

# Zeon Corporation – Kawasaki Plant

## Kawasaki Plant Profile

### Main Products

Synthetic rubbers, synthetic latex

Established in 1959, Kawasaki Plant was the first plant in Japan to mass-produce synthetic rubber. It manufactures heat- and oil-resistant synthetic rubber used in automobile engine peripheral components. Synthetic latex is used in products such as rubber gloves, cosmetic sponges, and non-woven fabric. Kawasaki Plant produces many relatively high-value-added products in small quantities.



Aerial view of Kawasaki Plant

### Environment and Safety Policy

The Kawasaki Plant has formulated the following environment and safety policy, based on being a petrochemical plant that handles high-pressure gases as well as hazardous and poisonous substances, and which is located in the Keihin Industrial Zone.

1. With the participation of all employees, we are committed to maintaining safe and reliable operations and to being a plant that is trusted by everyone in the local community.
2. We identify all sources of danger in the workplace, and by reducing and eliminating them, we aim to achieve zero occurrence of environmental and safety incidents and occupational accidents.
3. We strive to continuously reduce environmental impacts in all work processes and to prevent environmental contamination.
4. We comply with environment- and safety-related laws and regulations, agreements, and internal rules and regulations; we also strive to maintain and improve our level of environmental and safety performance.
5. We conduct activities to prevent damage and reduce the extent of damage in the event of a major earthquake and tsunami striking the Tokyo Metropolitan Area.
6. We strive to maintain and improve the physical and mental health of all employees, and to create a vibrant and engaging workplace.
7. We set targets and conduct activities in the areas of the environment, safety, and occupational health and safety; we aim to improve our various management systems on an ongoing basis.

## Plant Policy by the Plant Manager

Kawasaki Plant fulfills its role as a member of the local community. We participate in regular cleanups of the Tonomachi-Yako Route, a highway running through our area. Our employees also plan and hold events at the plant for local companies and residents as a way to give back to our community. We strive to coexist in harmony with the local community to build trust and alleviate concern.



Kawasaki Plant Manager  
Takafumi Kawanaka

## Safety Initiatives

### Policy

Ensuring safety is our highest priority, and we are committed to eliminating accidents and incidents with the involvement of all employees. We have been integrating companywide safety activities since FY 2016 with the goal of continuously improving our safety operations.

### Specific Initiatives

1. Safety education including accident case studies and hands-on experiential education
2. Various safety activities including reviewing and eliminating near-miss accidents

## Environmental Impact Reductions

### Policy

We are working to reduce our emissions of hazardous chemical substances and waste, conserve energy, and more effectively use resources in cooperation with other plants in our industrial complex.

### Scope of Environmental Management System

- (1) Organizational unit: Departments of the Kawasaki Plant, Zeon Corporation  
Function: Manufacturing of synthetic rubbers, synthetic latex, and electronic materials  
Physical boundary: The entire area of the Kawasaki Plant, Zeon Corporation, 1-2-1 and 1-2-2 Yako, Kawasaki-ku, Kawasaki City, Kanagawa Prefecture
- (2) Organizational activities: Business processes from raw materials procurement through to manufacturing, packaging, storage and shipping, and utility operations including wastewater discharge from the R&D Center  
Products and services: Synthetic rubbers, synthetic latex, electronic materials and products, providing information to customers, and responding to complaints from customers and local residents
- (3) Authority and capacity of managing and influencing organization: Head Office divisions (including design and development), partner companies (product logistics, disposal of industrial waste, etc.), vendors (companies supplying raw materials, etc.)

### Specific Initiatives

#### 1. Climate change

- We have installed the latest gas engine cogeneration system as a way to conserve resources and energy.
- We provide a steady supply of excess electricity to external users.
- We are developing processes that effectively use steam and waste heat to continue reducing our environmental impact.

#### 2. Reducing emissions of hazardous chemical substances

- We have installed butadiene and acrylonitrile recovery equipment.
- We are making improvements to equipment to prevent steam containing acrylonitrile from escaping from openings in production equipment.
- We are studying technologies to reduce acrylonitrile emissions to 1 ton or less.

### 3. Reducing waste

- We are separating and reusing resources (recycling and heat recovery) to reduce our industrial waste.
- We are implementing steps to reduce the amount of industrial waste we generate in the first place.

### 4. Reducing impacts on water quality

- We are reducing nitrogen compounds in our wastewater.
- We are making technology improvements to increase stability in managing load fluctuations.

### 5. Environmental data

\*"0" indicates less than 0.5 tons, and "0.0" indicates less than 0.05 tons

Kawasaki Plant		FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Hazardous substances	Butadiene consumption (tons)	20,372	23,534	21,758	23,040	21,940
	Butadiene emissions (tons)	2.4	2.59	2.0	1.9	2.1
	Acrylonitrile consumption (tons)	9,653	11,405	10,746	11,007	10,780
	Acrylonitrile emissions (tons)	11	11	5	4	3
Substances subject to the PRTR Act	Consumption (tons)	40,203	45,847	43,954	43,954	44,012
	Emissions (tons)	26.1	27.9	21.4	19.0	17.5
Industrial waste	Amount generated before compacting (tons)	48,039	52,900	44,380	56,330	42,734
	Amount generated after compacting (tons)	4,024	4,401	3,412	4,704	3,293
	Amount sent to landfills (tons)	0.0	0.0	0.0	0.0	0.0
Atmospheric emissions	CO <sub>2</sub> emissions (tons)	20,917	25,778	23,443	21,409	23,610
	SO <sub>x</sub> emissions (tons)	0.2	0.1	0.3	0.1	0.0
	NO <sub>x</sub> emissions (tons)	7	5.7	5.6	5.9	7.7
	Soot emissions (tons)	1	0.6	0.5	0.5	0.6
Water resource consumption (1,000 m <sup>3</sup> ) (industrial water + groundwater + waterworks)		3,092	3,657	3,241	3,244	3,143
Wastewater	Total wastewater discharge (1,000 m <sup>3</sup> )	2,031	2,185	2,265	2,030	2,029
	COD emissions (tons)	45	44	35	42	56
	Total phosphorus discharge (tons)	0.3	0.2	0.23	0.24	0.2
	Total nitrogen discharge (tons)	93	114.5	89	72	103
Energy	Consumption (crude oil equivalent, kL)	14,406	14,700	13,355	12,857	10,957
	Unit consumption index (FY 1990 = 100)	75%	84%	65%	77%	66%
Production equivalent (tons)		73,834	85,441	80,229	82,271	79,883

## Relationship with Employees

### Policy

We aim for employees to individually develop and improve the skills they need to perform their duties and to cultivate a spirit of cooperation among employees as we implement systematic and ongoing development of self-reliant human resources able to think and act autonomously.

### Specific Initiatives

- Education at the Monozukuri Training Center at Mizushima Plant for employees in their first to third years of employment
- Internal group trainings
- On-the-job training and other vocational education
- Education offered by external parties
- Support for personal development

## Relationship with the Local Community

### Specific Initiatives

#### 1. Contributing to the community through volunteering

- We participate in regular cleanups of the Tonomachi-Yako Route, a highway running through our area, together with other companies and Kawasaki City (twice/year)
- We invite area companies and community residents to the Kawasaki Plant Summer Festival
- We undertake cleanup of roads that constitute commuting routes for our employees (from Kojima Shinden Station to the plant) as a self-directed activity by the plant (three times a year)
- We invite area companies and community residents to the Kawasaki Plant Summer Festival



Group cleanup

#### 2. Interactions with the local community

- We provide business reports and give plant tours (once/year).  
We hold meetings with four neighborhood associations in the community, where we discuss our operations and other relevant topics.
- We hold meetings with representatives from local government together with eight member companies of the Kawasaki district of the Japan Chemical Industries Association Responsible Care Committee



Communication with local government bodies

### 3. Plant tours

We give plant tours to introduce the plant's production activities and initiatives.

- For local residents, community organizations and schools, etc. (7 tours, a total of 84 people)



Plant tours (Nursery school children)