

Kawasaki Plant

Introduction to Kawasaki Plant

[Establishment]

1959

[Main functions]

Production of synthetic rubbers and synthetic latex



Aerial view of the Kawasaki Plant

Plant Policy (from Plant Manager)

Our plant fulfills its role as a member of the community. We continue to participate in the regular cleanup of the “Tonomachi-Yako Route,” the bullet train route for this region as a usual practice. Also, we plan entertainment hand-made by our employees and invite local companies and members of the neighborhood association, hoping that they enjoy our hospitality.

We will aim to continue to be a plant that the local community can trust and work together with the local community as much as possible.



Kawasaki Plant Manager
Takafumi Kawanaka

Safety Initiatives

[Policy]

We aim to eradicate accidents and disasters based on participation by all workers with safety as the highest priority.

[Concrete efforts]

- Safety education through accident case study education and safety hands-on education, etc.
- Various safety activities on near misses, etc.

Efforts to Reduce Environmental Impact

[Policy]

We promote reduction of emissions of harmful substances and industrial waste and energy-saving, and strive to effectively use resources by cooperating with inter-industrial complex companies.

[Concrete efforts]

1. Prevention of global warming

We have achieved resource and energy saving by installing the latest gas engine type cogeneration system Units 5 and 6 with

high thermal efficiency and low NOx in fiscal 2014. The surplus power generated is stably supplied externally. In addition, we are developing processes that effectively use steam and waste heat, and continue to reduce environmental impact.

2. Reducing toxic chemical emissions

We introduced Butadiene and Acrylonitrile recovery equipment, and are reducing emissions. We also carried out equipment improvement to prevent Acrylic nitrile steam from the production equipment opening.

Our emissions of Butadiene and Acrylonitrile in fiscal 2015 were 2.0 tons and 4.9 tons respectively.

3. Reducing industrial waste

We are reducing industrial waste through waste separation and re-use of resources (recycling and heat recovery). As a result of our proactive efforts to reduce waste, the waste we sent to landfill in fiscal 2015 was less than 1 ton.

4. Reducing air pollution

We greatly reduced our emissions of Acrylonitrile through our efforts. We have started to develop technology to reduce emissions to one fifth of their current level by 2020.

5. Reducing water pollution

We are reducing nitrogen compounds in the wastewater inflow. We are making efforts to improve technology so that it can stably deal with fluctuations in load.

6. Environmental Data

| Kawasaki Plant | | FY2011 | FY2012 | FY2013 | FY2014 | FY2015 |
|--|---|--------|--------|--------|--------|--------|
| Toxic substances | Butadiene consumption (tons) | 23,054 | 22,841 | 20,372 | 23,534 | 21,758 |
| | Butadiene emissions (tons) | 2.6 | 2.7 | 2.4 | 2.6 | 2.0 |
| | Acrylonitrile consumption (tons) | 10,670 | 10,872 | 9,653 | 11,405 | 10,746 |
| | Acrylonitrile emissions (tons) | 12 | 13 | 11 | 11 | 5 |
| Substances subject to PRTR law | Consumption (tons) | 46,186 | 44,709 | 40,203 | 45,847 | 43,954 |
| | Amount emitted (tons) | 26 | 26 | 26 | 26.8 | 21.4 |
| Industrial waste | Amount generated (before volume reduction) (tons) | 47,718 | 50,878 | 48,039 | 52,900 | 44,380 |
| | Amount generated (after volume reduction) (tons) | 5,383 | 5,037 | 4,024 | 4,401 | 3,412 |
| | Amount sent to landfill (tons) | 0.4 | 0.9 | 0.0 | 0.0 | 0.0 |
| Atmospheric emissions | CO ₂ emissions (tons) | 27,609 | 27,968 | 20,917 | 25,778 | 23,443 |
| | SOx emissions (tons) | 0.1 | 0.1 | 0.2 | 0.1 | 0.3 |
| | NOx emissions (tons) | 8 | 8 | 7.4 | 5.7 | 5.6 |
| | Soot emissions (tons) | 0.6 | 0.8 | 0.8 | 0.6 | 0.5 |
| | Leakage of CFCs (tons of CO ₂) | — | — | — | — | 0.0 |
| Water resources (Industrial water + Ground water + Waterworks) consumption (1,000 m ³) | | 2,963 | 3,313 | 3,092 | 3,657 | 3,241 |
| Waste water | Total waste water discharge (1,000 m ³) | 1,793 | 1,904 | 2,031 | 2,185 | 2,265 |
| | COD emissions (tons) | 40 | 42 | 45 | 44 | 35 |

| | | | | | | |
|--------|--|--------|--------|--------|--------|--------|
| | Total phosphorus discharge (tons) | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 |
| | Total nitrogen discharge (tons) | 89 | 115 | 93 | 115 | 89 |
| Energy | Total consumption (crude oil equivalent, kL) | 16,220 | 16,552 | 14,406 | 14,700 | 13,355 |
| | Unit consumption index (1990 = 100) | 90% | 91% | 75% | 84% | 65% |
| | Production of PDR equivalent (tons) | 81,790 | 82,757 | 73,834 | 85,441 | 80,229 |

Quality Assurance Efforts

[Policy]

We aim to “Produce products with world No.1 quality and supply customers stably.”

[Concrete efforts]

- Improvements in process capability for product quality
- Advancement of quality assurance based on science
- Reduction of various types of waste such as losses and work load

Relationship with Employees

[Policy]

We help each employee develop the capabilities they need to perform their duties, and implement planned and continuous “development of independent human resources who can think and act on their own,” cultivating a spirit of cooperation between employees.

[Concrete efforts]

Based on the above policy, we consider the aims, contents and subjects of education and training, and choose the most effective form from group education such as the Monozukuri (Product Manufacturing) Training Center (for staff from their first to third years at the company), on-the-job training, off-the-job training and self-development assistance, etc.

Living Together with the Local Community

[Policy]

We place importance on living together with the local community, based on dialogue, and aim to be an open plant.

[Concrete efforts]

• Business reports and plant tours

We hold these once a year in order to promote dialogue with the people living around the plant and to deepen their understanding of our company and plant.



•Implementation of local dialogue

In order to help all local people understand our responsible care activities such as environmental improvement and safety, we implement the Japan Chemical Industry Association RC Committee, Kawasaki District Member Companies with nine companies including Zeon Corporation.

