

Zeon Corporation – Mizushima Plant

Mizushima Plant Profile

Main Products

Isoprene rubbers, thermoplastic elastomers, petroleum resins, synthetic aromas, high-performance resins, RIM molded articles, isoprene monomers, butadiene monomers

Established in 1969, Mizushima Plant has facilities for extracting butadiene monomer from the C4 stream* and for extracting isoprene monomer from the C5 stream*, and produces various products using the C5 stream.

*C4 (GBP process), C5 (GPI process): Hydrocarbon molecules containing four and five carbon atoms, respectively, produced as byproducts of thermal cracking of naphtha.



Aerial view of Mizushima Plant

Plant Policy by the Plant Manager

With the motto of “Let’s advance production innovations, business innovations, and process innovations with the culture of ABC” (*atarimae, bakashojiki, and chanto*, or in English: to diligently and properly perform all routine but necessary tasks), we are working to entrench this ABC culture at Mizushima Plant and achieve these three types of innovations.

I believe that the basis for offering products of stable quality while placing the highest priority on safety and environmental protection is employees’ full and steadfast compliance with laws and regulations and adherence to the procedures, rules, and other matters that they have decided.

We have established the Monozukuri Training Center at Mizushima Plant to provide company-wide operator education. The center accepts trainees from each plant and conducts basic education for working in a chemical factory to ensure that Zeon operators can perform the routine but necessary tasks.

We are working to gain the trust of the local community and the wider public with a commitment to safe and stable operations achieved by entrenching the ABC culture and achieving the three types of innovations at Mizushima Plant.



Corporate Officer and Mizushima Plant Manager
Tomoyuki Kose

Safety Initiatives

Safety Policy

As a world-leading plant in the comprehensive use of C5 in integrated production from raw materials to finished products, and with the spirit of contributing to society as provided in Zeon’s CSR Policy and preventing accidents and disasters as provided in Zeon’s Safety Philosophy, we define our safety policy involving production activities for petrochemical products as follows.

1. Safety takes precedence over all else. We implement safety measures, identifying the sources of risk and conducting activities to reduce the risks. We conduct thorough safety education and training on an ongoing basis.

2. We establish a Safety Management System and are committed to accident and disaster prevention. The Safety Management System is regularly revised and improved to enhance its effectiveness.
3. We comply with safety-related laws and regulations, independently set targets for policy issues, and strive to improve the level of plant safety through activities with full employee participation.
4. We pursue safe and reliable production through production innovations to create a workplace in which employees can work with peace of mind and that earns the enduring trust of the local community.

Specific Initiatives

- Distribute “memorial morning notes”
These notes are handed out on the day an accident occurred in the past as a way to keep alive the lessons learned from that accident.
- One-day training for trainers of four-round risk assessment drills
We hold this training together with affiliate companies to improve employees’ sensitivity to and promote higher self-awareness of dangers.

Environmental Impact Reductions

Environmental Policy

As a world-leading plant in the comprehensive use of C5 in integrated production from raw materials to finished products, and with the spirit of contributing to society as provided in Zeon’s CSR Policy and conserving the environment as provided in Zeon’s Environmental Philosophy, we define our environmental policy involving production activities for petrochemical products as follows.

1. From our company mission as a social institution, we build an Environmental Management System encompassing all of our business activities and are committed to conserving the environment on both a local and global scale.
2. We aim to achieve zero emissions and innovative energy savings, including through improvements to manufacturing processes using proprietary technologies and taking proactive environmental measures in new product development.
3. We comply with environment-related laws and regulations, independently set targets for policy management issues, and strive to continuously improve the environment through activities with full employee participation.
4. We pursue safe and reliable production through production innovations to be a plant that earns the enduring trust of the local community.

Scope of Environmental Management System

- (1) Name of registered organization: Mizushima Plant, Zeon Corporation
- (2) Address: 2767-1 Kojima Shionasu Aza Niihama, Kurashiki-shi, Okayama, Japan
- (3) Scope of registered activities: Manufacture of synthetic resins, specialty chemicals, chemical products, and synthetic rubbers
- (4) Affiliated companies located in-plant: Okayama Butadiene Co., Ltd. Mizushima Plant
[Activities: Manufacture of butadiene monomers]
- (5) Staff: All people who work at the plant, or work for the plant

Specific Initiatives

1. Reducing emissions of hazardous chemical substances

• We have achieved zero atmospheric emissions of butadiene since FY 2002 and continue to take steps to reduce our emissions of volatile organic compounds.

2. Reducing industrial waste

• Final landfill disposal target: 5 tons or less
 • We are reducing the amount of waste we generate, reusing beverage bottles, and recycling plastics as solid fuels.

3. Conserving resources and energy

• Process stabilization
 • Inspecting steam traps throughout the plant
 • Improving unsatisfactory areas

4. Reducing impacts on water quality

• Strengthened management of treatment conditions (installed measurement devices in the wastewater treatment system)

5. Environmental data

* "0" indicates less than 0.5 tons, and "0.0" indicates less than 0.005 tons

Mizushima Plant		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Hazardous substances	Butadiene consumption (tons)	130,154	110,704	141,100	138,029	123,109
	Butadiene emissions (tons)	0.0	0.0	0.0	0.0	0.0
Substances subject to the PRTR Act	Consumption (tons)	431,800	393,777	478,178	476,200	408,600
	Emissions (tons)	4.6	5.3	6.0	6.5	5.4
Industrial waste	Amount generated before compacting (tons)	56,270	59,253	70,584	69,824	47,980
	Amount generated after compacting (tons)	4,830	5,999	6,956	5,418	4,717
	Amount sent to landfills (tons)	5.4	1.3	6.5	3.5	1.7
Atmospheric emissions	CO ₂ emissions (tons)	197,855	182,800	211,420	235,360	201,700
	SOx emissions (tons)	2.7	1.2	1.4	1.1	2.2
	NOx emissions (tons)	66	47	54	54	68
	Soot emissions (tons)	0	0	0.0	0.0	0
	Fluorocarbon leaks (tons of CO ₂)	–	–	–	0.0	0.0
Water resource consumption (1,000 m ³) (industrial water + groundwater + waterworks)		2,351	2,665	2,713	2,510	2,487
Wastewater	Total wastewater discharge (1,000 m ³)	2,429	2,674	2,602	2,411	2,313
	COD emissions (tons)	13	17	20	15	12
	Total phosphorus discharge (tons)	0.7	0.6	0.5	0.4	0.5

	Total nitrogen discharge (tons)	15	17	12	12	12
Energy	Consumption (crude oil equivalent, kL)	73,148	67,850	77,517	87,860	77,626
	Unit consumption index (FY 1990 = 100)	46%	41%	40%	45%	37%
Production equivalent (tons)		705,400	714,800	840,400	834,400	880,300

Relationship with Employees

Policy

Facilitate effective transfer of technologies and skills

Specific Initiatives

- Education at the Monozukuri Training Center at Mizushima Plant for employees in their first to third years of employment

Relationship with the Local Community

Specific Initiatives

1. Contributing to the community through volunteering

- Beautification activities in the area surrounding the plant

2. Interactions with the local community

- Summer festival: Around 600 family members of employees and community residents come to the festival
- Participate in community events for making rice cake
- Participate in Responsible Care Council community dialogue events (twice/year)

3. Plant tours

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

- Okayama Prefectural Kurashiki Minami High School (30 11th-grade students)



Cleanup volunteer activities



Event for making rice cake



Plant tours