JSR Micro N.V. CSR Report](#)
- ↓ [4. JSR Plant Responsible Care Reports](#)

## 1. JSR Group CSR Reports

The CSR Report 2019 is issued as a Detailed Version and a Highlight Version.

Name	Content	Website	PDF for Download
Detailed Version	Comprehensive report of JSR Group's CSR activities	○	○
Highlight Version	Presentation of highlights selected from JSR Group's CSR activities in FY2018		○

### CSR Report 2019 (April 1, 2018 – March 31, 2019)




- > [Detailed Version Website](#)
- > [Highlight Version \[Two-Page Spread Type\] \(PDF 4.6MB\)](#)
- > [Highlight Version \[A4-Size Page Type\] \(PDF 4.6MB\)](#)

The entirety of the Online Version has been converted into the PDF format (**Full PDF version**) and can be viewed [here](#). (PDF 10.9MB)


### CSR Report 2018 (April 1, 2017 –March 31, 2018)

- > [Detailed Version Website](#)
- > [Highlight Version \(PDF 5.7MB\)](#)


### CSR Report 2017 (April 1, 2016 –March 31, 2017)

- 
- > [Online Version](#)
  - > [Highlight Version \(PDF 4.8MB\)](#) 

### **CSR Report 2016 (April 1, 2015 –March 31, 2016)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 4.6MB\)](#) 


### **CSR Report 2015 (April 1, 2014 –March 31, 2015)**

- 
- > [Online Version](#)
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### **CSR Report 2014 (April 1, 2013 –March 31, 2014)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 11.5MB\)](#) 


### **CSR Report 2013 (April 1, 2012 –March 31, 2013)**

- 
- > [Online Version](#)
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### **CSR Report 2012 (April 1, 2011 –March 31, 2012)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 5.7MB\)](#) 


### **CSR Report 2011 (April 1, 2010 –March 31, 2011)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 3.6MB\)](#) 

### **CSR Report 2010 (April 1, 2009 –March 31, 2010)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 2.5MB\)](#) 

### **CSR Report 2009 (April 1, 2008 –March 31, 2009)**

- 
- > [Online Version](#)
  - > [Print Version \(PDF 1.3MB\)](#) 

## **2. 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 2019 \(PDF 1.9MB\)](#) 

- > [JSR Micro N.V. CSR Report 2017 \(PDF 0.8MB\)](#) 
- > [JSR Micro N.V. CSR Report 2015 \(PDF 4.3MB\)](#) 

### 4. JSR Plant Responsible Care Reports

#### Responsible care report of each Plant (Japanese only)

- > [Yokkaichi Plant Responsible Care Report](#)
- > [Chiba Plant Responsible Care Report](#)
- > [Kashima Plant Responsible Care Report](#)

## Corporate Information

# JSR Group Profile

- [↓ 1. JSR Profile \(as of March 31, 2019\)](#)
- [↓ 2. JSR Group's Major Business \(as of March 31, 2019\)](#)
- [↓ 3. JSR Corporation's Business Establishments \(as of March 31, 2019\)](#)
- [↓ 4. JSR Group Companies \(as of March 31, 2019\)](#)
- [↓ 5. Financial Information](#)

### 1. JSR Profile (as of March 31, 2019)

<b>Company name</b>	JSR Corporation
<b>Established</b>	December 10, 1957
<b>Head office</b>	Shiodome Sumitomo Building, 1-9-2 Higashi-Shimbashi, Minato-ku, Tokyo, Japan
<b>President</b>	Mitsunobu Koshiba
<b>Capital</b>	23,370 million yen
<b>Number of employees</b>	8,748

### 2. JSR Group's Major Business (as of March 31, 2019)

The manufacture and sale of the following products

Type of business		Main products
Elastomers Business	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, and refined processed products made from raw latex
	Functional chemicals	High-performance coating materials, high-function dispersant, industrial particles, latent heat storage materials, heat reflection paint material, and battery material
	Other	Chemical products such as butadiene monomers
Plastics Business		Synthetic resins such as ABS resin, AES resin, AS resin, and ASA resin

Digital Solutions Business	Semiconductor Materials	Lithography materials (photo resist and multi-layering materials), packaging materials, cleaning solutions, and CMP materials
	Display Materials	Color LCD materials and functional coating
	Edge Computing	Heat-resistant transparent resin, functional films, high-performance UV curable resins, stereolithography, and photo molding
Life Sciences Business		In vitro reagents for diagnostics and/or research, raw materials for such reagents, bioprocess materials, contract development, manufacturing of biopharmaceuticals), services to support drug development in pre-clinical phases
Other Businesses		Lithium ion capacitors

### 3. JSR Corporation's Business Establishments (as of March 31, 2019)

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

### 4. JSR Group Companies (as of March 31, 2019)

Consolidated companies: 53 companies

Equity method affiliates: 17 companies



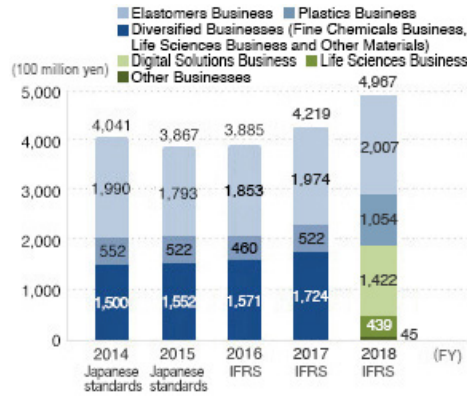
Scope of RC reporting: 18 companies

Details are provided in ESG Data.

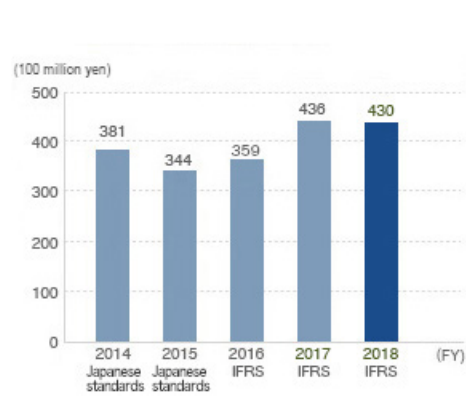
> [ESG Data: JSR Group Companies](#) 

## 5. Financial Information

### Revenue (consolidated)

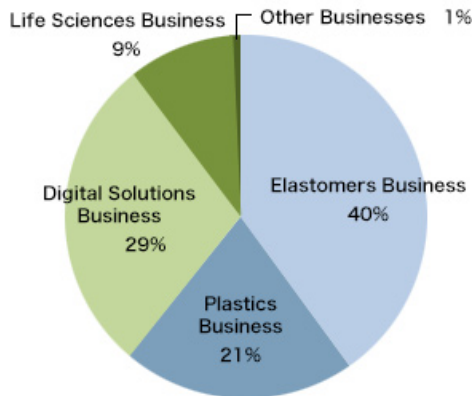


### Operating Income (consolidated)



Note: Reporting segment classifications were changed in FY2018.

### FY2018 Revenue (Consolidated) Composition Ratios



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# JSR Group ESG Data

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Unless otherwise noted, FY (Fiscal Year) means the year starting April 1st. For example, FY2018 means April 1, 2018 - March 31, 2019

For both absolute values and percentages, numerical values that fall below the shown number of digits are rounded off. For this reason, the sums of individual numbers may differ from the sum values provided.



JSR Corporation

Created June, 2019

## ◆ Environment Data

### Environmental Impact of Business Activities

Category	Items	Boundary ※			Unit	FY2014	FY2015	FY2016	FY2017	FY2018		
		A	B	C								
Input Data	Raw materials consumption		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 kL	1,291	1,320	1,357	1,400	1,391	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		821	817	824	828	823	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		377	398	413	428	414	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		92	104	121	144	154	
	Energy consumption	(Crude oil equivalent)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 kL	382	397	412	422	430	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		266	268	268	266	269	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		73	77	79	80	80	
		Intensity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	kL/ton	44	52	65	75	81	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.35	0.37	0.36	0.35	0.36	
	Water consumption	(Excluding seawater)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 m <sup>3</sup>	19,712	19,548	19,604	19,788	21,234	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		14,875	14,600	14,447	14,259	15,275	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		3,965	3,956	3,762	3,832	3,691	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		872	992	1,396	1,697	2,268	
		Intensity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	m <sup>3</sup> /ton	19.5	20.0	19.6	19.0	20.5	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		10.3	9.7	9.0	8.7	8.5	
		Industrial water		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 m <sup>3</sup>	9.7	9.9	11.8	12.4	15.8
				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		14,359	14,190	13,917	13,667	14,790
				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		357	253	354	393	313
				<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		159	158	176	200	172
Recycled water		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	%	4,249	4,159	4,193	4,250	4,481		
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		28.6	28.5	29.0	29.8	29.3		
Effective use rate of recycled water		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>								
Seawater consumption	(For cooling)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 m <sup>3</sup>	57,395	54,725	55,413	55,011	64,296		
Output Data	Total generated		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 tons	1,239	1,240	1,275	1,330	1,322	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		765	731	738	752	746	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		385	409	418	440	432	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		90	100	118	137	144	
	Industrial waste generated		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 tons	78	83	79	72	72	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		59	58	55	49	50	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		15	20	19	18	16	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		4	4	5	5	7	
		Comparison with FY2013		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	%	12.7	11.1	6.2	-5.5	-4.5
	Intensity		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tons/tons	0.077	0.079	0.075	0.065	0.067	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.040	0.050	0.045	0.040	0.037	
	Recycled waste		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 tons	0.045	0.044	0.040	0.039	0.046	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		39	44	43	39	38	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		25	25	25	23	21	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		12	17	16	14	12	
	Intensity		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tons/tons	2	2	2	2	5	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.032	0.034	0.033	0.031	0.028	
			<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.032	0.042	0.037	0.032	0.028	
	Amount of final offsite-landfills		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	1,000 tons	0.022	0.021	0.020	0.016	0.037	
<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	1.0		0.8	1.1	0.9	0.9		
<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	0		0	0	0	0		
<input type="radio"/>			<input type="radio"/>	<input type="radio"/>	0.2		0.2	0.2	0.2	0.3		
Intensity		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Tons/tons	0.8	0.6	1.0	0.7	0.6		
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0	0	0	0	0		
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.0005	0.0005	0.0004	0.0004	0.0008		
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		0.0091	0.0063	0.0081	0.0053	0.0039		

\*Boundaries A: JSR Corporation B: Group companies in Japan C: Group companies in other countries

Category	Items	Boundary ※			Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
		A	B	C							
O u t p u t  D a t a	Greenhouse gas emissions	Scope1 + Scope2	○	○	○	1,000 tons CO <sub>2</sub>	964	994	1,032	1,053	1,078
			○	○	○	1,000 tons CO <sub>2</sub>	659	651	658	653	666
			○	○	○	1,000 tons CO <sub>2</sub>	197	213	212	210	214
			○	○	○	1,000 tons CO <sub>2</sub>	108	129	163	190	197
		Comparison with FY2013	○	○	○	%	2.0	0.8	1.8	1.1	3.1
		Intensity	○	○	○	Tons/tons	0.86	0.89	0.89	0.87	0.89
	Waste water	Total amount of waste water	○	○	○	1,000 m <sup>3</sup>	16,397	16,147	16,912	16,968	17,587
			○	○	○	1,000 m <sup>3</sup>	11,974	11,755	12,161	12,108	12,479
			○	○	○	1,000 m <sup>3</sup>	3,864	3,833	3,930	3,975	4,077
		Intensity	○	○	○	m <sup>3</sup> /ton	558	559	821	885	1,031
			○	○	○	m <sup>3</sup> /ton	15.7	16.1	16.5	16.1	16.7
			○	○	○	m <sup>3</sup> /ton	10.0	9.4	9.4	9.0	9.4
	Waste water	COD	○	○	○	Tons	6.2	5.6	7.0	6.4	7.2
			○	○	○	Tons	496	493	531	530	577
			○	○	○	Tons	445	444	459	457	479
		Intensity	○	○	○	x10 <sup>-5</sup> tons/tons	51	50	72	74	98
			○	○	○	x10 <sup>-5</sup> tons/tons	581	607	622	607	642
		Total nitrogen	○	○	○	Tons	134	121	172	167	227
			○	○	○	Tons	146	164	155	173	142
			○	○	○	Tons	124	148	139	156	128
Intensity		○	○	○	x10 <sup>-5</sup> tons/tons	22	17	16	18	14	
		○	○	○	x10 <sup>-5</sup> tons/tons	163	202	188	207	171	
Total phosphorus	○	○	○	Tons	56	40	38	40	33		
	○	○	○	Tons	1	1	1	1	1		
	○	○	○	Tons	0.3	0.4	0.7	0.7	0.6		
	○	○	○	Tons	0.3	0.4	0.3	0.3	0.5		
Intensity	○	○	○	x10 <sup>-5</sup> tons/tons	0.4	0.6	1.0	0.9	0.7		
	○	○	○	x10 <sup>-5</sup> tons/tons	0.8	1.0	0.6	0.7	1.1		
Atmospheric emissions	SO <sub>x</sub>	○	○	○	Tons	12	12	12	13	13	
		○	○	○	Tons	5	4	5	5	4	
	Intensity	○	○	○	x10 <sup>-5</sup> tons/tons	7	8	7	8	9	
		○	○	○	x10 <sup>-5</sup> tons/tons	0.6	0.6	0.7	0.6	0.5	
	NO <sub>x</sub>	○	○	○	Tons	1.8	1.9	1.7	1.9	2.1	
		○	○	○	Tons	353	374	338	369	341	
	Intensity	○	○	○	Tons	322	342	305	335	308	
		○	○	○	x10 <sup>-5</sup> tons/tons	31	32	33	34	33	
VOC	○	○	○	Tons	42	47	41	45	41		
	○	○	○	Tons/tons	8.2	7.9	8.0	7.8	7.7		
PRTR (In Japan only)	Amount handled	○	○	○	Tons	937,292	922,315	966,150	981,530	960,932	
		○	○	○	Tons	734,653	697,558	734,202	739,259	725,727	
		○	○	○	Tons	202,639	224,757	231,947	242,272	235,205	
	Atmospheric emissions	○	○	○	Tons	164	186	163	168	134	
		○	○	○	Tons	105	107	108	119	95	
	Water supply discharge	○	○	○	Tons	59	79	55	50	39	
		○	○	○	Tons	10	9	10	10	11	
	Transported waste	○	○	○	Tons	3	2	3	2	3	
		○	○	○	Tons	7	7	7	8	8	
		○	○	○	Tons	719	862	800	1,032	890	
		○	○	○	Tons	284	386	272	445	328	
	○	○	○	Tons	435	476	527	587	562		

\*Boundaries A: JSR Corporation B: Group companies in Japan C: Group companies in other countries

## Accounting for Greenhouse Gas Emissions Throughout the Supply Chain

Note: From FY 2018, other indirect emissions (Scope 3) category 1 has been changed to be calculated for all JSR Group.

Category	Boundary	FY2014 Emission		FY2015 Emission		FY2016 Emission		FY2017 Emission		FY2018 Emission	
		t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)
I. Direct emissions (Scope 1)	JSR Group	430,136	42.1	414,132	39.3	434,734	25.8	421,348	24.7	443,176	20.1
II. Energy-derived indirect emissions (Scope 2)		533,470	52.2	579,420	55.0	597,369	35.5	632,045	37.1	634,567	28.8
III. Other indirect emissions (Scope 3)		59,152	5.8	59,828	5.7	651,797	38.7	649,936	38.2	1,126,703	51.1
I. Direct emissions (Scope 1)	JSR Corporation	398,027	56.9	379,520	55.1	397,763	30.9	383,394	29.9	404,131	31.5
II. Energy-derived indirect emissions (Scope 2)		260,928	37.3	271,750	39.5	259,969	20.2	269,797	21.1	262,009	20.5
III. Other indirect emissions (Scope 3)		41,041	5.9	37,131	5.4	629,484	48.9	627,963	49.0	614,841	48.0
I. Direct emissions (Scope 1)	Group companies in Japan	26,304	12.5	28,086	12.2	30,247	13.2	30,884	13.6	29,951	5.1
II. Energy-derived indirect emissions (Scope 2)		170,459	81.1	185,142	80.2	181,281	79.4	179,553	79.3	184,183	31.5
III. Other indirect emissions (Scope 3)		13,464	6.4	17,661	7.6	16,830	7.4	15,876	7.0	371,470	63.4
I. Direct emissions (Scope 1)	Group companies in other countries	5,806	5.2	6,527	4.9	6,724	4.0	7,070	3.6	9,094	2.7
II. Energy-derived indirect emissions (Scope 2)		102,082	90.7	122,528	91.4	156,118	92.7	182,695	93.3	188,376	55.8
III. Other indirect emissions (Scope 3)		4,647	4.1	5,037	3.8	5,483	3.3	6,096	3.1	140,392	41.6

### Other indirect emissions (Breakdown of Scope 3)

#### (1) JSR Corporation

Category	Boundary	FY2014 Emission		FY2015 Emission		FY2016 Emission		FY2017 Emission		FY2018 Emission	
		t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)
Category 1	Purchased goods and services	–	–	–	–	552,567	87.8	547,887	87.2	540,653	87.9
Category 2	Capital goods	–	–	–	–	37,553	6.0	40,628	6.5	35,907	5.8
Category 3	Fuel and energy related activities not included in Scope 1 or 2	10,273	25.0	6,551	17.6	6,713	1.1	6,788	1.1	6,958	1.1
Category 4	Transportation and delivery (upstream)	12,028	29.3	12,172	32.8	14,133	2.2	13,177	2.1	13,112	2.1
Category 5	Waste from business operations	5,410	13.2	5,899	15.9	5,777	0.9	6,886	1.1	5,738	0.9
Category 6	Business travel	321	0.8	327	0.9	330	0.1	328	0.1	338	0.1
Category 7	Employee commuting	1,159	2.8	1,182	3.2	1,194	0.2	1,184	0.2	1,221	0.2
Category 8	Leased assets (upstream)	22	0.1	24	0.1	24	0.0	19	0.0	19	0.0
Category 9	Transportation and delivery (downstream)	11,770	28.7	10,916	29.4	11,156	1.8	11,065	1.8	10,894	1.8
Category 10	Processing of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 11	Use of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 12	Disposal of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 13	Leased assets (downstream)	59	0.1	59	0.2	38	0.0	0	0.0	0	0.0
Category 14	Franchises	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Category 15	Investments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Total of Scope3  
(Category 1- Category 15)

41,041    100    37,131    100    629,484    100    627,963    100    614,841    100  
(N/A: not applicable, –: no data)

**(2) Group companies in Japan**

Category	Boundary	FY2014 Emission		FY2015 Emission		FY2016 Emission		FY2017 Emission		FY2018 Emission	
		t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)
Category 1	Purchased goods and services	-	-	-	-	-	-	-	-	357,325	96.2
Category 2	Capital goods	-	-	-	-	-	-	-	-	-	-
Category 3	Fuel and energy related activities not included in Scope 1 or 2	-	-	-	-	-	-	-	-	-	-
Category 4	Transportation and delivery (upstream)	-	-	-	-	-	-	-	-	-	-
Category 5	Waste from business operations	12,243	90.9	16,462	93.2	15,584	92.6	14,600	92.0	12,872	3.5
Category 6	Business travel	248	1.8	244	1.4	241	1.4	243	1.5	253	0.1
Category 7	Employee commuting	896	6.7	880	5.0	870	5.2	877	5.5	911	0.2
Category 8	Leased assets (upstream)	42	0.3	33	0.2	26	0.2	24	0.2	21	0.0
Category 9	Transportation and delivery (downstream)	-	-	-	-	-	-	-	-	-	-
Category 10	Processing of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 11	Use of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 12	Disposal of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 13	Leased assets (downstream)	35	0.3	42	0.2	108	0.6	132	0.8	89	0.0
Category 14	Franchises	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Category 15	Investments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total of Scope3 (Category 1- Category 15)		13,464	100	17,661	100	16,830	100	15,876	100	371,470	100

(N/A: not applicable, -: no data)

**(3) Group Companies in other countries**

Category	Boundary	FY2014 Emission		FY2015 Emission		FY2016 Emission		FY2017 Emission		FY2018 Emission	
		t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)	t-CO <sub>2</sub>	ratio (%)
Category 1	Purchased goods and services	-	-	-	-	-	-	-	-	132,934	94.7
Category 2	Capital goods	-	-	-	-	-	-	-	-	-	-
Category 3	Fuel and energy related activities not included in Scope 1 or 2	-	-	-	-	-	-	-	-	-	-
Category 4	Transportation and delivery (upstream)	-	-	-	-	-	-	-	-	-	-
Category 5	Waste from business operations	3,296	70.9	3,595	71.4	3,854	70.3	4,427	72.6	5,382	3.8
Category 6	Business travel	165	3.5	181	3.6	172	3.1	180	3.0	190	0.1
Category 7	Employee commuting	593	12.8	654	13.0	621	11.3	650	10.7	685	0.5
Category 8	Leased assets (upstream)	584	12.6	600	11.9	835	15.2	839	13.8	839	0.6
Category 9	Transportation and delivery (downstream)	-	-	-	-	-	-	-	-	-	-
Category 10	Processing of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 11	Use of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 12	Disposal of sold products	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Category 13	Leased assets (downstream)	9	0.2	6	0.1	0	0.0	0	0.0	362	0.3
Category 14	Franchises	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Category 15	Investments	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total of Scope3 (Category 1- Category 15)		4,647	100	5,037	100	5,483	100	6,096	100	140,392	100

(N/A: not applicable, -: no data)



## Categories of Greenhouse Gas Emissions Throughout the Supply Chain and Emissions Subject to Calculation

Category	Emissions subject to calculation
I. Direct emissions (Scope 1)	<ul style="list-style-type: none"> <li>■ Direct emissions from the use of fuel and industrial processes by the reporting company</li> </ul>
II. Energy-derived indirect emissions (Scope 2)	<ul style="list-style-type: none"> <li>■ Emissions from the use of electricity and heat purchased by the reporting company</li> </ul>
III. Other indirect emissions (Scope 3)	<ul style="list-style-type: none"> <li>• Added as a new calculation item in FY2016</li> <li>• Expansion of calculation range for some new items in FY2018</li> </ul>

### Other indirect emissions (Breakdown of Scope 3)

Category 1	<p>Emissions from activities up to the manufacture of raw materials, parts, purchased goods, sales-related materials, etc.</p> <ul style="list-style-type: none"> <li>• Calculated for JSR only from FY2016.</li> <li>• Expansion of calculation range for some new items in FY2018.</li> </ul>
Category 2	<p>Emissions from the construction and manufacturing of the reporting company's capital goods</p> <ul style="list-style-type: none"> <li>• Calculated for JSR only from FY2016.</li> </ul>
Category 3	<p>Emissions from the procurement of fuel used in power generation, etc., for electricity and heat procured from other entities</p> <ul style="list-style-type: none"> <li>• Calculated for JSR only.</li> </ul>
Category 4	<p>(1) Emissions from the distribution of raw materials, parts, purchased goods, sales-related materials, etc., up to delivery to the reporting company</p> <p>(2) Emissions (emissions from the distribution paid for by the reporting company) amount of activity from distribution services other than (1) above (transport, handling, and storage) purchased in the fiscal year of the report: Amount of shipment distribution in Japan and other countries</p> <ul style="list-style-type: none"> <li>• Calculated for JSR only.</li> </ul>
Category 5	<p>Emissions from the transportation and processing of waste generated by the reporting company</p>
Category 6	<p>Emissions from employee business travel</p>
Category 7	<p>Emissions from employee transportation when commuting to and from the place of business</p>
Category 8	<p>Emissions from the operation of assets leased to the reporting company (excluding emissions calculated under Scope 1 or 2)</p>
Category 9	<p>Emissions from the transport, storage, cargo handling, and retail sales of products (limited to those items not paid for by the reporting company)</p> <ul style="list-style-type: none"> <li>• Calculated for JSR only.</li> </ul>
Category 10	<p>Emissions from the processing of intermediate products by the reporting company</p>
Category 11	<p>Emissions from the use of products by users (consumers and companies)</p> <ul style="list-style-type: none"> <li>• This category is excluded from calculation because the company is a chemical intermediates manufacturer and the category is not applicable to the use of sold products.</li> </ul>
Category 12	<p>Emissions from the transportation and processing of products upon disposal by users (consumers and companies)</p> <ul style="list-style-type: none"> <li>• This category is excluded from calculation because the company is a chemical intermediates manufacturer.</li> </ul>
Category 13	<p>Emissions from the operation of assets leased to other entities</p>
Category 14	<p>Emissions from franchises</p> <ul style="list-style-type: none"> <li>• No emissions; business structures are not franchises.</li> </ul>
Category 15	<p>Emissions from investment to earn profit</p> <ul style="list-style-type: none"> <li>• This category is excluded from calculation because it is not applicable to "investment to earn profit."</li> </ul>

## FY2018 Emissions of Chemical Substances (PRTR)

Totals for JSR Corporation (Yokkaichi Plant, Chiba Plant, Kashima Plant and Tsukuba Research Laboratories)

Ordinance designated number	Substance	Amounts handled* <sup>2</sup> (t)	Emissions			Transfers* <sup>3</sup> (t)
			Atmosphere (t)	Water (t)	Soil (t)	
1	Zinc compounds (water-soluble)	1.3	0.0	1.3	0.0	0.0
2	Acrylamide	68.1	0.0	0.0	0.0	0.0
4	Acrylic acid and its water-soluble salts	1,076.5	0.0	0.0	0.0	0.0
7	n-Butyl acrylate	7.7	0.0	0.0	0.0	0.0
9	Acrylonitrile	16,140.1	0.4	0.0	0.0	1.1
13	Acetonitrile	107.4	0.2	0.6	0.0	10.6
20	2-Aminoethanol	1.1	0.0	0.0	0.0	0.0
28	Allyl alcohol	7.6	0.0	0.0	0.0	7.1
30	n-Alkylbenzenesulfonic acid and its salts (limited to those with 10 to 14 alkyl group carbons and their mixtures)	637.4	0.0	0.0	0.0	0.0
36	Isoprene	64,609.1	0.2	0.0	0.0	0.2
53	Ethylbenzene	1.3	0.0	0.0	0.0	0.0
71	Ferric chloride	21.4	0.0	0.0	0.0	0.0
80	Xylene	2.6	0.0	0.0	0.0	0.3
86	Cresol	7.1	0.0	0.0	0.0	0.0
150	1,4-Dioxane	1.4	0.0	0.0	0.0	1.3
186	Dichloromethane (also called methylene chloride)	11.2	2.7	0.0	0.0	4.2
190	Dicyclopentadiene	14,466.5	0.1	0.0	0.0	31.9
202	Divinylbenzene	28.6	0.0	0.0	0.0	0.0
203	Diphenylamine	59.0	0.0	0.0	0.0	0.0
207	2,6-di-tert-butyl-4-cresol (also called BHT)	632.5	0.5	0.0	0.0	0.0
220	Water-soluble salts of dimethyldithiocarbamic acid	51.2	0.0	0.0	0.0	0.0
230	N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine	233.2	0.0	0.0	0.0	0.0
240	Styrene	60,978.0	7.5	0.0	0.0	0.9
274	Tert-dodecanethiol	636.9	0.0	0.0	0.0	0.0
276	3, 6, 9-triazaundecane-1, 11-diamine (also called tetraethylenepentamine)	12.6	0.0	0.0	0.0	0.6
300	Toluene	2,165.6	53.0	0.1	0.0	174.3
321	Vanadium compounds	37.3	0.0	0.0	0.0	36.5
337	4-Vinyl-1-cyclohexene	110.0	0.0	0.0	0.0	0.6
351	1,3-Butadiene	560,907.4	7.5	0.0	0.0	1.5
355	Bis (2-ethylhexyl) phthalate	54.0	0.0	0.0	0.0	0.1
392	n-Hexane	447.3	22.8	0.0	0.0	56.8
395	Water-soluble salts of peroxodisulfuric acid	913.7	0.0	0.0	0.0	0.0
405	Boron compounds	1.4	0.0	0.6	0.0	0.0
411	Formaldehyde	1.8	0.0	0.0	0.0	0.0
415	Methacrylic acid	72.1	0.0	0.0	0.0	0.0
420	Methyl methacrylate	1,216.2	0.4	0.0	0.0	0.1
440	1-Methyl-1-phenylethyl hydroperoxide	1.1	0.0	0.0	0.0	0.0
	Total	725,727.1	95.4	2.6	0.0	328.1
243	Dioxins* <sup>3</sup>	—	1.1426	0.0071	0.0000	0.0000

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

\*2 The transfer amount is the amount committed to intermediate waste service companies plus the amount discharged into public sewers

\*3 Dioxin category unit: mg-TEQ

## ◆ Social Data

Human Resources Data								
	Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Consolidated number of employees	JSR Group	Person	5,990	6,587	6,790	7,203	8,748	
Non-regular employee ratio (non-regular / employee + non-regular )	JSR Group	%	–	10	11	9	13	
Employee ratios by region	Japan	JSR Group	%	–	70	68	64	60
	Asia (excluding Japan)			–	20	18	19	16
	United States			–	8	9	13	20
	Europe			–	2	5	4	4

As of the end of each fiscal year (March 31)

			Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Number of employees		Male	JSR Corporation*2	Person	2,782	2,824	2,858	2,848	2,883
		Female			464	468	470	483	494
		Total			3,246	3,292	3,328	3,331	3,377
Number of hires	New graduates*1	Male			82	83	80	66	74
		Female			15	6	15	15	15
		Total			97	89	95	81	89
	Mid-career	Male			32	62	19	23	31
		Female			7	8	3	4	11
		Total			39	70	22	27	42
Average number of years of continuous service		Male	Year	13.4	13.2	13.0	13.2	12.9	
		Female		13.6	14.2	14.8	15.1	14.8	
		Total		13.4	13.3	13.2	13.5	13.2	
Turnover rate for personal reasons				%	–	0.9	1.1	1.1	1.4
Turnover rate within three years of joining company					4.2	3.4	2.1	1.1	6.4

As of the end of each fiscal year (March 31)

\*1 As of the beginning of each fiscal year (April 1)

\*2 Including seconded employees

Annual Total Working Hours/Annual Total Overtime Hours/Average annual salary							
	Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Per-person total working hours	JSR Corporation*2	Hour	–	1,986	1,977	1,966	1,969
Per-person total overtime hours			–	231	225	215	220
Average annual salary*3	JSR Corporation	Thousand Yen	7,415	7,465	7,424	7,432	7,551

\*2 Including seconded employees

\*3 Average annual salary includes bonuses and non-standard wages.

## Education/Training and Overseas Assignments

	Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Per-person total training hours*4	JSR Corporation*2	Hour	–	18.8	17.7	16.8	14.7
e-learning program on the Principles of Corporate Ethics	JSR Corporation & its group companies in Japan	Hour/Person	0.5	0.5	0.5	0.5	0.5
e-learning program on the confidential information management			–	0.5	0.5	0.5	0.5
e-learning program on anti-monopoly law · anti-corruption · subcontract law management			–	–	0.5	0.5	0.5
e-learning program on work style reform law			–	–	–	–	0.5
e-learning program on information security			–	–	–	0.5	0.5
e-learning program on quality compliance			–	–	–	0.5	1.0
Number of employees sent to overseas training	JSR Corporation*2	Person	–	12	12	9	8

\*2 Including seconded employees

\*4 This total was calculated by including technology and skill training, employee level-based training, and other training organized by human resources departments. It therefore does not include hours spent in education provided by organizations other than human resources departments, education provided independently by individual departments, or external education.

## Diversity Development

		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Percentage of women hired annually per position*1	College graduates, engineering positions	JSR Corporation*2	%	20	9	15	20	18
	College graduates, administrative position			20	33	60	50	45
Percentage of women in managerial positions*1	4.0			3.8	3.6	3.8	4.1	
Career Re-Entry System	Registered	JSR Corporation*2	Person	8	4	5	4	5
	Rehired			0	0	1	1	2
Hiring of foreign nationals		JSR Corporation*2	Person	–	4	3	3	1
Employment rate of individuals with disabilities		JSR Corporation*2	%	2.28	2.23	2.32	2.47	2.43

As of the end of each fiscal year (March 31)

\*1 As of the beginning of each fiscal year (April 1)

\*2 Including seconded employees

Work-Life Management Data									
Number of work-balance support benefit users		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Fertility treatment	Shortened working hours	JSR Corporation*2	Person	0	0	0	1	2	
Childbirth	Prenatal & postpartum maternity leave system*5			15	20	23	21	24	
	Childcare leave system*5			Female	18	20	19	24	22
				Male	2	5	11	41	38
				Total	20	25	30	65	60
	Extended childcare leave counseling			13	12	14	13	28	
Balancing work and childcare	Shortened working hours*6			77	81	87	91	101	
	Work from home*6			11	10	10	9	15	
Balancing work and nursing care	Shortened working hours			3	4	2	3	1	
	Work from home			0	2	1	1	0	
	Nursing-care leave*5			1	6	3	8	7	
	Extended nursing-care leave			0	1	1	0	1	
Other	Lending of mobile devices with remote access to the company network			3	2	4	13	6	
	Discretionary labor system*1	107	103	107	108	111			
	Special volunteer leave(The value in parentheses represents the total number of leave days taken)	3 (5)	4 (11)	3 (7)	0 (-)	7 (17)			

As of the end of each fiscal year (March 31)

\*1 As of the beginning of each fiscal year (April 1)

\*2 Including seconded employees

\*5 Per employee request, mobile devices with remote access to the company network are provided under this benefit.

\*6 Number includes pregnant benefit users.

Number of employees eligible for work-balance support allowances	Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Extended childcare leave allowance	JSR Corporation*2	Person	18	25	26	67	53
Post-childcare leave reinstatement allowance			23	15	19	16	30
Daycare allowance			2	5	6	7	15

As of the end of each fiscal year (March 31)

\*2 Including seconded employees

## Workplace Accidents (calendar year)

		Boundary	Unit	FY2014* <sup>5</sup>	2015	2016	2017	2018
Number of Workplace Accidents Lost time injury ( ) Indicates non-working accident	JSR Corporation	Same as shown at left	Accident	1	1	0 (1)	2 (3)	0 (0)
	Manufacturing partners of JSR			0	2	1 (2)	2 (0)	1 (0)
	Group companies in Japan			1	2	2 (1)	0 (3)	2 (3)
	Manufacturing partners of Group companies in Japan			2	1	1 (1)	2 (2)	0 (2)
Lost time injury	Frequency* <sup>6</sup>	JSR Corporation	–	0.22	0.22	0.00	0.48	0.00
	Severity* <sup>7</sup>		–	0.22	0.22	0.00	0.48	0.00

\*5 Figures for 2014 are fiscal year figures.

\*6 Frequency = (Deaths or injuries in workplace accidents resulting in absence from work ÷ total working hours for all employees) x 1 million□

\*7 Severity = (Total days of lost work accidents / Total number of actual working hours) x 1000

## 設備災害 (暦年)

		Boundary	Unit	2014	2015	2016	2017	2018
Number of facility accidents	leakage	JSR Corporation	Accident	1	1	0	1	2
	Fire			1	1	1	1	0
	Other			0	0	0	0	0
	leakage	Group companies in Japan	Accident	0	0	0	1	3
	Fire			0	1	0	0	1
	Other			0	0	0	0	0

## ◆ Governance Data

Corporate Governance										
			Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Board of Directors	Inside Directors (executive directors)	Male	JSR Corporation	Person	4	5	4	4	4	
		Female			0	0	0	0	0	
		Total			4	5	4	4	4	
	Independent Outside Directors (non-executive directors)	Male			3	3	3	3	3	
		Female			0	0	0	0	0	
		Total			3	3	3	3	3	
	Total	Male			7	8	7	7	7	
		Female			0	0	0	0	0	
		Total			7	8	7	7	7	
	% Independent Outsider				%	43	43	43	43	43
	% Female Director				%	0	0	0	0	0
Term of Office		Year/Term	1	1	1	1	1			
Maximum age limit for directors		Years old	Not specified							
Number of BOD meetings held in a fiscal year				Times	17	17	17	17	17	
			Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Audit & Supervisory Board (formerly known as Statutory Auditors Board)	Insider	Male	JSR Corporation	Person	1	1	1	1	1	
		Female			0	0	0	0	0	
		Total			1	1	1	1	1	
	Independent Outsider	Male			1	1	1	1	1	
		Female			1	1	1	1	1	
		Total			2	2	2	2	2	
	Total	Male			2	2	2	2	2	
		Female			1	1	1	1	1	
		Total			3	3	3	3	3	
	% Independent Outsider				%	67	67	67	67	67
	% Female Audit & Supervisory Board Member				%	33	33	33	33	33
Term of office		Year/Term	4	4	4	4	4			
Number of Audit & Supervisory Board meetings held in a year				Times	19	19	19	19	18	
			Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
Nomination Advisory Committee	Chaired by Independent Outside Director		JSR Corporation	Yes/No	–	Yes	Yes	Yes	Yes	
	Committee Member	Independent Outside Directors		Person	–	3	3	3	3	
		Inside Director		–	2	2	2	2		
		Total		–	5	5	5	5		
	Number of meetings held in a year			Times	–	1	3	3	3	
Remuneration Advisory Committee	Chaired by Independent Outside Director		JSR Corporation	Yes/No	Yes	Yes	Yes	Yes	Yes	
	Committee Member	Independent Outside Directors		Person	3	3	3	3	3	
		Inside Director		1	1	1	1	1		
		Total		4	4	4	4	4		
	Number of meetings held in a year			Times	3	3	4	4	4	



		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Number of officers*	Male	JSR Corporation	Person	22 (3)	20 (3)	21 (3)	24 (3)	24 (3)
	Female			1 (0)	1 (0)	1 (0)	1 (0)	1 (0)
	Total			23 (3)	21 (3)	22 (3)	25 (3)	25 (3)

\*Does not include directors concurrently serving as executive managing officers.

### Remuneration for Directors and Audit & Supervisory Board Members

			Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Remuneration for Directors	Inside Directors	Basic Remuneration (Fixed remuneration)	JSR Corporation	Million yen	153	158	195	183	186
		Annual Bonuses (Short term performance linked remuneration)			39	21	48	69	50
		Medium-term performance-based bonus							25
		Restricted Stock Shares (Remuneration in share stock)			-	-	-	28	37
		Deep Discounted Stock Option (Remuneration in share stock)			29	30	34	9	-
		Sub-total			221	209	277	289	298
	Outside Directors	Basic Remuneration (Fixed remuneration)			36	39	40	40	42
		Sub-total			36	39	40	40	42
	Total				257	248	317	329	340
	Remuneration for Audit & Supervisory Board members	Inside Audit & Supervisory Board Member			Basic Remuneration (Fixed remuneration)	JSR Corporation	Million yen	27	28
Sub-total			27	28	28			28	29
Outside Audit & Supervisory Board Members		Basic Remuneration (Fixed remuneration)	11	15	17			17	20
		Sub-total	11	15	17			17	20
Total		38	43	45	45			49	

## List of Remuneration for individual Directors paid in FY2018

Name	Position	Name of Company	Unit	Description of consolidated remuneration				
				Basic Remuneration	Restricted Stock shares	Medium-term performance-based bonus	Stock Option as Remuneration	Total
Mitsunobu Koshiba	Director	JSR Corporation	Million yen	78	22	17	20	137

\* the above list is limited to Directors whose annual remuneration amounted for one (1) hundred million yen or more.

## Accounting Auditors

		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Amount of remuneration for Accounting Auditors	Remuneration for services relating to auditing or certifying the financial documents	JSR Corporation and its consolidated subsidiaries	Million yen	63	69	68	67	87
	Remuneration for non-auditing services			0	16	5	24	0

**Activities of Directors and Audit & Supervisory Board Members in FY2018**

Name	Title*	Age*	Tenure*	Activities	Attendance to the meetings in fiscal year ending in March 2019		
Mr. Mitsunobu Koshiba	Representative Director and President	63	13 years	Mr. Koshiba, as a representative director and President, has been pushing forward JSR's midterm management plan "JSR2019" to realize the JSR's objectives for 2020, while further strengthening the Company's corporate governance standards and thereby enhancing the trust of all stakeholders of the Company. He has been contributing further to the enhancement of JSR's corporate value by utilizing his vast experience and knowledge to help the Company in making crucial decisions and to supervise the performance of duty at the BOD level.	BOD	times/times 17 / 17	100%
					Nomination Advisory Committee	3 / 3	100%
					Remuneration Advisory Committee	4 / 4	100%
Mr. Koichi Kawasaki	Director and Senior Managing Officer	62	3 years	Mr. Kawasaki, as a representative director and a director in charge of Manufacturing and Technology, Product Safety & Quality Assurance, Procurement, Logistics, and Safety and Environment Affairs, has been contributing to further enhancement of JSR's corporate value by utilizing his vast experience and knowledge to help the Company in making crucial decisions and to supervise the performance of duty at the BOD level.	BOD	17 / 17	100%
Mr. Nobuo Kawahashi	Director and Senior Managing Officer	62	3 years	Mr. Kawahashi is involved with a broad range of research in the Research and Development Department that helps expand JSR's business. He is also currently in charge of Research & Development as well as human resources development and diversity development. He utilizes his abundant work experience and knowledge in decision-making concerning important matters and supervising work execution at Board of Directors meetings, and he contributes to the continuous improvement of the Group's corporate value.	BOD	17 / 17	100%
Mr. Hideki Miyazaki	Director and Managing Officer	61	1 year	Mr. Miyazaki, as a director in charge of Office of Accounting, Finance, Corporate Communication, has been contributing further to the enhancement of JSR's corporate value by utilizing his vast experience and knowledge to help the Company in making crucial decisions and to supervise the performance of duty at the BOD level.	BOD	13 / 13	100%
Mr. Yuzuru Matsuda	Independent Outside Director	70	4 years	Mr. Matsuda, as an independent outside director, has been contributing further to the enhancement of JSR Group's corporate value by utilizing his vast experiences in management and global businesses of medical, biochemical and pharmaceutical products as well as independent viewpoints to help the Company in making crucial decisions, to supervise the performance of duty at the BOD level. In addition, he has been contributing, by appropriately acting as the Chairman of the Nomination Advisory Committee and the Remuneration Advisory Committee respectively to strengthen the Company's fair corporate governance through enhancement of fair and reasonable business judgment and transparent and sound management, thereby continually.	BOD	17 / 17	100%
					Nomination Advisory Committee	3 / 3	100%
					Remuneration Advisory Committee	4 / 4	100%

Name	Title*	Age*	Tenure*	Activities	Attendance to the meetings in fiscal year ending in March 2019		
Mr. Shiro Sugata	Independent Outside Director	69	3 years	Mr. Sugata, as an independent outside director, has been contributing further to the enhancement of JSR Group's corporate value by utilizing his vast experience in management and global businesses of optical application products and industrial machineries as well as independent viewpoints to help the Company in making crucial decisions, to supervise the performance of duty at the BOD level, and to strengthen the Company's fair corporate governance through enhancement of fair and reasonable business judgment and transparent and sound management.	BOD	17 / 17	100%
					Nomination Advisory Committee	3 / 3	100%
					Remuneration Advisory Committee	4 / 4	100%
Mr. Tadayuki Seki	Independent Outside Director	69	1 year	Mr. Seki, as an independent outside director, has been contributing further to the enhancement of JSR Group's corporate value by utilizing his vast experiences in management and finance as a CFO of a major global trading house as well as independent viewpoints to help the Company in making crucial decisions, to supervise the performance of duty at the BOD level, and to strengthen the Company's fair corporate governance through enhancement of fair and reasonable business judgment and transparent and sound management.	BOD	13 / 13	100%
					Nomination Advisory Committee	3 / 3	100%
					Remuneration Advisory Committee	4 / 4	100%
Mr. Atsushi Kumano	Full-time Audit & Supervisory Board Member	62	3 years	Mr. Kumano, as an inside full-time audit & supervisory board member, has been contributing to ensure fair and reasonable judgment for, and accountable and sound management of, the businesses of the Company by utilizing his vast experience and knowledge on the businesses of the Company and sharing them with other outside members to audit the Directors' decision-making and execution of operation.	BOD	17 / 17	100%
					Audit & Supervisory Board	18 / 18	100%
Ms. Hisako Kato	Independent Outside Audit & Supervisory Board Member	70	5 years	Ms. Kato, as an independent outside audit & supervisory board member, has been contributing to ensure fair and reasonable judgment for, and accountable and sound management of, the businesses of the Company by utilizing vast financial and accounting expertise as a Certified Public Accountant and a Certified Tax Accountant as well as independent outside viewpoint to audit the Directors' decision-making and execution of operation.	BOD	17 / 17	100%
					Audit & Supervisory Board	18 / 18	100%
Mr. Sumio Moriwaki	Independent Outside Audit & Supervisory Board Member	62	2 years	Mr. Moriwaki, as an independent outside audit & supervisory board member, has been contributing to ensure fair and reasonable judgment for, and accountable and sound management of, the businesses of the Company by utilizing vast expertise in legal affairs as a lawyer as well as independent outside viewpoint to audit the Directors' decision-making and execution of operation.	BOD	17 / 17	100%
					Audit & Supervisory Board	18 / 18	100%

\*As of June 18, 2019 (at the close of the 74th AGM of the Company)

Compliance								
		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Amount of corporate income tax paid	JSR Corporation and consolidated subsidiary in Japan	same as the left hand column	Million yen	–	–	–	12,565	9,547
	Consolidated Subsidiaries in other countries			–	–	–	2,204	1,434
Political Donations/contribution		JSR Corporation		–	–	–	0	0

		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018
Number of CSR Committee meetings held in a year		JSR Corporation	Times	6	5	6	7	4
Violation of each country's anti-corruption laws and international standards	Number of violations	JSR Group	Times	0	0	0	0	0
	Penalty	JSR Group	Yen	0	0	0	0	0
Number of times the JSR Group hotline was used		JSR Corporation	Number	8	5	3	2	6
		Group companies		6	11	3	4	10
		Unknown		0	0	0	0	1
Number of times the supplier hotline was used		JSR Corporation	Number	0	0	0	0	0
		Group companies		0	0	0	0	0

Research and Development (R&D)									
		Boundary	Unit	FY2014	FY2015	FY2016	FY2017	FY2018	
R&D expenses		JSR Group	Billion yen	22.5	21.5	19.7	20.3	24.9	
		JSR Corporation	Billion yen	17.4	16.4	15.5	16.5	19.1	
Number of researchers		JSR Corporation	Person	728	707	673	680	727	
Number of patents held		Japan	JSR Corporation	Number	3,124	3,260	3,266	3,282	3,258
		Other countries			3,370	3,642	3,738	3,812	3,793
		Total			6,494	6,902	7,004	7,094	7,051

## ◆Policy / Guidelines / Philosophy

### Environment

#### Environment and Safety Management Policy

JSR Group developed its Environment Safety Management Policy promotion items with reference to management policies based on our responsibility to stakeholders and the Japan Chemical Industry Association's policies on the environment and safety.

##### **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 residents**

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.

## Philosophy concerning Climate Change

JSR Group's Environment and Safety Management Policy establishes its philosophy concerning the environment, safety, and health and includes climate change.

### **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.

## Philosophy concerning Industrial Waste Reduction

JSR Group's Environment and Safety Management Policy establishes its philosophy concerning waste.

### **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.

## Philosophy concerning Biodiversity Conservation

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.

### **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.

established in April 2012



## Social

### Philosophy concerning Human Rights

#### Philosophy concerning Respect for Human Rights

JSR Group's Principles of Corporate Ethics establish its philosophy concerning human rights.

##### **Code of Conduct for Respecting Human Rights**

① We will respect and uphold basic human rights, such as United Nations "The Universal Declaration of Human Rights", United Nations "Guiding Principles on Business and Human Rights", declared internationally and protected under constitution and legal precedents of respective countries, and will not infringe basic human rights.

##### **Code of Conduct for Fair and Proper Transactions**

④ With regard to purchase transactions, we shall conduct transactions that are fair, transparent, and based on economic rationality, as well as consider our responsibility to society, such as compliance with laws and ordinances, protection of resources, environmental conservation, safety and human rights.

##### **Code of Conduct for Providing a Comfortable Work Environment**

⑦ In the event that a staff member reports the 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.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

#### Philosophy concerning Inhumane Acts (Harassment)

JSR Group's Principles of Corporate Ethics establish its philosophy concerning inhumane acts (harassment).

##### **Code of Conduct for Providing a Comfortable Work Environment**

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.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## Philosophy concerning Prevention of Discrimination

JSR Group's Principles of Corporate Ethics establish its philosophy concerning prevention of discrimination.

### 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.
- 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 or other relevant conditions when determining employment status and/or working conditions.
- ④ We shall not force religion and/or belief on others.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## Philosophy concerning Child Labor and Forced Labor

JSR Group's Principles of Corporate Ethics establish its philosophy concerning child labor and forced labor.

### Code of Conduct for Respecting Human Rights

- ③ We shall never allow child labor or forced compulsory labor, whether at the JSR Group or in the workplaces of business partners and collaborating companies.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## Philosophy concerning Collective Bargaining

JSR Group enters into labor agreements with labor unions based on its Principles of Corporate Ethics, which establish its philosophy concerning collective bargaining.

### Code of Conduct for Respecting 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.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## Philosophy concerning Customers

JSR Group's Management Policies establish its philosophy concerning its customers.

### Management Policies

Responsibility to Our Stakeholders

Responsibility to Our Customers / Business Partners

- 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

## **Philosophy concerning Social Contribution**

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

### **Basic Philosophy concerning 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.

Basic Approach to Social Contribution, established in January 2009

# Fundamental Philosophy concerning Employees

## 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.

## 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.

### **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.

We also ensure wages at wages that exceed the minimum wage based on the laws and ordinances stipulated by each country / region, and strive not to violate working time regulations.

### **Philosophy concerning Employees' Mental and Physical 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.

### **Philosophy concerning the JSR Workers' Union's activities**

Through routinely-convened labor-management councils, labor agreement revision consultations and the like, we strive to maintain a relationship with the union that allows constructive exchanges of opinions. We also work with the union to create better working environments from the standpoints of "wage policy", "workplace environment policy", "welfare policy", "leisure time, public relations, and volunteer activities policy" and "organization policy", which are important matters for the union.

# Philosophy and Course of Action for Occupational Health and Safety, Policy for Security Management

## 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.



## Courses of Action of Philosophy for Occupational Health and Safety

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.  
Through communication and ingenuity, we will aim to
5. achieve 100% employee participation in all safety activities.



The safety monument

## Policy for Security Management

- (1) Extremely Safe Behavior  
The 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.



# **JSR Group CSR / Sustainable Procurement Policy**

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

Based on this, we make CSR activities a core part of our everyday operations. Our commitment to CSR includes establishing "The JSR Group Principles of Corporate Ethics" and consolidating our responsibilities to our customers/business partners, to our employees, to society, and to shareholders under management policies we call "Responsibility to Our Stakeholders."

At JSR Group, we believe that developing CSR supply chain management will lead to mutual prosperity for both the Group and our business partners. It was with this in mind that we established this JSR Group CSR/Sustainable Procurement Policy.

Below are listed 36 items in six areas that we ask our business partners to strictly observe. We call on our partners to accept them and put them into practice, keeping in mind the intent described above and fully understanding their content.

It should be understood that this policy may undergo review and revision as required in response to changes in society's demands on us.

## **I. Establishing and Maintaining a CSR Advancement Structure**

Companies must of course comply with the laws and regulations of each country in which they do business. But they also have a responsibility to abide by social norms and meet society's expectations.

For the following Areas II to VI (fair corporate activity, human rights and labor, environmental conservation, health and safety, and information security), companies that do business with JSR Group must establish CSR mechanisms to ensure that their business activities do not negatively affect society and the environment and, if negative effects do occur, to deal with them immediately.

The following actions are required:

1. Incorporate CSR mechanisms into the company's policies and code of conduct, make them known among employees, and establish a department with the responsibility of executing them.
2. Have raw material suppliers and other business partners also understand and execute the CSR mechanisms.
3. Voluntarily announce the status of their initiatives through environmental reports, CSR reports, websites, and other media to the public.

## **II. Fair Corporate Activity**

In the processes of producing products and services, companies must engage in business activities that are based on fair, transparent, and free competition.

The following actions are required:

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. Proper import/export management
8. Proper tax payment according to the laws and regulations of each country
9. Prevention and early detection of improper behavior by maintaining an internal reporting system

### **III. Human Rights and Labor**

Companies must act in accordance with the laws of each country and international standards, respect basic human rights, and give attention to the following items to ensure that their business activities do not violate human rights, either directly or indirectly.

The following actions are required:

1. Prohibition of forced labor
2. Prohibition of child labor and protection of young workers
3. Prohibition of inhumane treatment
4. Prohibition of discrimination in terms of employment, promotion opportunities, treatment, etc.
5. Payment of fair wages exceeding the minimum wage amount
6. Reduction of excessive working hours by proper management of working hours and non-work days
7. Respect for employees' freedom of association and right to collective bargaining

### **IV. Environmental Conservation**

Companies have a responsibility to comply with the laws and standards of each country concerning environmental conservation, to specify and manage factors that impact on the environment by building a management system, and to work toward preserving the environment in their processes of producing products and services.

The following actions are required:

1. Establishment and operation of an environmental management system
2. Management of chemical substances and prevention of pollution
3. Reduction of environmental burden
4. Reduction of energy consumption and greenhouse gas (GHG) emissions
5. Resource conservation, resource recycling, and proper waste disposal
6. Conservation of water resources and reduction of water consumption
7. Preservation of biodiversity and reduction of negative impact
8. Disclosure of the status of environmental conservation initiatives

### **V. Health and Safety**

Companies must comply with the laws and standards of each country concerning occupational health and safety and establish management systems and mechanisms to prevent workplace accidents, promote the health and safety of employees, and create comfortable workplace environments.

The following actions are required:

1. Safety measures for machinery and equipment

- 2 . Maintenance of workplace safety
- 3 . Maintenance of workplace health
- 4 . Employee health management
- 5 . Pre-emergency preparedness measures

## **VI. Information Security**

Companies must properly manage and protect the information they obtain through business activities, take protective measures against threats to their computer networks, and manage the confidential information of customers and third parties in a manner that prevents leaks.

The following actions are required:

- 1 . Compliance with the laws and regulations of each country concerning information security
- 2 . Protection against threats to computer networks
- 3 . Prevention of personal information leaks
- 4 . Prevention of leaks of confidential information pertaining to customers and third parties

Enacted on December 10, 2018

JSR Corporation

## Governance

### Corporate Governance

Please refer to JSR's Corporate Governance Report by clicking the URL shown below. The following are the gist of the report.

[http://www.jsr.co.jp/jsr\\_e/pdf/company/governance.pdf](http://www.jsr.co.jp/jsr_e/pdf/company/governance.pdf)

### Basic Views on Corporate Governance

It is the 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 value with the hope of becoming an attractive corporation that can earn the trust of and satisfy the interests of all our stakeholders. The Company therefore has been and will continue focusing on the enhancement of corporate governance as an important management challenge.

### Corporate governance structure

As a company with audit & supervisory board members (formerly known as statutory auditors), JSR principally monitors and oversees the execution of duties by directors and the management through its Board of Directors and audit & supervisory board members. JSR has continuously strengthened the function of management supervision, improved efficiency in decision making and execution of business duties, and enhanced the transparency and soundness of business management through the introduction of an officer system and the appointment of outside directors and audit & supervisory board members, who are independent from the Company and have extensive business experience and a high level of expertise.

### Composition of Board of Directors

The current Board of Directors consists of seven (7) directors, three (3) of whom are independent outside directors with vast experience and extensive expertise in management of corporations and businesses. In the future, the Company will elect 1/3 (one third) or more independent outside directors with similar expertise in order to increase corporate value and oversee business management.

### Composition of Audit & Supervisory Board (formerly known as Statutory Auditors Board)

The current Audit & Supervisory Board consists of three (3) audit & supervisory board members, two (2) of whom are independent outside audit & supervisory board members with extensive and sophisticated expertise (one is a lawyer and the other is a certified public accountant qualified as a certified public tax accountant as well). In the future, the Company will elect two independent outside audit & supervisory board members with vast experience and extensive and sophisticated expertise in such fields as law, accounting, and etc., to effectively audit the execution of duties by directors and the management.

## **Basic Policies on Remuneration for Directors and framework for determining the remuneration**

### **Remuneration Advisory Committee**

JSR established the Remuneration Advisory Committee of which majority members are independent outside directors and the chair of which is an independent outside director in order to ensure the objectivity and transparency of its directors' remuneration scheme. The committee deliberates the basic policy of remuneration, the remuneration structure, the mechanism of a performance-based remuneration, the setting of targets, and assessment of performance, and submits its findings to the Board of Directors.

### **Basic Policies**

JSR set basic policies on remuneration of directors as follows: the remuneration scheme should increase corporate value over the medium and long-term, attract diverse and superior personnel, be linked to short-term, medium-term and long-term business performance, have management and shareholders share profits, and ensure high transparency. Remuneration for directors consists of a fixed basic remuneration, an annual bonus linked to the attainment level of business performance in each fiscal year, a medium-term business performance-based bonus linked to the attainment level of the medium and long-term business performance, and restricted stock shares as remuneration designed to facilitate earlier sharing of corporate values between directors and the shareholders of the Company. In light of their roles, remuneration for outside directors and audit and supervisory board members consists of basic remuneration only.

## **Policies and procedures for nominating candidates for Directors and Audit & Supervisory Board members**

### **Nomination Advisory Committee**

1) JSR established the Nomination Advisory Committee of which majority members are independent outside directors and the chair of which is an independent outside director to ensure the transparency of the policy and procedures of nominating candidates for directors, audit & supervisory board member and officers with directorship status (including senior officers). At the committee, any of the members is not eligible for voting in the agenda in which such member has special interest.

2) The committee deliberates the standard for the diversity in breadth of knowledge, experience, and capability necessary for the Board of Directors, criteria and procedures for the nomination, and candidates for future appointment as president, directors, officers with directorship status (including senior officers), and audit & supervisory board members, and submits its findings to the Board of Directors. In order to ensure transparency of the deliberation, the committee takes necessary measures as deliberation solely among outside independent directors for the agenda relating to appointment/reappointment or dismissal of CEO.

3) The committee systematically develops and selects candidates for the successor to CEO in an objective and transparent manner by providing the pool of candidates with necessary training and coaching to enhance skills and leadership and by actively participating in selection process through interviews etc.

## **Criteria for nominating candidates for Directors**

1) When nominating candidates for directors, JSR makes it a rule to ensure an appropriate balance among diversity in breadth of knowledge, experience, and capability essential to the Board of Directors and the size thereof in order to make important management decisions and oversee the execution of duties in appropriate and timely fashion.

JSR nominates persons who are mentally and physically sound and have an exceptional personality and popularity, and high principles and ethical view.

2) Candidates for inside directors:

JSR nominates persons who have extensive knowledge, experience, and high capability with a superior track record in such fields as business management (including global one), R&D, manufacturing, manufacturing technology, human resources, and finance and accounting, etc.

3) Candidates for outside directors:

JSR nominates persons who have independence, vast experience and extensive expertise of management of the major companies in various fields and of business management both in Japan and overseas as well as the capability to actively express opinions and raise issues on growth strategy and enhancement of governance from a broad perspective.

4) The Nomination Advisory Committee will deliberate and report to the Board of Directors in a timely fashion when the committee judges there arises a reason that necessitates dismissal of CEO and/or other directors.

## **Criteria for nominating candidates for audit & supervisory board member**

1) From the perspective of ensuring the transparency and soundness of business management through auditing the process of directors' decision making and execution of duties in accordance with laws and regulations, such as the Companies Act, the articles of incorporation and internal rules, JSR nominates persons with vast experience and extensive and sophisticated expertise necessary for audit (including one person with sufficient knowledge of finance and accounting) among those who are mentally and physically sound and have an exceptional personality and popularity, and high principles and ethical view.

2) Regarding candidates for outside audit & supervisory board members, in particular, JSR nominates persons who have independence and extensive experience and knowledge of laws and accounting.

## **Views on capability and diversity of the Board of Directors as a whole**

1) With the aim of overseeing important management decision making and the execution of duties in appropriate and timely fashion in order to increase corporate value over medium and long-term, JSR considers it important that the Board of Directors as a whole effectively utilize both i) the extensive knowledge, experience and high capability in such fields as business management (including those of global businesses), R&D, manufacturing, manufacturing technology, human resources, and finance and accounting, etc. held by inside directors and ii) vast experience and extensive expertise of management of the companies in various fields and business and management both in Japan and overseas, and capability to actively express opinions and raise issues on growth strategy and enhancement of governance from a broad perspective held by independent outside directors and that the Board of Directors thus ensures such diversity in knowledge, experiences (including international ones) and skills as the Board of Directors deems fit and necessary.

2) The Company believes that its Board of Directors has acquired necessary diversities so that the Board is functioning effectively at present.

JSR will continue to ensure the sufficient diversity in knowledge, experience, and capability that are essential for the Board of Directors and maintain its optimum size but not exceeding 12 people in accordance with the deliberation to be made by the Nomination Advisory Committee and with its business strategies in the future.

## **Securing equitable Shareholders' rights**

JSR has continued to develop an environment where shareholders can appropriately exercise their voting rights at the ordinary general meeting of shareholders.

JSR will continue to implement the following measures: holding an ordinary general meeting of shareholders earlier than other companies (in the middle of June each year); dispatching the notice of convocation of an ordinary general meeting of shareholders three (3) weeks prior to the date of the meeting; introducing an electronic voting platform via the Internet, etc.; participating in the electronic voting platform for institutional investors; enhancing contents of the convocation notice; and translating the convocation notice into English, etc.

## **Reduction of cross-shareholdings**

JSR holds listed shares as cross-shareholdings\* only after comprehensively reviewing the rationality of holding such shares in the light of business management strategies and economics of such shareholdings while it has been reducing cross-shareholdings when holding such shares has become irrational.

The Board of Directors periodically reviews the status and the policies for holding individual cross-shareholdings by taking such factors into consideration as the purpose of holding, potential risk and expected return, and cost of capital required for holding such individual shares.

When exercising voting rights of cross-shareholdings, JSR comprehensively determines to vote for or against their proposals after reviewing whether or not their corporate governance system and proposals will contribute to the improvement of their corporate value over the medium and long-term.

## **Ways to avoid conflict of interest transactions arising from the act of Directors**

1) In accordance with the Companies Act and JSR's "Regulations of the Board of Directors", JSR has obtained the Board of Directors' prior approval for competitive and conflict-of-interest transactions and reported important facts regarding such transactions to the Board of Directors after completion.

2) In accordance with applicable laws and regulations, JSR has disclosed the outline of transactions with related parties in notes to consolidated financial statements of the Securities Report and notes to non-consolidated financial statements of the ordinary general meeting of shareholders.

3) JSR has been determining the terms and conditions for the transactions with major shareholders by negotiating prices considering market conditions in the same way as it deals with third parties.

# Compliance

## Code of Conduct and Corporate Ethics

JSR Group has established a Code of Conduct as the rules that all JSR Group companies, their directors and employees (full-time, contract, part-time, and temporary employees as well as employees on short-term contracts) should comply with, in order to execute the management policies "Our Responsibility to our Stakeholders" in engaging in business activities. JSR Group shall not require its directors or employees to act in violation of the Code 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 for the reason of said refusal.

Please click on the following link for the English version of "The Group Principles of Corporate Ethics"

[http://www.jsr.co.jp/csr/pdf/CoC\\_en.pdf](http://www.jsr.co.jp/csr/pdf/CoC_en.pdf)

## Code of Conduct for anti-bribery and anti-corruption

The JSR Group established "Standards on Providing and Accepting Gifts and Entertainment" and "Regulations for Compliance with Anticorruption Laws" based on the principles of anti-bribery and anti-corruption established in "The JSR Group Principles of Corporate Ethics".

### Code of Conduct for Gifts and Entertainment

- 1) Whether inside or outside the country, we shall not give gifts to and/or entertain politicians, government officials or other relevant parties in a manner that may generate profits through illegal means or violate bribery regulations.
- 2) When making contributions to political figures/parties or other organizations, we shall do so in a proper manner and observe all applicable laws and regulations, such as the Political Funds Control Law.
- 3) We shall not give or receive gifts and provide or receive entertainment to or from customers, suppliers and other stakeholders, which may be regarded as bribery or unfair acts. We shall not be involved in the exchange of gifts or entertainment that may go beyond the accepted social norms.
- 4) Within the JSR Group, we shall not give and/or receive gifts and/or provide entertainment.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## Policies Protection of Whistleblowers

The JSR Group specifies its policies on protection of whistleblower in its "JSR Group's Principles of Corporate Ethics" as below;

### Code of Conduct for Providing a Comfortable Work Environment

- 7) In the event that a staff member reports the 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.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.



## **Policies against Antisocial Forces**

The JSR Group expresses its principles against antisocial forces in "The JSR Group Principles of Corporate Ethics".

### **Code of Conduct against Antisocial Forces**

Our basic policy, upheld by our top executive and company as a whole, is to reject any relation with antisocial forces including any business transactions, and firmly reject any demand with collaboration from police and external organizations specialized in security issues.

The JSR Group Principles of Corporate Ethics, revised in October, 2017.

## **Information Security Policy**

JSR Group endeavors to manage information in an appropriate and secure manner by establishing Information Security Policy and by thoroughly disseminating the policy to its employees.

### **Information Security Policy**

- 1) The JSR Group, by complying with laws and regulations and by observing other social norms relating to the handling of information, will protect information that belong to the JSR Group, its customers, business partners and other third parties.
- 2) 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.
- 3) 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.
- 4) 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.
- 5) If an information security-related problem occurs, the JSR Group will promptly identify the cause and take measures to minimize damage and prevent recurrences.
- 6) The JSR Group will periodically assess and review its information security measures to respond appropriately to changes in external environments.

## JSR Group Companies (As of 31st May, 2019)

53 consolidated companies, 17 equity-method affiliates, 1 non-equity-method affiliate, RC reporting scope 18

### Japan

Country	Companies' name	Business segment					consolidated companies	equity-method affiliates	RC reporting scope
		Elastomer	Plastics	Digital Solutions	Life Sciences	Others			
Japan	ELASTOMIX CO., LTD.	●					●		※
	Japan Butyl Co., Ltd.	●						◆	
	KRATON JSR ELASTOMERS K. K.	●						◆	
	Emulsion Technology, Co., Ltd.	●					●		※
	Techno-UMG Co., Ltd.		●				●		※
	JAPAN COLORING CO., LTD.		●				●		※
	JSR Micro Kyushu Co., Ltd.			●			●		※
	D-MEC LTD.			●			●		
	JAPAN FINE COATINGS Co., Ltd.			●				◆	
	JSR Life Sciences Corporation				●		●		※
	MEDICAL & BIOLOGICAL LABORATORIES CO., LTD.				●		●		
	LEXI Co., Ltd.				●		●		
	JM Energy Corporation					●	●		※
	JSR Trading Co., Ltd.	●		●	●	●	●		
	JEY-TRANS CO., LTD.					●	●		
	JSR Logistics & Customer Center Co., Ltd.					●	●		※
	JSR ENGINEERING CO., LTD.					●	●		※
	JSR Business Services Co., Ltd.					●	●		
	JN System Partners Co., Ltd.					●		◆	
	Goko Trading Co., Ltd.					●	●		
CMIC JSR Biologics Co., Ltd.				●			-		

## Korea, Taiwan, China

Country/Region	Companies' name	Business segment					consolidated companies	equity-method affiliated	RC reporting scope
		Elastomer	Plastics	Digital Solutions	Life Sciences	Others			
Korea	Techno-UMG Hong Kong Co., Ltd.	●						◆	
	JSR Elastomer Korea Co., Ltd.	●						◆	
	JSR Electronic Materials Korea Co., Ltd.			●			●		
	JSR Micro Korea Co., Ltd.			●			●		※
Taiwan	JSR Micro Taiwan Co., Ltd.			●			●		※
China	Tianjin Kuo Cheng Rubber Industry Co., Ltd.	●						◆	
	ELASTOMIX(FOSHAN) CO., LTD.	●					●		※
	JSR (Shanghai) Co., Ltd.	●		●	●		●		
	JSR Trading (Shanghai) Co., Ltd.	●				●	●		
	Techno-UMG Guangzhou Co., Ltd.		●				●		
	Techno-UMG Hong Kong Co., Ltd.		●				●		
	Techno-UMG Shanghai Co., Ltd.		●				●		
	Techno-UMG Shanghai Technical Center Co., Ltd.		●				●		
	JSR Micro (Changshu) Co., Ltd.			●			●		
	J&W Beijing Biotech Co., Ltd.				●		●		
	MBL Beijing Biotech Co., Ltd.				●		●		
	MBL Hangzhou Biotech Co., Ltd.				●		●		

## Southeast Asia, South Asia

Country	Companies' name	Business segment					consolidated companies	equity-method affiliated	RC reporting scope
		Elastomer	Plastics	Digital Solutions	Life Sciences	Others			
Indonesia	PT.ELASTOMIX INDONESIA	●					●		※
Vietnam	JSR Trading Vietnam Co., Ltd.					●	●		
Thailand	JSR BST Elastomer Co., Ltd.	●					●		※
	ELASTOMIX (THAILAND) CO., LTD.	●					●		※
	Techno-UMG Asia Co., Ltd.		●				●		
	JSR Trading Bangkok Co., Ltd.	●				●	●		
India	JSR Elastomer India Private Limit	●					●		

## Europe

Country	Companies' name	Business segment					consolidated companies	equity-method affiliated	RC reporting scope
		Elastomer	Plastics	Digital Solutions	Life Sciences	Others			
Germany	JSR Elastomer Europe GmbH	●					●		
	Techno-UMG Europe GmbH		●				●		
Hungary	JSR MOL Synthetic Rubber, Ltd.	●					●		
Swiss	Selexis SA				●		●		
Belgian	JSR Micro N.V.			●	●		●		※
	EUV Resist Manufacturing & Qualification Center N.V.			●			●		※

## North and Central America

Country	Companies' name	Business segment					consolidated companies	equity-method affiliated	RC reporting scope
		Elastomer	Plastics	Digital Solutions	Life Sciences	Others			
USA	JSR Elastomer America, Inc.	●					●		
	Techno-UMG America, Inc		●				●		
	JSR North America Holdings, Inc.			●	●		●		
	JSR Micro, Inc.			●			●		※
	JSR Life Sciences, LLC					●	●		
	Crown Bioscience International				●		●		
	KBI Biopharma, Inc.				●		●		
	MBL International Corporation				●		●		
Mexico	ELASTOMIX MEXICO, S.A. de C.V.	●					●		
	JSRT Mexico S.A. de C.V.					●	●		



**Responsible Care**<sup>®</sup>  
OUR COMMITMENT TO SUSTAINABILITY

## JSR Group CSR Report 2019 Independent Review Report

July 11, 2019

### JSR Corporation

To Eric Johnson, Representative Director and CEO

#### ■ Objective of Verification

This verification is performed by the Responsible Care<sup>®</sup> Verification Center with respect to the “JSR Group CSR Report 2019 (Online Version)” (hereinafter, “Report”), with the objective of reporting the opinions of specialists in the chemical industry concerning the following items.

- 1) The reasonableness of the calculation and aggregation methods of performance indices (numerical data) and the accuracy of the numerical data
- 2) The accuracy of provided information other than numerical data
- 3) Responsible Care activities (hereinafter “RC activities”) and CSR activities
- 4) Characteristics of the Report

#### ■ Verification Methodology

- At the Head Office: An inspection concerning the reasonableness of the aggregation method of numerical data reported from each site (office, plant) as well as the accuracy of information other than numerical data. It was conducted by interviewing relevant business managers and Report editors about the Report’s content as well as receiving necessary documents and explanation from relevant business managers and Report editors.
- At the Kashima Plant: An inspection concerning the reasonableness of the methods of calculating numerical data reported to the Head Office and the accuracy of numerical data as well as the accuracy of information provided in the Report. It was conducted by interviewing relevant business managers and Report editors, receiving necessary documents and explanations, checking those documents and explanations against evidence, and making onsite confirmations.
- The numerical data and other information provided in the Report were inspected by sampling.

#### ■ Opinion

- 1) The reasonableness of the calculation and aggregation methods of performance indices (numerical data) and the accuracy of the numerical data
  - The company is making efforts to ensure the accuracy of numerical figures. The Head Office and Kashima Plant are double-checking figures by using an auto-aggregation system (Excel), and domestic Group companies are unifying their data-entry forms to eliminate errors when aggregating and transcribing data.
  - A plan is being prepared to achieve greater efficiency in aggregation work by introducing an environmental information management system. This plan also includes Group companies. Moreover, the digitalization of almost all applications of the Human Resources Development Department is scheduled from October of this year. We expect these efforts to produce results.
- 2) The accuracy of provided information other than numerical data
  - Information provided in the Report is accurate. Some instances of inappropriate expressions and difficult-to-understand text were identified at the drafting stage; however, they all have been corrected in the current report.
- 3) RC activities and CSR activities
  - We positively acknowledge the fact that, under the launch of the new management organization, priority issues in the area of CSR were established in the message by Representative Director, President and COO in order to give shape to the company’s management policy. We also have a high opinion to the point that relevance to the SDGs are noted in each issue of JSR Group’s medium-term CSR Plan.
  - We positively acknowledge the fact that Headquarters Environment and Safety Audits are conducted under the President’s leadership each year and that the company is striving to stimulate employees’ environmental and safety activities through

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shifting the audit to the style in which issues faced by JSR plants are shared and discussed and through holding dialogues and “sharing of ideas” between top management and employees.

- Additionally, we positively acknowledge the fact that each year the company organizes CSR and RC explanatory briefings through which officers and managers in charge visit each business site to share results, issues and other matters concerning CSR advancement and RC activities with employees and discuss those matters directly with them.
- We positively acknowledge the fact that the Kashima Plant is vigorously implementing a project to prevent external corrosion and leaks in piping caused by the region’s particular sea wind and that the project is producing affirmative results. We further positively acknowledge the fact that the plant is conducting analyses toward preventing recurrence of accidents, identifying root causes, and taking countermeasures.

#### 4) Characteristics of the Report

- We positively acknowledge the fact that, in the section on Dialogue with Stakeholders, the company discloses and publishes the information that it holds dialogues with experts concerning the identification and validity of its materiality, under the theme “JSR Group’s Materiality and the SDGs” as a step in formulating its next mid-term business plan, which is scheduled to start in FY2020.



Shigeki Nagamatsu  
Chief Director, Responsible Care Verification Center  
Japan Chemical Industry Association