

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

Operations commenced 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
Makoto Watanabe

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 a commitment to contributing to society as provided for in Zeon’s CSR Policy, and to preventing accidents and disasters as provided for 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, and 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 that involve participation by all employees.
4. We pursue safe and reliable production through production innovations to create a workplace in which employees can work with peace of mind, and which 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

- 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 a commitment to contributing to society as provided for in Zeon's CSR Policy, and to preventing accidents and disasters as provided for in Zeon's Safety Philosophy, we define our environmental policy involving production activities for petrochemical products as follows.

1. Based on our company mission as a social institution, we build an Environmental Management System encompassing all of our business activities, and we are committed to conserving the environment both at the local level and on the 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 that involve participation by all employees.
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 City, Okayama Prefecture
- (3) Scope of registered activities : Manufacturing of synthetic resins, specialty chemicals, chemicals and synthetic rubbers
- (4) Affiliated companies located in-plant : Okayama Butadiene Co., Ltd. Mizushima Plant
Scope of activities: Manufacture of butadiene monomer
- (5) Staff : All people who work at or 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 0.05 tons

Mizushima Plant		FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Hazardous substances	Butadiene consumption (tons)	138,029	123,109	106,970	122,217	93,100
	Butadiene emissions (tons)	0.0	0.0	0.0	0.0	0.0
Substances subject to the PRTR Act	Consumption (tons)	476,200	408,600	428,684	485,100	389,200
	Emissions (tons)	6.5	5.4	4.4	4.4	3.8
Industrial waste	Amount generated before compacting (tons)	69,824	47,980	45,177	56,927	51,569

	Amount generated after compacting (tons)	5,418	4,717	5,869	5,974	6,743
	Amount sent to landfills (tons)	3.5	1.7	1.9	0.0	3.2
Atmospheric emissions	CO ₂ emissions (tons)	235,360	201,700	259,000	255,800	270,235
	SO _x emissions (tons)	1.1	2.2	0.1	0.4	3.8
	NO _x emissions (tons)	54	68	60	73	34
	Soot emissions (tons)	0.0	0.0	0.0	0.0	0.0
Water resource consumption (1,000 m ³) (industrial water + groundwater + waterworks)		2,510	2,487	2,250	2,629	2,461
Wastewater	Total wastewater discharge (1,000 m ³)	2,411	2,313	2,088	2,335	2,237
	COD emissions (tons)	15	12	13	12	13
	Total phosphorus discharge (tons)	0.4	0.5	0.5	0.5	0.6
	Total nitrogen discharge (tons)	12	12	12	9	8
Energy	Consumption (crude oil equivalent, kL)	87,860	77,626	96,576	95,830	102,181
	Unit consumption index (FY 1990 = 100)	45%	37%	46%	39%	50%
Production equivalent (tons)		834,400	880,300	907,200	1,052,001	874,435

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

Thanks to the support of the local community, the Mizushima Plant marked 50 years of operations in July 2019.

The plant has collaborated with local communities and contributed to the development of society and the region, and will continue to do so in the future.

Specific Initiatives

1. Contributing to the community through volunteering

- Beautification activities in the area surrounding the plant (10 people total)



Cleanup volunteer activities

2. Interactions with the local community

- Autumn Festival: Around 170 family members of employees and local residents attended the Festival
- Summer Festival: Around 550 family members of employees and local residents attended the festival
- Participate in community events including Bon dancing and making rice cakes
- Participate in Responsible Care Council community dialogue events
- Lecture at Kurashiki Technical High School



Walking for health

3. Plant tours

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

- Okayama Prefectural Kurashiki Technical High School
- Okayama Prefectural Mizushima Technical High School
- Okayama Prefectural Okayama Technical High School
- Okayama Prefectural Kurashiki Minami High School, etc.



Plant tours