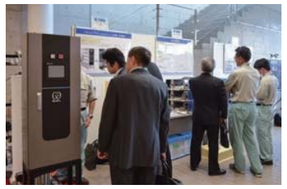
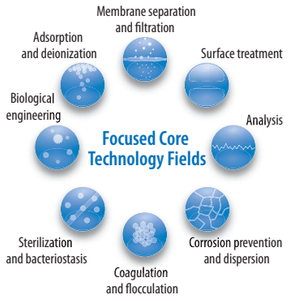
Foundation of R&D and Intellectual Property

The Kurita Group strives to be a Technology-Driven Company. Aiming for the realization of its corporate philosophy, the Group is working to develop technologies that will resolve the challenges faced by industry and society as a whole from the perspective of reducing environmental burden, recycling resources, and improving industrial productivity.

R&D Conference



R&D Workshop



R&D Staff

Approx. 200

R&D Activities under Medium-Term Management Plan CK-17

During the period of the CK-17 plan, the Kurita Group aims to develop technologies that will strengthen such core business fields as ultrapure water production, boiler and cooling water treatment, and wastewater reclamation. The Group is also working to further cultivate its core technology fields of analysis technologies and new materials development. The Kurita Group aims to raise its brand power in the water treatment market outside Japan and to expand its overseas business by holding world-leading technology in each field.

A business acquisition in Europe in 2015 added the European Water Treatment Chemicals Research Center of Kurita Europe GmbH to the Kurita Global Technology Center in Japan, making the Kurita Group's R&D structure a two-base system. Lively discussions took place when Kurita Europe gave presentations at the R&D Conference and R&D Workshop. In April 2017, Kurita established Kurita R&D Asia Pte. Ltd. in Singapore as a new company to conduct research and development. Singapore has numerous universities, research institutions, and corporate R&D centers involved in water and environmental technology. By establishing an R&D center here, Kurita will be able to obtain in a timely manner the latest technical information related to seawater desalination and wastewater reclamation and reuse, which will speed up technology development and lead to higher competitiveness of products and technologies.

Main R&D Results in the Fiscal Year Ended March 31, 2017

Water Treatment Chemicals Business

New chemicals and a water treatment control support system for power boilers

Kurita developed a highly safe film-forming corrosion inhibitor as an alternative to the conventional oxygen scavenger for medium- to high-pressure boilers, such as power boilers, which are increasing in Japan and abroad. It also developed a water treatment control support system to prevent trouble by detecting signs of boiler facility malfunction.

Solid cartridge-type cooling water treatment chemicals

Kurita developed solid cartridge-type water treatment chemicals that prevent the growth of Legionella bacteria and are effective for reducing the adhesion of dirt and inhibiting corrosion in small cooling towers over a long time just by placing the cartridge in the tower.

Dehydrating agent for tunnel construction

Kurita developed a dehydrating agent that reduces the total slurry treatment cost in the slurry shield method used in tunnel construction work by increasing the performance of slurry dehydration and the filtration rate.

Water Treatment Facilities Business

Standardized wastewater reclamation system

Kurita developed a space-saving, low-cost standardized wastewater reclamation system that is easy to design and install, as it consists mainly of membrane treatment units. Stable operation is achieved by combining Kurita's unique chemical treatment technologies.

Highly efficient treatment technology for high-concentration nitrogen wastewater

Kurita developed technology that is highly efficient at treating high-concentration nitrogen wastewater from methane fermentation. The technology is for facilities that conduct biogas power generation through methane fermentation of liquid waste from the food industry.

Reducing the cost of ultra-pure water production

By improving the performance of functional materials that make up the ultrapure water production system, revising the purifying method while still maintaining quality, Kurita was able to achieve cost reductions throughout the entire production system as well as maintain the water standards required by a major semiconductor manufacturing company.

Utilization of Intellectual Property

The Kurita Group strives to secure and properly manage intellectual property with the aim of increasing the competitiveness of its core products and technologies in Japan and overseas.

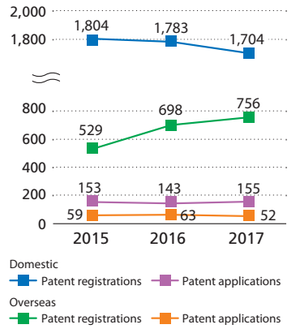
In the fiscal year ended March 31, 2017, the number of patent applications to secure the rights on new products and technologies was maintained while Kurita narrowed down its patents held in Japan to those that are useful in business. Outside Japan, the number of patents held by the Group increased substantially due to the focus placed on securing intellectual property rights abroad with the expansion of the Kurita Group's overseas business. The Group also strove to establish a centralized global intellectual property system and strengthened its centralized management of intellectual property activities to cope with global business expansion, such as establishing a policy on the handling of employee inventions at Group companies, including those overseas, and development of a system for dealing with patent litigation risk outside Japan.

In addition to these initiatives, Kurita worked to increase Group employees' awareness of intellectual property, including by conducting e-learning on intellectual property rights and starting intellectual property training for the employees of overseas Group companies in China and Europe, in order to reduce the risk of infringement on other company's intellectual property rights.

Going forward, Kurita will aim to secure rights for future core technologies together with the strengthening of its overseas business and solutions business. At the same time, it will strive to reduce intellectual property risk in its global business by expanding intellectual property training for the employees of overseas Group companies.

Number of Patent Applications and Patents Held

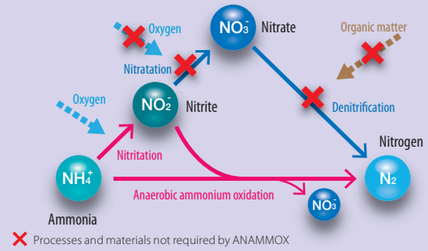
For the years ended March 31



Kurita Launches Japan's First Continuous One-Step ANAMMOX Process

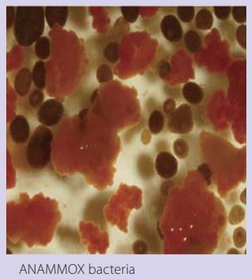
The treatment of wastewater containing nitrogen compounds consists of two steps. The first step is nitrification, in which ammonia (NH_4^+) as a nitrogen component in wastewater is oxidized into nitrite (NO_2^-) and then into nitrate (NO_3^-). The second step is denitrification, which converts nitrate into nitrogen gas (N_2). The cost of these steps used to be a problem, as the nitrification process requires a large amount of electricity to feed a substantial quantity of oxygen to stimulate growth of nitrifying bacteria, and because the denitrification process generates surplus sludge as waste. ANAMMOX bacteria that can convert ammonia and nitrite into nitrogen gas innovate this wastewater treatment process. In March 2017, Kurita launched Japan's first continuous one-step ANAMMOX process, which has a more efficient and stable reaction than the conventional process and can meet a wide range of needs, including utilization for the treatment of large-amount flow wastewater with low nitrogen concentration. Kurita aims to promote the sale of this process as a system that will support energy recovery and the recycling of food waste. This includes its application for the dehydration and filtration process of wet-type methane fermentation in biogas power generation, which is anticipated to expand on the back of such factors as the Feed-in Tariff Program for renewable energy.

Reaction Path in Denitrification Using ANAMMOX Bacteria



✕ Processes and materials not required by ANAMMOX

ANAMMOX reactor



ANAMMOX bacteria