

# Environment

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- Information Disclosure Based on TCFD Recommendations
- Chemical Substance Management

### Main initiatives and outcomes in four years of the Mid-term Management Plan 2023, “Challenges for Evolution” (Environment)

Basic Policy	Initiatives and Outcomes		Related Pages
Strengthen the management base	Support for initiatives	<ul style="list-style-type: none"> <li>Having in response to climate change declared our support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in September 2021, we are currently performing scenario analyses that prioritize those of the Company's mainstay products that have a significant impact on our finances and on CO<sub>2</sub> emissions.</li> </ul>	> P.46–49 Information Disclosure Based on TCFD Recommendations
	CO <sub>2</sub> reduction	<ul style="list-style-type: none"> <li>Having changed the method of calculating CO<sub>2</sub> emissions to one based on the GHG Protocol, we calculated Scopes 1 to 3, and adopted “achieving zero CO<sub>2</sub> emissions from consuming electricity for business” as a goal for fiscal 2030, and that CO<sub>2</sub> emissions in fiscal 2022 would be reduced by approximately 27% compared with fiscal 2018.</li> </ul>	
	Resource recycling	<ul style="list-style-type: none"> <li>In February 2022, we took an equity stake in R Plus Japan, Ltd., which operates a used plastic recycling business. Currently, 40 pan-industry companies are participating and working with the aim of bringing a circular economy to fruition.</li> </ul>	> P.45 Environmental Management > P.46–49 Information Disclosure Based on TCFD Recommendations
	Energy conservation	<ul style="list-style-type: none"> <li>Based on regular reports under the Energy Conservation Act for factories and workplaces conducted by the Agency for Natural Resources and Energy, part of the Ministry of Economy, Trade and Industry and the Agency, Dexerials continues to be selected as a superior energy conservation business (S Class) in the business classification evaluation system.</li> <li>In March 2023, we newly constructed the Reception Hall Building within our headquarters and Tochigi Technology Center, receiving ZEB certification for the first time in recognition of our use of renewable energy through solar power generation.</li> </ul>	

## Environmental Management

Having established its Environmental Philosophy and Principles based on its CSR Policy, the Dexerials Group is promoting initiatives with due consideration for the environment in all of its business activities.



### Environmental Initiatives

In its business activities, the Dexerials Group is striving to reduce CO<sub>2</sub> emissions, utilize resources efficiently, properly handle waste, and save water. Particularly in response to climate change, we have set long-term targets and are engaging in various activities designed to reduce environmental impacts.

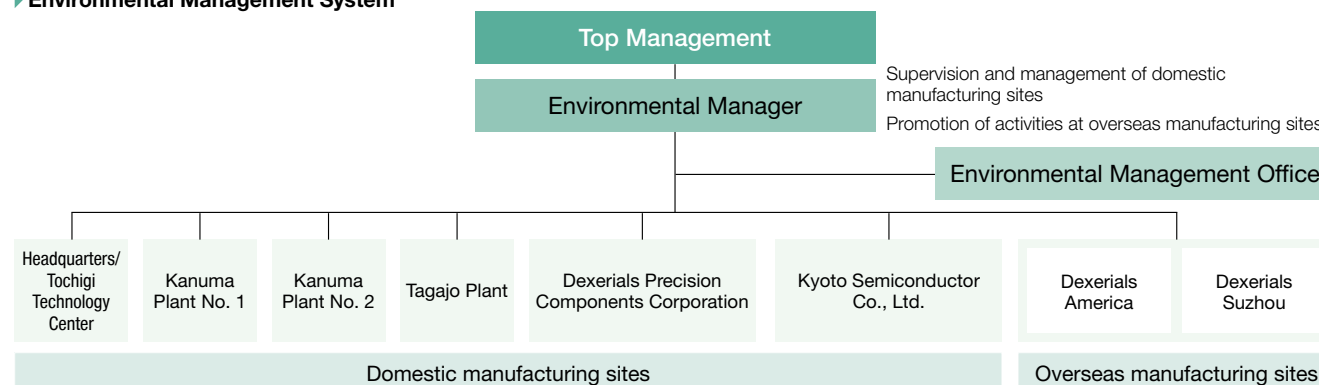
### Environmental Management System

The Group has built an environmental management system that encompasses both domestic and overseas operations. Under the supervision and management of environmental managers, environmental activities are being deployed throughout the Group that take into account the differences in the various products of and equipment at each business site. Also, our manufacturing sites have obtained ISO14001 certification.

### Environmental Targets

To realize a sustainable society, Dexerials has set a long-term target of achieving zero CO<sub>2</sub> emissions from electricity consumed in our business operations by 2030. In addition, as single-year activity goals, we are committed to continuing zero environmental incidents and zero violations of laws and regulations up to 2030.

### Environmental Management System



### Examples of Environmental Improvement Initiatives

Site	Example(s)
Headquarters/Tochigi Technology Center	<ul style="list-style-type: none"> <li>Reduction of electricity consumption by production area reorganization (153,000 kWh)</li> <li>Reduction of chemical substance usage by product design reviews (8 tons)</li> </ul>
Kanuma Plant	<ul style="list-style-type: none"> <li>Reduction of power consumption by installation of energy-conserving facilities/equipment (150,000 kWh)</li> </ul>
Tagajo Plant	<ul style="list-style-type: none"> <li>Reduction of waste emissions by yield improvements (650kg)</li> </ul>
Dexerials Precision Components (DXPC)	<ul style="list-style-type: none"> <li>Reduction of electricity consumption by optimal operations of production equipment and improvements in production efficiency (540,000 kWh)</li> </ul>
Headquarters/Tochigi Technology Center, Kanuma Plant, DXPC	<ul style="list-style-type: none"> <li>Reduction of electricity consumption by implementation of additional energy-conserving measures in response to requests from government to save power (634,000 kWh)</li> </ul>

### TOPICS

Under the business classification evaluation system of the Energy Conservation Act, Dexerials has been continuously selected as a superior energy conservation business (S Class) in fiscal 2022.

(Environmental Philosophy and Principles)  
For details, please refer to our [website](#)



(Compliance with laws and regulations)  
For details, please refer to our [website](#)



## Information Disclosure Based on TCFD Recommendations

Climate change is an important issue that humanity must resolve if we are to realize a sustainable society. We consider action against climate change to be a prerequisite for business continuity for any company.



### Basic Approach

Dexerials declared its support for the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in September 2021. The Company will contribute to the realization of a sustainable society through the appropriate and timely disclosure of information about the management risks and opportunities associated with climate change. In addition, by providing new value through our own products and technologies, we will promote initiatives designed to leave a rich environment to future generations, with the aim of harmonious co-existence with our stakeholders.

### Governance

The Company is promoting activities geared toward the achievement of a sustainable society based on the direction of the executive officer in charge of the Sustainability Promotion Division with the representative director and president as the final authority. To assist in the deployment of specific activities, the Company has, with the participation of the relevant departments, organized Sustainability Working Groups (SWGs) to promote the activities in a united, company-wide manner on the basis of our corporate philosophy, corporate vision, and CSR policy. On the basis of important challenges specified by the Board of Directors, the SWGs set issues by theme and regularly set and monitor goals and activities for those issues. They also enhance activities and promote in-company awareness by taking inter-divisional perspectives into consideration. Reported to and discussed at meetings of the

Board of Executive Officers and Board of Directors as appropriate, individual important themes concerning the promotion of sustainability, including climate change-related challenges, are fed back in the formulation and execution of management strategies.

> P.41 Sustainability Promotion

### Risk Management

In accordance with its rules and regulations on risk management, the Group has established a Risk Management Committee, is conducting assessments of business operational risks for the entire Group, taking measures to avoid or reduce risks, and monitoring their progress. Chaired by the executive officer in charge of risk management, the Risk Management Committee consists of subcommittees for each specialized field and holds its meetings periodically (or on an as needed basis). In the case of the challenges posed by climate change, the relevant jurisdictional subcommittees examined the primary risks, discussed them in Risk Management Committee meetings as risk candidates that needed to be addressed, and selected them as risks to be regularly reported to management.

> P.77 Risk Management

### Strategies

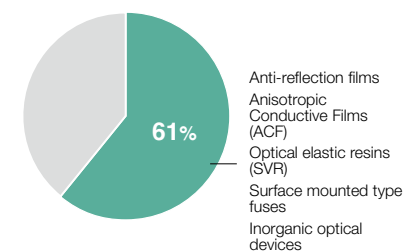
To identify the risks and opportunities associated with climate change on a long-term time axis up to 2050, we are performing analyses taking into account two (1.5–2°C and 4°C) scenarios. In fiscal 2022, we expanded the scope of products subject to

scenario analyses, assessed their impacts on business, and discussed countermeasures.

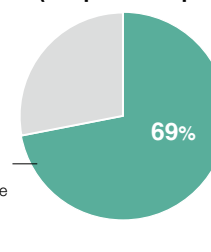
### 1) Scope of Products Subject to Scenario Analyses

We are performing scenario analyses that prioritize those of the Company's mainstay products that have a significant impact on our finances and on CO<sub>2</sub> emissions. In addition to Anti-reflection films, Anisotropic Conductive Films (ACF), Optical elastic resins (SVR), and Surface mounted type fuses, all of which had been subjected to analysis in fiscal 2021, in fiscal 2022 we performed scenario analyses by adding Inorganic optical devices (Inorganic waveplates, Inorganic polarizers, Inorganic diffusers) manufactured by consolidated subsidiary DXPC.

▶ Percentage Sales Breakdown in Fiscal 2022



▶ CO<sub>2</sub> Emissions in Fiscal 2022 (Scope 1+Scope 2)



Note: The above charts include Kyosemi, which became a Group company in March 2022.



## 2) Setting of Scenarios

Having considered the impact on our Group from objective future information with regard to risk and opportunity matters, we discussed the future worldview surrounding our Group.

Set scenario	1.5–2°C scenario	4°C scenario
Overview	As a result of our carbon-neutral efforts, there are accelerated movements toward the realization of a decarbonized society and a recycling-oriented society, in which the average temperature rises by less than 2°C by the end of this century compared with pre-Industrial Revolution levels.	With only limited progress in carbon-neutral efforts, the average temperature 2°C or more by the end of this century compared with pre-Industrial Revolution levels.
Reference scenarios	<ul style="list-style-type: none"> <li>• IEA World Energy Outlook Sustainable Development Scenario</li> <li>• IEA World Energy Outlook Net Zero Emissions by 2050</li> <li>• IPCC AR6 WG1 SSP1-1.9</li> <li>• IPCC AR6 WG1 SSP1-2.6, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• IEA World Energy Outlook Stated Policies Scenario</li> <li>• IPCC AR6 WG1 SSP5-8.5, etc.</li> </ul>

## 3) Climate-related Risks/Opportunities and Main Initiatives for Them

We identified climate-related risks and opportunities for the scope of products subject to scenario analyses, extracted important risks and opportunities that could potentially have a major impact on our business, and then considered initiatives to address them.

Classification	Changes in Social Environment	Impact on Business	Period of Impact*	Risks	Opportunities	Main Initiatives
Transition to low-carbon economy	Policies & legal restrictions	Rise in carbon price	● Increase in production and transportation costs resulting from introduction of carbon tax	Medium to long term	✓	<ul style="list-style-type: none"> <li>● Use of renewable energy and shift to low-carbon fuel</li> <li>● Advancing of energy conservation</li> <li>● Improvement of manufacturing yields</li> </ul>
		Tightening of regulations on reduction of greenhouse gas (GHG) emissions	<ul style="list-style-type: none"> <li>● Increase in costs for energy conservation and shift to renewable energy</li> <li>● Increase in demand for products and service that reduce environmental impacts</li> </ul>	Short to long term	✓	<ul style="list-style-type: none"> <li>● Development and promotion of environmentally friendly products</li> <li>● Collection of information about policy trends</li> </ul>
	Technologies	Development of technologies related to decarbonized and circular society	● Loss of opportunities due to delayed actions for low-carbon/ decarbonization technologies and resource recycling	Medium to long term	✓	<ul style="list-style-type: none"> <li>● Consideration of Reduce, Reuse, and Recycle</li> <li>● Collection of information about low carbon/decarbonization-related technologies</li> </ul>
	Market	Shift to bio and recycled materials	<ul style="list-style-type: none"> <li>● Difficulty in procuring and increased costs of fossil-based materials</li> <li>● Along with practical realization of various bio and recycled materials, it will become easier to use them</li> </ul>	Medium to long term	✓	<ul style="list-style-type: none"> <li>● Consideration of introduction of bio and recycled materials</li> <li>● Collection of information about bio/recycling-related markets and technologies</li> </ul>
		Promotion of energy and resource conservation	● Increase in demand for products that support energy and resource conservation	Short to long term		<ul style="list-style-type: none"> <li>● Provision of solutions for energy and resource conservation</li> </ul>
		Realization of smart society	● Increase in demand for devices used for displays, extended reality (XR) content, sensors, communication equipment, and batteries	Medium to long term		<ul style="list-style-type: none"> <li>● Development promotion and market expansion of products for devices such as displays, XR content, sensors, communication equipment, and batteries</li> </ul>
		Popularization and expansion of next-generation mobility	● Increase in demand for devices used for in-vehicle displays, sensors, communication equipment, and batteries	Medium to long term		
Physical changes	Acute	Increasing severity of climate disasters	<ul style="list-style-type: none"> <li>● Increase in repair costs</li> <li>● Increase in closedowns due to disrupted supply chains</li> </ul>	Short to long term	✓	<ul style="list-style-type: none"> <li>● Strengthening of business continuity planning (BCP)</li> <li>● Consideration of inventory management of materials and products</li> </ul>
	Chronic	Rise in average temperature	● Increase in costs of response to rising temperatures	Short to long term	✓	<ul style="list-style-type: none"> <li>● Consideration of measures for reducing costs of air-conditioning</li> <li>● Advancing of energy conservation</li> </ul>
		Associated with rise in temperature, increase in frequency of disasters, and spread of infectious diseases, etc., lifestyle changes	● Expansion of display-related demand due to spread of remote work (telework) and staying at home	Medium to long term		<ul style="list-style-type: none"> <li>● Enhancement of product lineup</li> </ul>

\* Short term: Three years or less; Medium term: More than three years to 10 years; Long term: More than 10 years

#### 4) Business Impact Evaluation

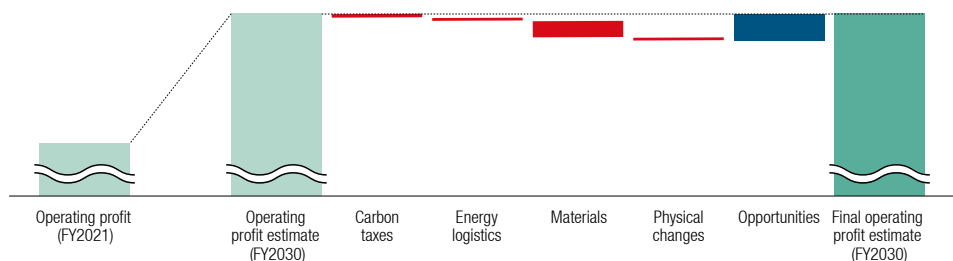
The charts below show the expected financial impacts for fiscal 2030.

In the 1.5–2°C scenario, more rigorous GHG emission regulations will increase costs, such as carbon pricing, energy, and raw materials. However, due to the digitalization accompanying the transition to a smart society, there will be increased sales opportunities—for Anti-reflection films, Anisotropic Conductive Films (ACF), Optical elastic resins (SVR), and Inorganic optical devices—as demand for displays increases due to the progress of the car interior digitalization caused by the shift to EVs and the growth of the AR/VR and metaverse markets. Demand for lithium-ion batteries is also expected to increase due to the expansion of the market for secondary batteries used in home appliances and power tools. Thus sales opportunities for Surface mounted type fuses for secondary protection will also expand, and sustainable growth is expected.

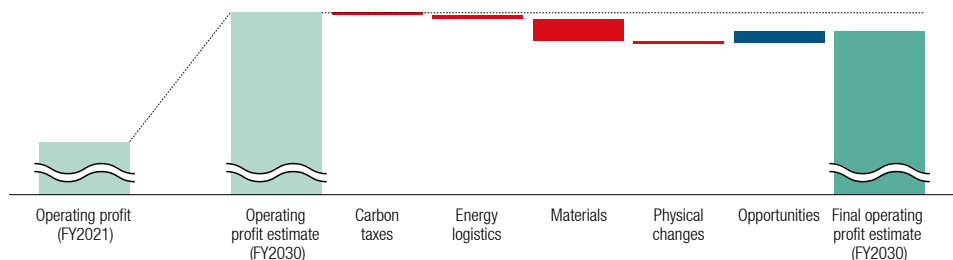
In contrast, in the 4°C scenario we expect sales growth to decelerate as the continued dependence on fossil fuels, increased costs of energy and raw materials due to growing demand for fossil fuels, as well as slow progress in the transition to a smart society, will lead to a loss of sales opportunities.

Going forward, we will expand the scope of products subject to scenario analyses and assess their financial impacts.

##### ► Financial Impact Assessment (1.5–2°C scenario)



##### ► Financial Impact Assessment (4°C scenario)



#### 5) Examples of Initiatives

##### Devices for Battery Applications

In response to the increasing use of electric vehicles, including E-Scooters, which are becoming increasingly popular as a means of achieving carbon neutrality, and of electric automated guided vehicles (AGVs) as part of society's shift toward IoT, the use of lithium-ion batteries is expanding. As these types of equipment handle higher voltages and currents than consumer IT equipment, the fuses to protect them are in demand. Having advanced the development of Surface mounted type fuses capable of handling high voltages and currents, in April 2023 the Company began commercial production of a screw-mounted Self Control Protector (SCP) with a maximum rated voltage of 125V, which is the highest in our product lineup, and a rated current of 150A.

Dexerials will continue its development efforts to make its SCPs compatible with even higher voltages and currents as well as more compact, thereby improving the safety of lithium-ion batteries in a wide range of applications. Thus, the Company will drive carbon neutrality and support society's digitalization and shift toward IoT in its efforts to help build a sustainable society.

##### Resource Recycling

In February 2022, the Company took an equity stake in R Plus Japan, Ltd., which operates a used plastic recycling business. Enabling the generation of raw materials for general plastics from used plastics, the company's chemical cycle is a recycling technology with a small recycling loop and low environmental impact. As of July 2023, 40 pan-industry companies are participating and working with the aim of bringing a circular economy to fruition.

##### ZEB-certified Building

Equipped with conference rooms and an exhibit area, a Reception Hall was completed in March 2023 within our headquarters and Tochigi Technology Center to serve as a facility for communicating with stakeholders, such as customers, shareholders, local residents, and employees. Powered by solar panels installed on the rooftop and utilizing natural ventilation as well as other eco-friendly features, the Reception Hall building meets ZEB certification requirements and has zero CO<sub>2</sub> emissions.



Reception Hall

> P.03 History of Value Creation: Reception Hall newly constructed at Headquarters and Tochigi Technology Center

#### Metrics and Targets

Dexerials has set CO<sub>2</sub> emissions as climate-related evaluation metrics and, by utilizing renewable energy, is aiming to achieve zero CO<sub>2</sub> emissions from consuming electricity for business by 2030. Additionally, based on the scenario analyses, we will consider long-term change metrics and targets such as the reduction of CO<sub>2</sub> emissions in business activities.

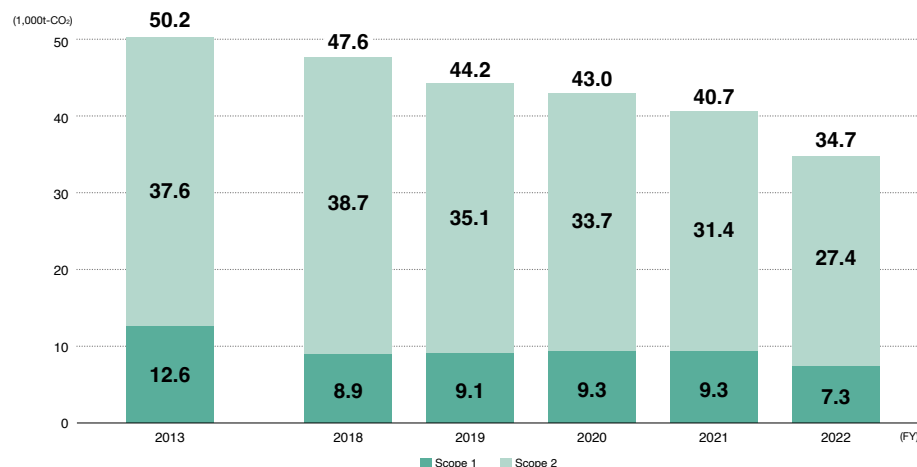
## TOPICS

CO<sub>2</sub> Emissions

Up to and including fiscal 2021, CO<sub>2</sub> emissions were calculated using a method consistent with the Act on Promotion of Global Warming Countermeasures. From fiscal 2022, we have changed the calculation method to one based on the GHG Protocol. Henceforward, we will continue to monitor CO<sub>2</sub> emissions on the basis of the GHG Protocol and work to reduce CO<sub>2</sub> emissions.

## 1) Scope 1, Scope 2

Scope 1 and Scope 2 were calculated for all offices of the Dexerials Group. In fiscal 2022, while sales increased by 10.9% compared with fiscal 2021, CO<sub>2</sub> emissions decreased by 14.7% compared with fiscal 2021 by promoting the introduction of renewable energy in addition to conventional energy-saving activities. This represented a decrease of approximately 31% compared with the fiscal 2013.

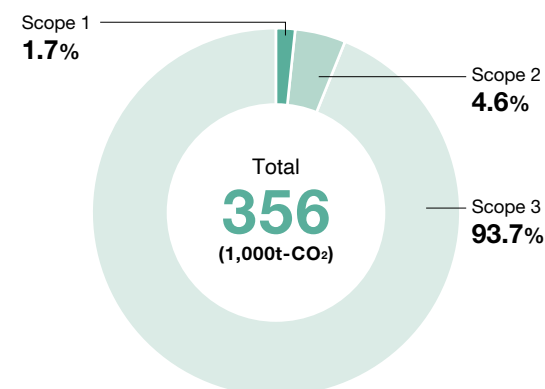
► Dexerials Group CO<sub>2</sub> Emissions Trends (Scope 1 + Scope 2)

\* Excluding overseas sales subsidiaries

\* Kyosemi's CO<sub>2</sub> emissions included in FY2022 only

## 2) Scope 3

We calculated CO<sub>2</sub> emissions (Scope 3) in the supply chain for all domestic business operations, excluding subsidiaries. In fiscal 2022, supply chain CO<sub>2</sub> emissions (Scope 3) amounted to 333,000 t-CO<sub>2</sub>, which represents more than 90% of Dexerials' CO<sub>2</sub> emissions on a standalone basis.

► Dexerials' CO<sub>2</sub> Emissions in Fiscal 2022 (Scope 1 + Scope 2 + Scope 3)► Breakdown of CO<sub>2</sub> Emissions (Scope 3) for Dexerials Alone

(Unit: 1,000t-CO<sub>2</sub>)

Scope 3 category		Emissions
1	Purchased goods and services	285.8
2	Capital goods	8.7
3	Fuel- and energy-related activities (not included in Scope 1 or Scope 2)	4.6
4	Upstream transportation and distribution	18.7
5	Waste generated in operations	1.7
6	Business travel	0.2
7	Employee commuting	2.6
12	End-of-life treatment of sold products	11.1

Note: Categories 8, 9, 10, 11, 13, 14, and 15 fall outside the scope of calculation as there are no corresponding activities

## Chemical Substance Management

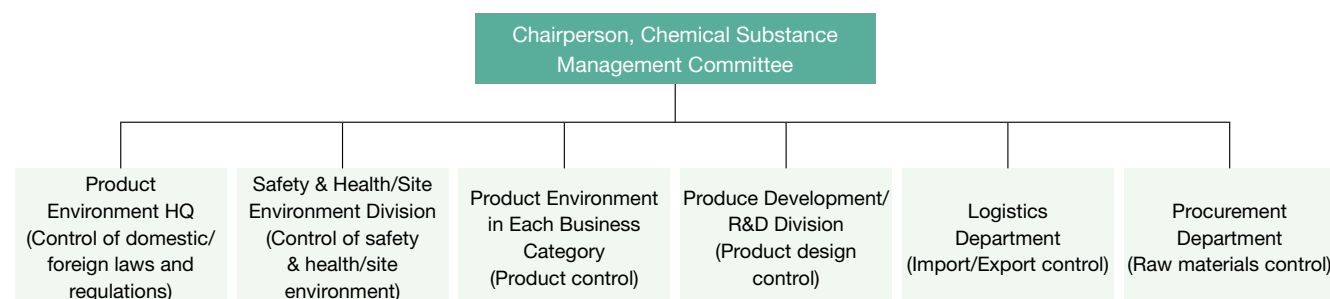
Since the Dexerials Group uses a number of chemical substances in its products and product manufacturing processes, we implement chemical substance management to minimize risks and effects on people's health and the environment.



### Chemical Substance Management System

The Dexerials Group believes that thorough compliance in the management of chemical substances is indispensable to continued provision of safe and secure products to our customers in the future. To put this belief into practice, we have established and operate the Chemical Substance Management Committee, consisting of members from all divisions that are involved from the introduction of raw materials to product shipment. To ensure the proper management of chemical substances used in the Company, this committee shares information and considers responses. In fiscal 2022, this committee met every month to share the latest legal information and discussed responses.

### Organization Chart of the Chemical Substance Management Committee

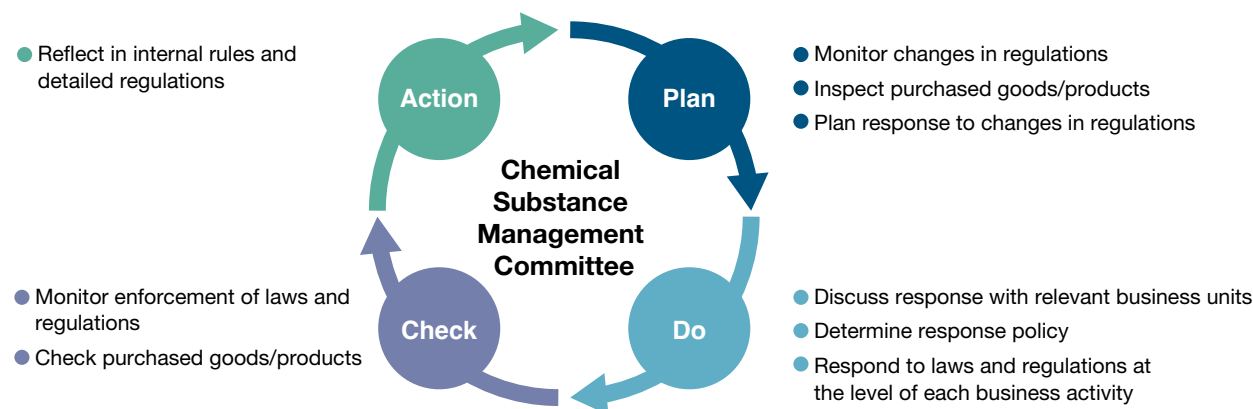


### Responses to Laws and Regulations Relating to Chemical Substances

We investigate, check, and comply with regulations ranging from the purchase of raw materials to product design, manufacture, distribution, import and export, etc., to ensure that the Company responds appropriately to chemical substance laws and regulations in Japan and overseas, such as the Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., and EU REACH Regulation.

Although imports and exports of chemical substances into or out of Japan and overseas may require procedures such as notifications and registrations, we respond appropriately to such regulatory requirements through local sales or manufacturing subsidiaries or consulting companies.

### PDCA Cycle for Responding to Related Laws and Regulations



## Appropriate Management of Chemical Substances

Because chemical substances have risk of adverse effects on people's health and the environment, all chemical substances introduced have their own proprietary classifications and risk assessment. Classification standards and risk assessments are determined based on laws and regulations and GHS classification\* results. We conducted a 100% risk assessment of chemical substances submitted for introduction in fiscal 2022.

\* GHS Classification: GHS, or the "Globally Harmonized System of Classification and Labelling of Chemicals," is a classification standard adopted by the UN in July 2003 for chemicals according to types of hazards

## Visualization of Chemical Substance Laws and Regulations

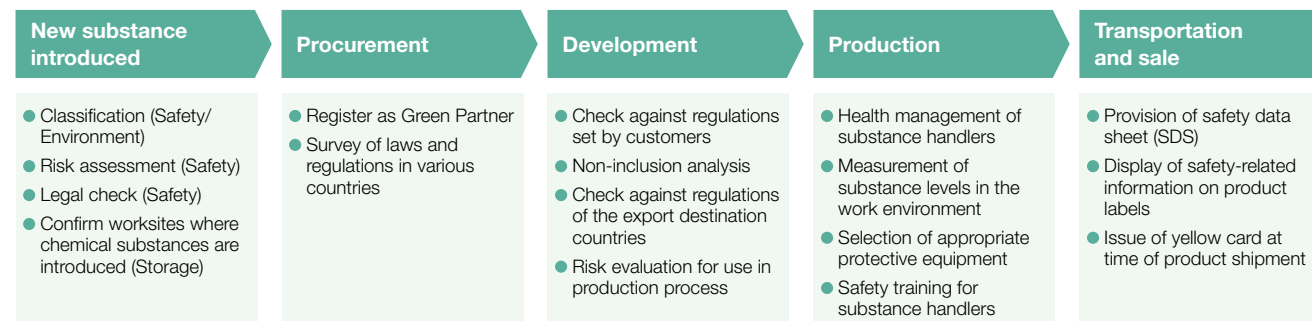
We are also engaged in making information on laws and regulations on chemical substances in each relevant country easily viewable, so as to ensure appropriate management of chemical substances on a continuous basis.

In fiscal 2022, we identified early the details of proposed regulations on chemical substances that have a significant impact on our Company. We then shared the schedules for the regulations internally and discussed how to respond to them throughout the Company.

## Internal Web Portal to Regulatory Information on Chemical Substances



## Internal Management Flow for Chemical Substances



## Operation of Chemical Substance Management System

The Group uses a system to manage purchased raw materials and reagents that are widely used by development divisions based on the type of chemical substance, and the data can then be output by item for Pollutant Release and Transfer Register (PRTR) totals and other objectives.

The data is useful for preventing compliance violations, as it can be widely used for investigations into the use of chemical substances based on the type of chemical substance in manufacturing divisions and R&D divisions at business sites in Japan, as well as to confirm compliance with laws and regulations.

domestic and foreign laws and regulations in the import and export of products and developed products.



Education using VR system for experiencing chemical substance accidents



Group education

## Education on Chemical Substances Management

Since the Dexerials Group frequently uses chemical substances, we provide employees with education through e-learning, internal training programs, and virtual reality (VR) systems regarding legal requirements, such as the Poisonous and Deleterious Substances Control Law, and handling of chemical substances to allow them to simulated experience accidents involving chemical substances. In fiscal 2022, we also began educating Kyoto Semiconductor employees who recently joined the Group.

We provide compliance education to ensure adherence with

## Content of Chemical Substance Education in Fiscal 2022

- Chemical substance basics
- Prevention of health hazards caused by acrylic and epoxy resins
- Management of hazardous materials, organic solvents, and poisonous and deleterious substance
- Handling of organic solvents
- Mutagenic substance
- Explanation of the Poisonous and Deleterious Substances Control Law