

COORSTEK

EHS Report 2019

Environmental, Health, and Safety Report

CoorsTek KK Group**Environmental, Health, and Safety Report 2019**

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Editor's Note

This is our seventeenth report since our first report, titled Environmental Report, was published in 2003. In this report, we present the business, social and human, and environmental activities of the CoorsTek KK Group (the Group), which includes CoorsTek KK (the Company) and our subsidiaries, as they reflect our commitment to environmental, health, and safety activities. Our purpose is to communicate the Group's activities in a way that our customers, shareholders, employees, people in local communities, and other stakeholders can easily grasp.

Scope of the Report

This report covers the following facilities and affiliated companies.

CoorsTek KK

■ Head Office	Osaki Wiz Tower, 11-1, Osaki 2-chome, Shinagawa-ku, Tokyo
■ Oguni Facility	378, Oaza Oguni-machi, Oguni-machi, Nishiokitama-gun, Yamagata Prefecture
■ Hadano Facility	30, Soya, Hadano, Kanagawa Prefecture
■ Kariya Facility	1, Minami-Fuji, Ogakie-cho, Kariya, Aichi Prefecture

Consolidated Subsidiaries

■ CoorsTek Tokuyama Corporation	2-1-32, Eguchi, Shunan, Yamaguchi
■ CoorsTek Nagasaki Corporation	296, Momozugo, Kawatana-cho, Higashisonogi-gun, Nagasaki
■ CoorsTek Sales KK	Osaki Wiz Tower, 11-1, Osaki 2-chome, Shinagawa-ku, Tokyo

Remarks:

- The above three facilities and two consolidated subsidiaries are collectively referred to as "business sites."
- The Head Office and CoorsTek Sales KK are not included in the environmental reporting data.
- For corporate data, please refer to our website.
<http://www.coorstek.co.jp/jpn/corporate/overview.html>

Reporting Period

This report presents the results of activities in fiscal 2018 (January 1, 2018 to December 31, 2018) and other content.

Publication

Previous issue: March 2018

Next issue: April 2020 (scheduled)

Reference Guidelines

Environmental Accounting Guidelines (fiscal year 2005 version), Ministry of the Environment of Japan

Vision

Vision

CoorsTek Group's Mission, Vision & Values

Vision

We make the world measurably better.

Mission

CoorsTek is the partner of choice for technology and manufacturing companies worldwide whose success requires the unique, high-performance properties of products manufactured from engineered ceramics and advanced materials.

We deliver outstanding value through:

- Unsurpassed expertise in materials engineering
- Broad research, development, and manufacturing capabilities
- Operational excellence
- Highly collaborative, responsive, and reliable relationships

Values

- Dignity: In everything, we do to others what we would have them do to us.
- Integrity: We do what we say. We say what we mean.
- Customer-focus: We create outstanding value for our customers.
- Teamwork: We work together to make our company the best.

CoorsTek's Corporate Philosophy

1. Prioritizing the Customer

We accord the highest priority to customers' satisfaction by providing value-rich products and services based on new perspectives and dynamic ideas.

2. Enhancing Corporate Value

Through constant change in management practices and technological innovation, we strive to garner the trust and meet the expectations of all who are stakeholders in the CoorsTek Group.

3. Contributing to Society

We place the highest consideration on human safety and environmental conservation, and as a good corporate citizen, we aim to achieve a symbiotic relationship with the global community and local communities in which we have a presence by contributing to their developments.

4. Conducting Fair Business

We are fully aware of our social responsibilities as a corporate entity, and we obey the rules and established norms of Japan and other countries as we conduct business fairly and with integrity.

5. Respecting the Individual

We respect each employee's individuality and creativity, and we foster a fair and generous environment in which he or she can grow and evolve as an individual.

Corporate Message

Message from the Company

We make the world measurably better

As a global engineering ceramics manufacturer with a 100-year history, the CoorsTek Group contributes to a world in which we can feel measurable achievements. Through development based on the direct needs of a wide range of customers and markets in many business areas, we will continue to provide even better products.

At the same time, we practice our corporate philosophy, which is to "place the highest consideration on human safety and environmental conservation." We believe that environmental conservation, health, and safety are key elements to continuing our business, therefore we contribute to the development of society through a variety of activities.

In 2018, all facilities completed the transition to ISO14001, the current 2015 version of the Annual Environmental Management System, an internationally recognized standard for environmental management systems. Furthermore, activities aimed at zero emissions significantly improved total emissions per unit compared to the previous year. In 2019, we continue to promote effective use of resources, reduce chemical substances, and mitigate global warming to reduce the environmental impact of our business activities.

In the area of safety and health, we have been evaluating ergonomics. This year, we are conducting evaluations of remaining facilities to improve risks identified at all workplaces and create work environments easier to work in from a scientific and technological standpoint. In addition, as part of our KY^{*1} approach, we are introducing the CoorsTek Group's common 4-Sight (foresight) ^{*2}, which further enhances our safety culture by evolving our conventional KY and KYT approaches.

Over the next 100 years, we will continue to grow our business and improve our corporate value. We will also promote various activities to ensure stakeholder satisfaction. We ask for your continued guidance and encouragement.

CoorsTek Co., Ltd.

*1 KY stands for "kiken yochi," a point-and-call risk reduction system designed to predict hazards.

*2 4-Sight (foresight): Four items considered prior to work

Environmental Report

Environmental, Health, and Safety Policy

Conducting operations safely and in an environmentally responsible manner requires a diligent attitude and proactive steps. At CoorsTek, we believe ACTION is the key to achieving ZERO injuries or environmental incidents.

Anticipate potential hazards and take action to prevent them from doing harm

Commit to protecting yourself, employees, and the environment

Think about the contributing factors of injuries, accidents, and illnesses and learn from them

Initiate continual process and program improvements

Own it! It is up to us to prevent injuries, illnesses, and pollution

Network with others to share best practices and elevate our performance beyond compliance

Environmental activities

The CoorsTek KK Group regards environmental conservation as a key management issue. We are engaged in environmental conservation activities on a continual and voluntary basis, guided by the Environmental Policy we established in 1989.

CoorsTek KK Group Environmental Policy

The CoorsTek KK Group works to bring together materials, technologies and people to create new values. In carrying out our activities, we promote environmental conservation in the belief that the Earth's resources are invaluable. Accordingly, we promote the following management concepts:

- (1) Position environmental conservation as a critical issue at the heart of our business.
- (2) Adhere to environmental laws, environmental guidelines agreed to by CoorsTek KK Group, and other voluntary environmental protection standards.
- (3) Reduce the environmental impact of our business activities and prevent pollution.
- (4) Set voluntarily action plans such as energy conservation to help prevent global warming, including policies such as zero emissions, through the effective use of resources and reducing the use of chemical substances.
- (5) Promote green procurement, including prioritizing the selection of raw materials that have minimal environmental impact.
- (6) Contribute to society by developing and providing superior environmental technology and products, cooperate with communities, and undertake environmental protection activities in general.

Environmental Management Structure

Environmental management structure

We have an integrated environmental management structure in which the Group Environmental Committee is the top decision-making body for matters relating to environmental management.

All business sites operate under environmental management systems that comply with ISO14001 standards.

◆ Management Organizational Structure



◆ ISO 14001 Certification Status (as of March 31, 2019)

Business Site	Initial Certification Date	Certification Body
Oguni Facility	Feb. 1998	Intertek Certification Japan Ltd.
Hadano Facility	Mar. 1998	Intertek Certification Japan Ltd.
Kariya Facility	Apr. 2000	Japan Quality Assurance Organization
CoorsTek Tokuyama Corp.	Mar. 1998	Japan Quality Assurance Organization
CoorsTek Nagasaki Corp.	Dec. 2000	Intertek Certification Japan Ltd.

Environmental, health, and safety audits

Environmental, health, and safety audits by CoorsTek, Inc.

Environmental, health, and safety audits are conducted periodically at each business site by parent company CoorsTek, Inc. in the United States. CoorsTek, Inc. (USA) and external environmental, health, and safety specialists in Japan and from overseas conduct audits to check the CoorsTek Group's compliance with global standards and domestic laws and regulations.

In 2018, audits were conducted at Hadano Facility, Kariya Facility, and CoorsTek Nagasaki Co. Ltd.



Hadano Facility

Kariya Facility

Internal audits

The Chief Environmental Management Officer and EHS personnel conduct compliance audits and activity assessments at each business site. The CoorsTek Group uses its standards to verify compliance with environmental laws and regulations and assess the status of the Company's environmental activities. EHS personnel follow up on assessment results and work to improve environmental efforts.



Oguni Facility



Kariya Facility



CoorsTek Nagasaki

Environmental education

In order to better understand and enhance our environmental conservation skills, all Group employees undergo environmental education on a regular basis. The content of the education varies according to positions and responsibilities. To ensure compliance and enhance the skills of individual employees, the Group supports and encourages employees to acquire qualifications and attend lectures.

Contractors working at the Group's sites are informed of environmental and safety requirements.



Inspection and education for environmental conservation (Kariya facility)



Environmental education for new employees (Hadano Facility)

Number of Qualified EHS Employees

Major qualifications	Number
Pollution control managers	45
Energy managers	17
Environment measurement engineers	4
Specially controlled industrial waste managers	13
Health officers	24
Working environment measurement experts	5

Objectives of Environmental Activities and Results

Green manufacturing to reduce environmental impact

Overview of voluntary environmental action plans

The CoorsTek KK Group has formulated a voluntary environmental action plan and it conducts activities to reduce environmental impacts of business activities.

◆FY2018 Voluntary Environmental Action Plan and Performance

Priority Initiatives	FY2018 Voluntary Environmental Action Plan	Results	Evaluation*2
Global warming mitigation	Improvement of an average of 1% or more per year in ratio to direct costs (crude oil equivalent/DC) in the past 5 years	Average of 9.0% improvement	◎
Pursuit of zero emissions*1	Reduction of ratio of total waste discharged in relation to direct costs (value vs. waste /DC) over FY2017 level	Reduction of 14.6% over FY2017 level	◎
Reduction of chemical substances	Setting reduction targets at each business site for selected chemical substances used in large quantities	26.67% reduction of PRTR*3 substance use in ratio to direct costs compared to FY2017 level	◎
Others	Activities by following and maintain ISO14001:2015	Three business sites certificated ISO14001:2015 All business sites completed for certification in 2018	

*1 Zero emissions of waste: final disposal rate (final disposal amount / total waste discharged x 100) of ≤1

*2 ◎ Objective exceeded ○ Objective achieved △ Objective not achieved

*3 PRTR (Pollutant Release and Transfer Register) is a system for ascertaining, aggregating, and publishing data on the amounts of harmful chemical substances released into the environment or transferred offsite and the sources of such substances

◆FY2019 Voluntary Environmental Action Plan and Medium- to Long-Term Plan

Priority Initiatives	FY2019 Voluntary Environmental Action Plan	Voluntary Environmental Actions and Medium- to Long Term Plan
Global warming mitigation	Improvement of an average of 1% or more per year in ratio to direct costs (crude oil equivalent/DC) in the past 5 years	(Medium- to long-term plan) Reduce CO2 emissions (total amount) by 3.8% or more in FY2020, taking FY2005 as a baseline.
Effective use of resources	Reduction final disposal rate Reduction of ratio of total waste discharged in relation to direct costs (value vs. waste /DC) over FY2018 level	(Medium- to long-term plan) Reduce final disposal rate (final disposal amount / total waste discharged x 100) to 2% or less in FY2020.
Reduction of chemical substances	Setting reduction targets of ratio of use to direct costs at each business site for selected chemical substances used in large quantities	—
Others	Prevention of environmental abnormalities (continuation of zero environmental abnormalities affecting the outside of the site)	—

Environmental accounting

CoorsTek KK Group assesses environmental costs and applies the results to business activities.

◆ Environmental Costs

Unit: Millions of yen

Classification	Content	Expenditure ^{*1}	Costs ^{*2}
I Business area costs		133.4	718.0
I - i Pollution prevention costs	Prevention of pollution to atmosphere, water, soil, etc.	36.9	467.6
I - ii Global environmental conservation costs	Mitigation of global warming, conservation of ozone layer, etc.	96.5	46.3
I - iii Resource circulation costs	Effective utilization of resources, recycling of waste, etc.	0	204.1
II Upstream/downstream costs	Green procurement, product recovery and recycling, etc.	0	0
III Administration costs	Monitoring of environmental impacts, planting of greenery, etc.	0.5	25.8
IV R&D costs	Development of environmentally conscious products etc.	0	73.4
V Social activity costs	Disclosure of information etc.	0	0.3
VI Environmental remediation costs	Natural restoration etc.	0	0.1
Total environmental cost (millions of yen)		133.9	817.6

Period: January 2018 to December 2018. Subjects: 5 business sites

*1 Expenditures: of expenditures subject to depreciation, amounts for environmental conservation are reported.

*2 Costs: total amounts of expenditures for environmental conservation and depreciation of facilities are reported (including labor costs).

◆ Environmental conservation effects

Energy consumption, water consumption, and amount of waste have increased year on year due to increased production.

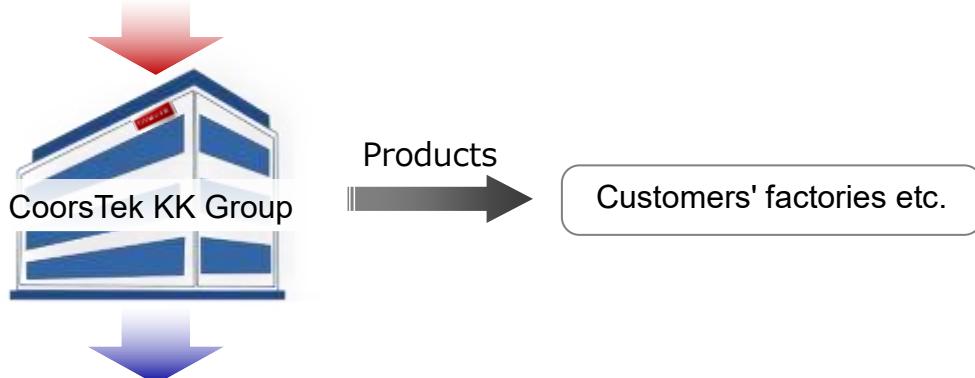
Actual Effects	Environmental Impact Compared to FY2017	Monetary Value of Effects
Energy consumption	increase of 60,000 GJ	increase of 379.6 million yen
Water consumption	increase of 31,000 m ³	decrease of 5.1 million yen
Amount of waste	increase of 106 t	decrease of 32.09 million yen

Environmental Impact

Reducing environmental impact by continually analyzing the impact of business activities on the environment

INPUT

Energy Input			Principal Raw Materials ^{*1}		
Purchased electricity	1,510,036	GJ	Silica	5,229	t
LPG	63,134	GJ	Alumina	342	t
Fuel oil A	41,094	GJ	Carbon	487	t
Kerosene	13,906	GJ	Silicon carbide	457	t
Utility gas	5,873	GJ	Coal tar and tar pitch	317	t
Gas oil	313	GJ	Silicon	235	t
Gasoline	339	GJ	Zirconia	177	t
Steam	77	GJ	Copper	120	t
—	—	-	Principal Source Gases ^{*1}		
Total energy input	1,634,772	GJ	Silicon tetrachloride	1,300	t
Water Input			Amounts of PRTR Substances Handled		
Clean water, industrial water	241	10,000m ³	Hydrogen fluoride and its water-soluble salts	423	t
Groundwater	34	10,000m ³	Others	14	t



OUTPUT

Released into the Atmosphere			Discharge of Waste		
Nitrogen oxides	7	t	Total amount of waste discharged	8,572	t
Sulfur oxides	3	t		4,675	t
Amount of PRTR substances released (atmosphere)	2	t		3	t
Global Warming Gases			Discharged into Water		
CO ₂ emissions (direct emissions)	8	kt-CO ₂	BOD ^{*2} +COD ^{*3}	14	t
CO ₂ emissions (indirect emissions)	78	kt-CO ₂	SS ^{*4}	22	t
CO ₂ emissions from transport	1	kt-CO ₂	Drainage	448	10,000m ³

*1 Principal raw materials and source gases listed are those of which 100 tons or more are consumed per year.

*2 BOD: Biochemical oxygen demand

*3 COD: Chemical oxygen demand

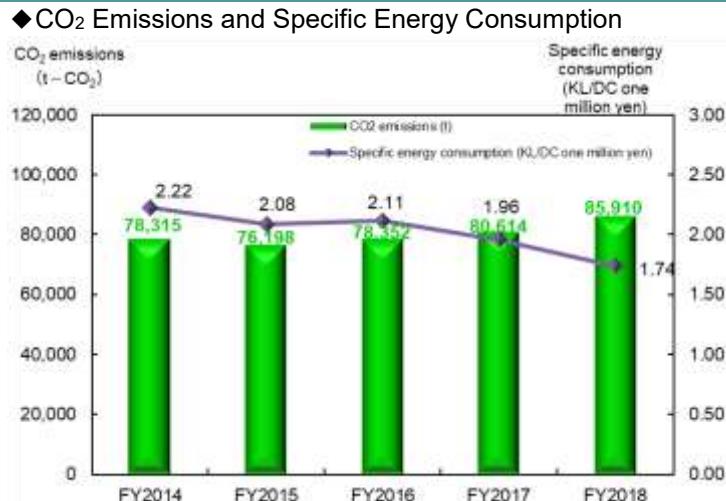
*4 SS: Suspended solids

Mitigation of Global Warming

Reducing CO₂ emissions to counter global warming

Reduction of CO₂ emissions

The CoorsTek KK Group works to reduce CO₂ emissions through productivity improvements and energy conservation measures. Due to increased production in fiscal 2018, CO₂ emissions increased by 6.6% over last year. On the other hand, the ratio to direct costs (crude oil equivalent/DC) in the past 5 years improved by 9.0% as a result of implementing energy conservation activities.



Measures to reduce CO₂ emissions

◆ CO₂ Emissions Reduction Measures and Amount of Reduction

Measure	Facility	Details of Improvement	Amount of Reduction
Case 1 Reduction of power consumption	Oguni Facility	Annual power consumption was reduced by 62,000 kWh by replacing air conditioners, refrigerators, and chillers with energy-saving models.	32.3 t - CO ₂
Case 2 Reduction of power consumption	Hadano Facility	Annual power consumption was reduced by 4,500 kWh due to converting lighting in processing rooms into LEDs.	2.1 t - CO ₂
Case 3 Reduction of power consumption	Kariya Facility	Annual power consumption was reduced by 286,800 kWh by systematically managing the operation of electric furnaces.	136.5 t - CO ₂
Case 4 Reduction of power consumption	CoorsTek Tokuyama Corp.	Annual power consumption was reduced by 109,540 kWh by balancing the opening of the static pressure adjusting window of the melting furnace and the rotation speed of the exhaust fan.	63.4 t - CO ₂
Case 5 Reduction of power consumption	CoorsTek Nagasaki Corp.	Annual power consumption was reduced by 61,000 kWh by replacing compressors, air conditioners, and chillers with energy-saving models.	30.6 t - CO ₂



Case 2 (Hadano Facility)



Case 4 (CoorsTek Tokuyama)

Waste Management

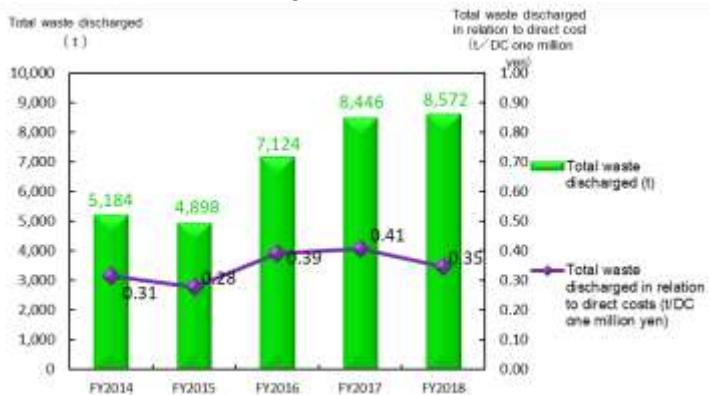
Zero emissions for a recycling-based society based on the 3R concept

Initiatives to achieve zero emissions

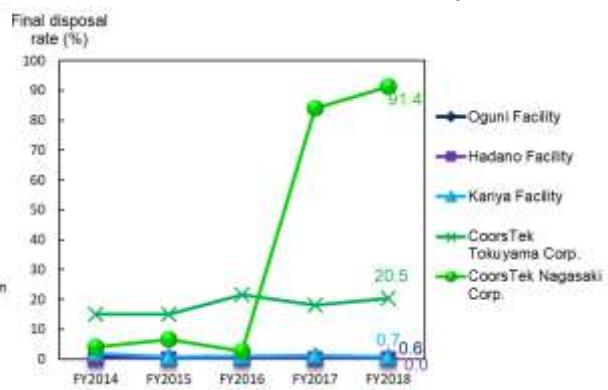
Each business site has a recycling center that manages waste and implements zero emissions activities to help realize a recycling-based society. Activities include minimizing defects and material loss by improving manufacturing yield and working with recycling partners for sludge and scrap waste in accordance with the 3R principles (reduce, reuse, recycle).

Fiscal 2018 resulted in a decrease of 14.6% of total waste discharged in relation to direct cost compared to the previous year. The final disposal rate of CoorsTek Nagasaki Corp. increased due to an increase in production of raw quartz materials. On the other hand, Hadano Facility, Oguni Facility, and Kariya Facility all achieved zero emissions.

◆ Total waste discharged in relation to direct cost



◆ Final disposal rate of each facility



Zero emissions measures

◆ Zero emissions measures

Measure	Facility	Details
Reduction of wastewater treatment sludge	CoorsTek Nagasaki	Wastewater treatment sludge was reduced by controlling the pH of the wastewater treatment process under optimal conditions, reducing the amount of waste water treatment agent used (9 months of reduction results: 260 tons)

Management of Chemical Substances

“One drop control”*1 policy for managing chemical substances

Chemical substance management measures

The CoorsTek KK Group promotes green procurement and responds to the EU's RoHS*1 Directive and REACH*2. We manage chemical substances subject to the PRTR Law and substances subject to the Poisonous and Deleterious Substances Control Law, taking into consideration human health and safety, prevention of pollution, and reduction of environmental impact. As we strengthen the implementation of the “one drop control*3,” we ensure meticulous management of data on usage, release, and transfer.

*1 RoHS (Restriction of Hazardous Substances) Directive: European Union directive to restrict the use of lead, mercury, cadmium, hexavalent chromium, and certain brominated flame retardants (PBB, and PBDE) in electrical and electronic equipment.

*2 REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) Regulation: European Union regulation mandating registration, evaluation, authorization, and restriction of the use of chemical substances

*3 “One drop control” is the Group’s practice of meticulous substance management. It involves daily cleaning and inspection so that no leakage—not even one drop of oil, chemical, or other substance—is overlooked. Structures are designed and maintained to ensure easy detection of any leakage. For example, trays and overflow spill basins are kept dry.

Pollutant release and transfer register (PRTR) substances

The main PRTR substance that the CoorsTek KK Group handles is hydrofluoric acid, which is used for cleaning. There was an increase in the amount of hydrofluoric acid handled and released in fiscal 2018 due to an increase in the production of raw quartz materials.

◆ PRTR Results for Fiscal 2018

Unit: t

Substance number specified by the PRTR Law	Substance name	Amount handled	Amount released	To air	To water	To soil	To on-site landfills	Amount transferred	To sewage	As waste
71	Ferric chloride	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
302	Naphthalene	7.6	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0
349	Phenol	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
374	Hydrogen fluoride and its ater-soluble salts	422.7	0.1	0.1	0.0	0.0	0.0	3.1	0.0	0.0
405	Boron compound	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total		436.7	1.6	1.6	0.0	0.0	0.0	3.1	0.0	0.0

Storage of polychlorinated biphenyls (PCBs)

The Group systematically removes and strictly manages equipment that is stored or in use that contains PCBs to ensure no PCB environmental pollution occurs during the time until 2026, the year in which the government mandates that disposal must be completed by disposal companies.

◆ Equipment Containing PCBs in Storage or Use (as of December 31, 2018)

Type of Equipment Containing PCBs (including low-concentration PCBs)	Unit type	Total
Transformers	Unit	16
Capacitors	Unit	17
Stabilizers	Unit	230
Other equipment	Unit	7
Others (effluents, waste cloths, etc.)	kg	23

Measures to prevent air pollution and offensive odors

The CoorsTek KK Group prevents air pollution and the release of offensive odors by installing exhaust gas treatment equipment, fuel conversion, and other measures. Each business site has established voluntary exhaust gas standards and works to reduce environmental impact.

Water pollution prevention

The Group reduces the burden on wastewater treatment facilities through appropriate use of raw materials, abrasives, and chemical substances used in production processes at each business site. The Group has also established voluntary standards at each of the sites and is strengthening the monitoring of water quality. In addition, each business site conducts emergency response drills to enable a rapid response in the event of an emergency. CoorsTek Nagasaki held a joint emergency response training with chemical suppliers and waste disposal companies.



Green Procurement

In order to create environmentally conscious products, we promote the procurement of products, parts, materials, and raw materials with low environmental impact (green procurement).

Green procurement

Under our Green Procurement Guidelines, we practice green procurement to make eco-friendly products. We prioritize purchasing raw materials, parts, and supplies that reflect consideration for health, safety and the environment. Our efforts include eliminating hazardous substances and converting to substances with a minimal environmental impact, and incorporating RoHS^{*1} and REACH^{*2} directives and regulations.

CoorsTek KK Group Basic Purchasing Policy

• Optimized Global Procurement

Based on fair and impartial market principles, we conduct business with suppliers who provide the best quality, price and delivery terms, regardless of location.

• Building Trust

We create mutual benefits based on relationships of trust. We do not disclose to external parties confidential matters that come to our knowledge in the course of business.

• Compliance

We regard compliance with the law as the basis of every transaction.

• Green Purchasing

Our procurement activities give priority to environmentally-conscious products and services.

• Conflict Minerals Policy

We do not purchase conflict minerals or materials or products that use metals derived from conflict minerals which come from the Democratic Republic of Congo or its neighboring countries, where such minerals may serve as funding sources for militia groups that commit human rights abuses.

We kindly request that our suppliers also be transparent in their procurement of materials and parts.

History of Our Commitment to the Environment

Ever since our foundation, we have prioritized harmony with society and the environment in the conduct of business. We intend to continually strengthen the basis of environmental management with the aim of ensuring sustainable management*1.

*1 Sustainable management is defined as contributing to the realization of a sustainable society by practicing corporate responsibility in economics, society, and the environment and by respecting people.

History of CoorsTek KK Group	Main environmental conservation activities and commendations	Main improvements related to environmental conservation
1918 Toyo Taika Renga Co., Ltd. (currently Kariya Facility) is established. 1928 Denki Kinyu Co., Ltd. (currently Oguni Facility) is established.		
1956 Kawatana Plant (currently CoorsTek Nagasaki Corp.) is established. 1958 Nihon Denko Co., Ltd. is renamed Toshiba Denko Co., Ltd. 1959 Tokai Rozai Co., Ltd., is renamed Toshiba Internal Insulation Co., Ltd. 1961 Hadano Facility is established. 1968 Toshiba Ceramics Co., Ltd. (currently CoorsTek KK) is established as a result of the merger between Denko Co., Ltd. and Toshiba Rozai Co., Ltd.	1951 Oguni Facility receives the Director-General Award for Excellent Factories for Energy Control (Heat Category).	1954 Oguni Facility's Akashiba Power Plant (hydroelectric) in Oguni, Yamagata prefecture, is completed.
1971 A research center (currently the Core Technology Center) is established.	1974 Oguni Facility receives the Director-General Award for Excellent Factories for Energy Control (Heat Category).	
1982 Tokuyama Ceramics Co., Ltd. (currently CoorsTek Tokuyama Corp.) is established.	1978 Oguni Facility receives the Award of the Minister of International Trade and Industry for Excellent Factories for Energy Control (Heat Category).	
1984 Tokai Ceramics Co., Ltd. is established.		
1991 Niigata Toshiba Ceramics Co., Ltd. Is established for volume production of large-diameter silicon wafers.	1984 Kariya Facility receives the President's Prize from the Japan Energy Conservation Center as an example of excellent energy savings. 1991 Use of chlorine-based organic solvents is abolished throughout the Group.	1985 Oguni Facility introduces waste heat-based snow removal equipment, which does not involve water spraying.
	1997 Oguni Facility starts manufacturing lead-free carbon brushes.	1990 Oguni Facility's second Akashiba Power Plant (hydroelectric) is completed.
	1998 Oguni Facility receives an award from the Director-General of the Tohoku Bureau of Economy, Trade and Industry for Excellent Factory Greening.	1998 An emergency automatic shut-off gate is introduced at the final discharge outlet of Oguni Facility.
	1999 Kariya Facility receives an award in the Aichi Prefecture Factory Greening Contest.	1999 Sound barrier walls are installed at site boundaries of Hadano Facility.
	1999 Nagasaki Toshiba Ceramics Co., Ltd. (currently CoorsTek Nagasaki Corp.) gains Eco-Mark certification for its foamed (porous) ceramics.	
	2000 Green Procurement Guidelines are established and suppliers are evaluated for green procurement.	2000 Removal of incinerators from all production sites is completed.
		2001 Heat storage exhaust gas treatment equipment is installed at Kariya Facility to control offensive odors and VOCs.
		2004 Measuring equipment for total phosphorus and total nitrogen is installed at Kariya Facility.
		2004 Introduction of central monitoring systems at final discharge outlets is completed at Oguni, Hadano and Kariya Facilities.
		2004 Nagasaki Toshiba Ceramics Co., Ltd. (currently CoorsTek Nagasaki Corp.) changes furnace fuel from heavy oil to kerosene in order to reduce SOx.

History of CoorsTek KK Group	Main environmental conservation activities and commendations	Main improvements related to environmental conservation
	2005 Oguni Facility receives the Minister of Economy, Trade and Industry Award for Excellent Factories for Energy Control (Heat Category).	2005 Kariya Facility installs catalyst combustion type odor control equipment in furnaces at advanced ceramics factories 1, 2 and 3.
2006 SIC Investment, a special purpose corporation for the tender offer of Toshiba Ceramics' shares, is established. Toshiba Ceramics becomes a subsidiary of SIC investment following completion of the tender offer.	2006 Kariya Facility holds an explanatory meeting for local residents about soil and groundwater contamination. 2006 Onsite soil and groundwater measures are completed at Kariya Facility.	2005 CoorsTek Nagasaki changes furnace fuel from kerosene to LPG in order to reduce CO ₂ emissions. 2006 Hadano Facility changes boiler fuel from heavy oil to LPG in order to reduce CO ₂ emissions.
2007 Toshiba Ceramics Co., Ltd. becomes a wholly owned subsidiary of SIC Investment following completion of the share exchange. SIC Investment is renamed Covalent Materials Corp. Toshiba Ceramics merges with Covalent Materials Corp. and the new Company, Covalent Materials Corp., is inaugurated.	2007 Hadano Facility achieves zero emissions of waste. 2007 Cleanup of contaminated soil at Kariya Facility starts. 2008 Hadano Facility is awarded the Shonan Region Prefectural Administration Center Director's Award for its efforts in waste reduction, reuse, and recycling activities.	2007 Kariya Facility installs catalyst combustion type odor control equipment in the furnace. 2008 Kariya Facility introduces an extra high voltage substation, eliminating the use of heavy oil. 2008 Tunnel kiln fuel is converted from kerosene to LPG to reduce CO ₂ emissions at Covalent Materials Nagasaki Corp. (currently CoorsTek Nagasaki Corp.).
	2009 Cleanup of PCB-contaminated soil at Kariya Facility is completed.	2008 Kariya Facility's status as a specified air pollutant discharging plant is removed due to a shift in business structure and energy conversion.
2010 Akashiba Power Plant is transferred to F-Power Co., Ltd. 2012 Silicon wafer business is transferred to Sino-American Silicon Products. 2013 Shares of Tokai Ceramics Co., Ltd. are transferred to Calderys Japan Co., Ltd. Shares of Covalent Sales Corp. are transferred to Hibino Corp.	2012 Electronic manifest system for industrial waste management begins at Hadano Facility. 2013 Oguni Facility enters the Yamagata Eco Smile Contest, resulting in one 2nd place winner and three special prize winners. 2013 Removal of all PCB equipment by a disposal company is completed by Covalent Materials Tokuyama Corp. (currently CoorsTek Tokuyama Corp.).	
2014 CoorsTek, Inc. acquires the shares of Covalent Materials Corp.	2014 Removal of all PCB equipment by a disposal company is completed by Covalent Materials Nagasaki Corp. (currently CoorsTek Nagasaki Corp.) 2014 Zero emissions status is achieved for the first time at Oguni Facility in fiscal 2013.	
2015 The Company is renamed CoorsTek KK.	2015 Electronic manifest system for industrial waste management begins at Oguni Facility. 2015 195 units of PCB equipment and 13.8 tons of pollutant by a disposal company are removed at Oguni, Hadano and Kariya Facilities.	2015 Three wastewater treatment facilities are consolidated into one at Oguni facility.
	2015 Kariya Facility receives recognition from the city of Kariya as an eco-friendly work site (Kariya eco-friendly workplace) for its efforts in consideration of the environment during the course of business.	2017 Kariya Facility installs catalyst combustion type odor control equipment in its furnace.

Health and Safety Report

Safety and Health Report

Occupational Safety and Health Management Structure

Occupational safety and health management structure

The CoorsTek KK Group has an integrated management and operating structure with the Group Safety and Health Committee as the top decision-making body for matters related to safety and health management. We perform risk reduction activities that conform to the Ministry of Health, Labour and Welfare's Guidelines on Occupational Safety and Health Management Systems.

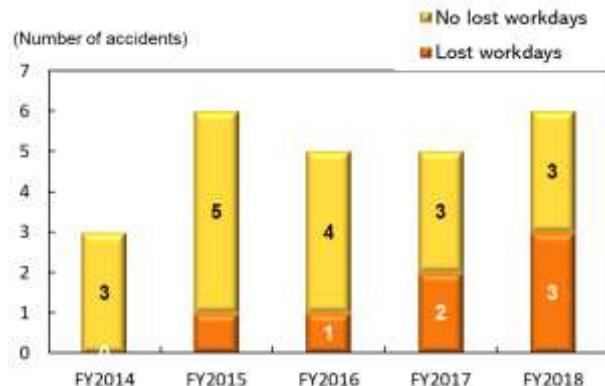


Occupational Accidents

Occupational accidents

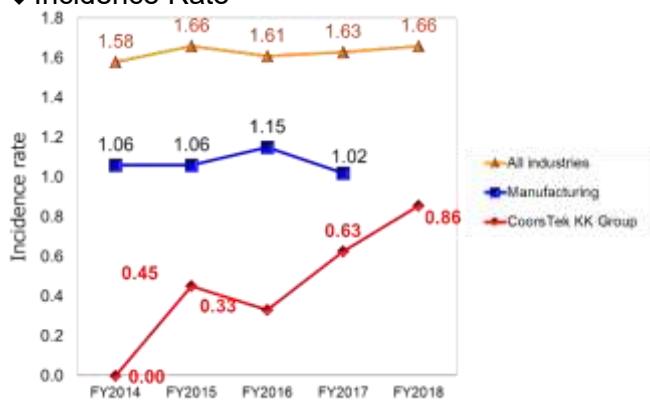
In fiscal 2018, there were six occupational accidents in the CoorsTek KK Group, an increase of one over the previous year, which involved three lost workdays. We strive to eliminate all accidents through initiatives such as protective guards on machines, improving risk levels of safety and maintenance devices, KY ("kiken yochi," or hazard prediction) - the point-and-call risk reduction system, and policies for risk reduction. In 2018, there were no accidents at Hadano and Tokuyama.

◆ Occupational Accidents in the CoorsTek Group

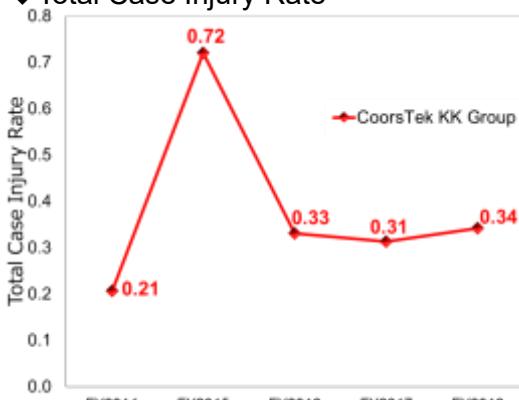


Note: Beginning in 2015, the fiscal year was changed to start on January 1 and end on December 31.

◆ Incidence Rate^{*1}



◆ Total Case Injury Rate^{*2}



Note: Figures other than CoorsTek KK Group are based on statistics from the Ministry of Health, Labour and Welfare on occupational accidents.

*1 Incidence rate: Number of accidents involving one or more lost workdays per million work hours

*2 Total Case Injury Rate: Number of total accidents per 200-thousand work hours

Objectives and Results of Occupational Safety and Health Activities

Objectives of occupational safety and health

The CoorsTek KK Group accords the highest priority to human life. To ensure workplace safety and to safeguard the health of employees and other concerned parties, we have established the Basic Policy on Safety and Health Management in which we maintain safe, comfortable workplaces. We work to prevent occupational accidents and illnesses and encourage employees to maintain their health.

◆Fiscal 2018 Priorities and Results

Fiscal 2018 Priorities	Objectives	Performance	Evaluation ^{*2}
1. Initiatives to eliminate occupational accidents	(1) Establish "kiken yochi" hazard prediction and point-and-call system	Systematically conducted	○
	(2) Improvement of 5% or more for Risk Level ^{*1} II and III	Level II: 9.6%, Level III: 43.8% improvement	○
	(3) Enhancement of safety levels based on health and safety guidelines	Systematically conducted	○
2. Physical and mental health maintenance and improvement	(1) Promote awareness of the importance of improving medical checkup results (awareness activities about irregularity rates above the national average)	Provide health Counseling for employees with observed irregularities	○
	(2) Improvement and enhancement of mental health environment	Systematically conducted	○

*1 Risk Level I: Maintenance of current safety measures
Level II: Risk requiring systematic reduction measures
Level III: Risk requiring prioritized reduction measures
Level IV: Unacceptable risk

*2 ○ Objective exceeded ○ Objective achieved △ Objective not achieved

◆Fiscal 2019 Priorities

1. Initiatives to eliminate occupational accidents (1) Establish "kiken yochi" hazard prediction and point-and-call system (2) Promote risk reduction (3) Introduction of CT Global Standards and enhancement of safety levels based on health and safety guidelines	2. Physical and mental health maintenance and improvement (1) Awareness of the importance of improving medical checkup results (2) Improvement and enhancement of mental health environment
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Occupational Safety and Health Management

Raising awareness of safety and health

At each workplace during National Safety Week and National Occupational Safety and Health Week, all employees, including those of affiliated companies and cooperating companies, attend safety meetings, lectures, and award ceremonies to raise awareness of safety and health.



Safety Week awards (Oguni Facility)



Lecture on occupational health by consultant during Occupational Health Week (Hadano Facility)



Speech at a safety conference by the safety and health section manager of the Labor Standards Inspection Office (CoorsTek Nagasaki)



Accident case work at the second section of the safety conference (CoorsTek Nagasaki)

Occupational safety and health education and training

The Group conducts education programs related to safety and health based on an annual occupational safety and health education and training plan. We work to ensure employees' safety and raise safety and health awareness.



Training for newly hired employees
(Hadano Facility)



Special education based on the Industrial
Safety and Health Law (CoorsTek Nagasaki)

Hands-on safety training

We consider raising each employee's risk awareness important for eliminating occupational accidents and we provide accident simulation training to enable employees to recognize the risks inherent in their work through personal experience.



Hands-on training on dangerous work
at high places (Oguni Facility)



Hands-on training on the dangers of
chemical injury (Hadano Facility)

Implementation of complete lock out and tag out

Lock Out/Tag Out* is a critical procedure for protecting employees who inspect, clean, or maintain machinery or equipment from dangers due to malfunction or incorrect use of the machinery. From 2017 to 2018, we focused on developing Lock Out and Tag Out tools and procedures, and held education and training at all of our facilities.

*Lock Out: To shut off the source of energy (power) supplied to the machine or device, lock the starting device, and prevent others from operating the machine.

*Tag Out: The use of tags to prohibit the operation of machinery shut off or equipment during shutdown of the energy source of the machinery.



Lock Out/Tag Out station in each workplace



Locked out of the breaker of the machine.

Ergonomics evaluation

Ergonomics evaluations are conducted at all CoorsTek Group business sites. In fiscal 2018, ergonomics experts from the U.S. evaluated Oguni, Hadano, Kariya, and CoorsTek Nagasaki sites (CoorsTek Tokuyama is scheduled to be implemented in 2019).

Each site is initiating planned improvements based on the evaluation results.

*Ergonomics: Optimize machine design and work methods to reduce burdens on the body and to prevent illness.



Hadano Facility



Kariya Facility



CoorsTek Nagasaki

Employee health

Physical health management

To create workplaces conducive to employee health, the CoorsTek KK Group mandates medical checkups and provides opportunities for health management and counseling about all aspects of health based on the medical checkup results. As a measure to prevent health problems due to overwork, we address the health problems of individual employees by offering consultations with industrial physicians, which can also be arranged based on employee requests.

Mental health

The Group provides preventive training for managers to promote early stage awareness of persons who might have mental health problems and ensure that they are not overlooked, and provides education to enable employees to recognize any change in their mental health. We provide care for employees by assigning counselors and instituting return-to-work support programs for employees who have taken leave due to mental health problems so they can smoothly return to work.



Learning about mental health issues (Oguni Facility)



Learning about mental health issues (CoorsTek Tokuyama)

Promotion of health

The CoorsTek Group holds various activities and recreational activities to promote the health of employees. At our Oguni Facility, employees from six companies in the town held softball events to promote health and interact with other companies.

Softball tournaments
(Oguni Facility)Soft volleyball tournament
(CoorsTek Tokuyama)Labor-Management Mutual Aid mini
volleyball Tournament
(CoorsTek Nagasaki)

Local Community Relations

Responsibility to Local Communities

Earning the community's trust by promoting good corporate citizenship

Disaster preparedness

■ Disaster preparedness activities

To be prepared for a fire emergency or major earthquake, we periodically hold disaster preparedness drills to ensure a rapid and appropriate emergency response and to minimize damage. At the head office, which includes CoorsTek Sales KK, employees conduct emergency training for preparedness in the event of a large-scale earthquake.



Fire fighting and rescue drills (CoorsTek Nagasaki)



Water hose drills
(Oguni Facility)



Disaster preparedness drills
(Kariya Facility)

Partnership with Local Communities

The CoorsTek KK Group cooperates and forms partnerships with local communities. We fulfill our responsibility as a member of the community and work to expand opportunities for communication.

The Company provides the Wide Plan Leave System to support employees' volunteer activities. Under this system, employees can use their paid holidays that would otherwise expire and apply them to volunteer activities that make a social contribution.

Excerpt from the CoorsTek KK Group Standards of Conduct

Community relations

We maintain good relations with local communities through cooperation and partnerships and fulfill our responsibility as a member of the community.

Corporate citizenship activities

■ Science class and hands-on experience

For employees' family members and students, we offer factory tours and opportunities to learn through experience at our workplaces. We hold science lectures in partnership with the government with the aim of nurturing a well-rounded education for children.

In 2018, employees of CoorsTek and high school students in the Oguni district worked together as volunteer staff to conduct science courses for students from fourth grade to sixth grade in the elementary school.



Science class for elementary school students (Oguni Facility)



High school students receive occupational experience (CoorsTek Tokuyama)



High school students receive occupational experience (CoorsTek Nagasaki)

■ Volunteer activities

The Group cooperates closely with local residents to build better communities. Each business site conducts periodic clean-ups in the surrounding area, holds blood donor drives, and promotes traffic safety activities. Top managers initiate cleaning activities to set a good example for all employees.



Beautification activities (Kariya Facility)



Forest Volunteer "Town-Forest-Water Exchange Meeting" (CoorsTek Tokuyama)



Beautification activities (CoorsTek Nagasaki)

■ Regional activities

Oguni Facility provided a sumo ring at Inari Shrine, located within the facility, to the Azumazeki sumo stable for use as a training camp. Families from the community and beyond came to watch the spirited training of professional sumo wrestlers. The annual Inari Shrine festival also helped deepen relations with local residents, with attractions including the customary employee sumo competition with neighboring company also participating and stalls operated by local residents and employees. Furthermore, in 2018, we held a commemorative event to commemorate the 100th anniversary of Kariya Facility and the 80th anniversary of Oguni Facility to communicate with local communities.

Kariya City mayor invites business partners to commemorate the 100th anniversary

Inviting the mayor of Oguni-machi and local residents



Volunteer sumo contest (Small country offices)

■ Other activities

At Kariya Facility, employees took care of lost cats on the premises until they reached their foster parents' hands, and also protected a lost dog and returned to its owner safely.



CoorsTek KK

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For any comments or inquiries concerning this report or our EHS activities, please contact us.