



April 15, 2024

**Successful Demonstration Test of Hydrogen Production from Ammonia
for Fuel Cell Vehicles (FCVs)**

Taiyo Nippon Sanso Corporation (Headquarters: Shinagawa-ku, Tokyo; President: Kenji Nagata; hereinafter “TNSC”), a Japanese industrial gas business company in the Nippon Sanso Holdings Group, is to announce its successful demonstration of production of hydrogen from ammonia that meets the quality specifications (ISO 14687:2019 Grade D) required for hydrogen fuel for fuel cell vehicles (FCVs).



Exterior view of the test equipment used to demonstrate the production of hydrogen from ammonia that meets the fuel quality for FCVs

Development history and future plan

While the Japanese government is working to increase the supply and use of hydrogen, etc.¹ to achieve carbon neutrality by 2050, TNSC is working for the goal of reducing GHG emissions through the development of environmentally friendly products.

While participating in the research project “Basic Technology for Hydrogen Station Utilizing Ammonia” in the Cross-ministerial Strategic Innovation Promotion Program (SIP): “Energy Carrier” led by the Council for Science, Technology and Innovation of the Cabinet Office from 2014 to 2018, TNSC has established a technology to produce hydrogen gas with less than 100 ppm nitrogen and less than 1 ppm methane by purifying a mixed gas of 25% nitrogen, 0.1% methane, and 74.9% hydrogen.

In the SIP initiative, we used a mixture of gases with few impurities that is made by simulating ammonia cracking gas. Based on the knowledge gained in the hydrogen gas purification, TNSC successfully demonstrated that the produced hydrogen can meet the standards required for hydrogen fuel for FCVs (ISO 14687:2019 Grade D) through a hydrogen production test where a combination of an ammonia cracking furnace and a hydrogen purification device that is developed by the company was used. This allowed us to plan development of equipment to produce hydrogen from ammonia. We will start working on the commercialization of equipment that produce hydrogen gas from ammonia.

1: In addition to hydrogen, its compounds (i.e., ammonia, synthetic methane, and synthetic fuels) are included.

【Company Overview】

Taiyo Nippon Sanso Corporation

Business description: Manufacture and sale of various industrial gases such as oxygen, nitrogen, argon, LP gas, gas for medical uses, and specialty gases, manufacture and sale of welding equipment and materials, gas-related devices, and, air separation equipment, assembly, processing, inspection of electrical components, and equipment maintenance

Established: October 30, 1910

Incorporated: February 4, 2020

Capital: 1.5 billion yen

Shareholder: Nippon Sanso Holdings Corporation (Investment ratio: 100%)

Revenue: 420.4 billion yen*

*Note: This figure shows the revenue of Japan for Nippon Sanso Holdings Corporation in FYE2023

Taiyo Nippon Sanso Corporation

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