Research and Development/Intellectual Property

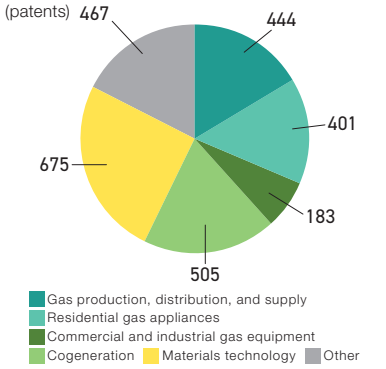
Principle and Outline

The Daigas Group consider research and development to be one of the most important growth strategies for the Group. In addition to ensuring and improving safety, we are conducting research and development aimed at improving operational efficiency and reducing equipment-related costs through the use of digital technology, improving customer convenience, and enhancing the sophistication of existing services. We are also engaged in research and development for the creation of new businesses and research and development that contributes to the realization of carbon neutrality.

Furthermore, we regard intellectual property rights as an important management resource and are actively working to secure and utilize the rights in conjunction with our business and technology development strategies. We are also actively working to promote comprehensive collaboration with universities to create innovation through industry-academia collaboration, and integrate and use the Group's proprietary technologies with those of external parties. By doing so, we are actively promoting "open innovation" activities aimed at accelerating and streamlining development and creating new technologies and products.

■ Patent Portfolio by Business Type (Group)

Fiscal year ended March 31,2026 **2,675**patents



Reward System for Inventors

Osaka Gas has an invention achievement reward system in which inventors who have made significant contributions to its business are rewarded in order to motivate employees to invent and encourage intellectual property activities.

We disclose the results of the review of achievement rewards on the internal portal site, and respond to inquiries and opinions from employees regarding the results of the review, in an effort to operate the system in a fair and transparent manner.

Comprehensive Collaboration with Universities

Osaka Gas believes that it is important to innovate through industry-academia collaboration, and is therefore undertaking comprehensive collaborations with Kyoto University and the Research Center for Advanced Science and Technology, the University of Tokyo.

In March 2022, we concluded an organization-based[1] comprehensive collaboration agreement with Kyoto University aimed at building broader collaboration toward achieving carbon neutrality and training young researchers in the medium to long term. In the following year, we established an Industry-Academia Collaborative Research Department on Kyoto University's Katsura Campus as a hub for industry-academia collaborative research, which does basic research in fields such as methanation technology.

We have concluded a comprehensive collaboration agreement with the Research Center for Advanced Science and Technology, the University of Tokyo,[2] with the aim of solving social issues by creating research and development themes that we could not achieve alone, and by nurturing researchers and building networks through exchanges between the two parties.

1 The purpose is to promote large-scale collaborative research. It is not limited to specific research fields or researchers, but rather aims to explore new themes of future social value and make new innovations from a variety of research fields, from the humanities and social sciences to the natural sciences.

2 This is the newest attached research institute at the University of Tokyo. Since it was established in 1987, it has been conducting interdisciplinary research activities that transcend the boundaries between the humanities and sciences under six categories: materials, environment and energy, information, biomedical chemistry, barrier-free access, and social sciences.

Initiatives for Commercialization

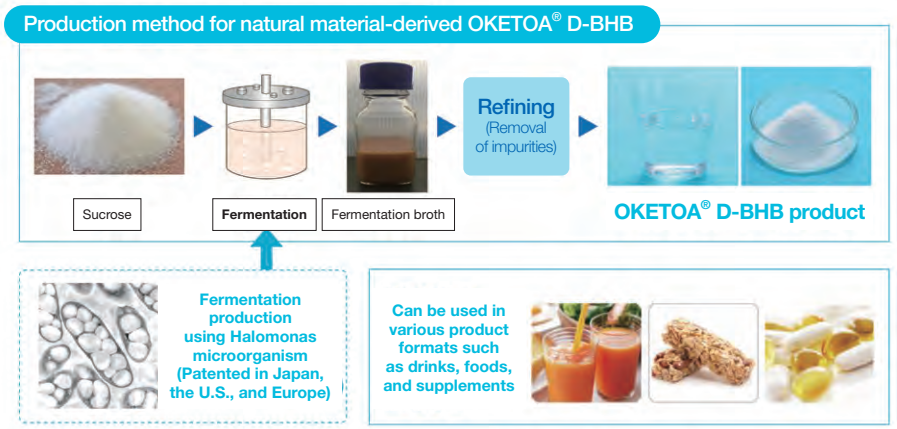
Promoting the commercialization of natural material-derived ketone body OKETOA® by utilizing it for health foods, etc.

Taking advantage of its proprietary fermentation technology cultivated through biogas manufacturing and development and other businesses, Osaka Gas succeeded in mass-producing ketone body D-β-hydroxybutyric acid (D-BHB) by fermentation for the first time in the world. We worked on the manufacturing and achieved the commercialization of natural material-derived ketone body OKETOA®.

Ketone bodies are produced in the body as an energy source when sugar, utilized as an energy source in the body, becomes depleted (when carbohydrate intake is restricted).

Recently, D-BHB has been shown to be an alternative energy source to sugar and to elicit various physiological effects, and it is attracting attention around the world as a raw material for supplements, etc. We are promoting the use of D-BHB for a wide range of products, including cosmetic raw materials, health foods, and supplements.

■ Production flow of natural material-derived ketone body OKETOA®



Promoting the commercialization of antimicrobial and antivirus agent TioClean®

By introducing additives to the Company's proprietary photocatalysts that take advantage of technology developed for solar power generation, we have succeeded in the development of antimicrobial and antivirus agent TioClean®, which demonstrate high antimicrobial and antivirus properties and are easy to use.

There is a demand for antimicrobial and antivirus agents that are highly transparent, well adhere to the base material, and demonstrate antimicrobial and antivirus properties in a wide range of environments. TioClean® offers all of these properties.

We will roll it out to be used for furniture and other home equipment and various equipment for public, medical, nursing care, and other facilities, where there is demand for antimicrobial and antivirus properties, as well as for medical equipment and hygiene products.