



August 4, 2023

**Air Separation Unit and Rare Gas Production Unit to be installed at Kimitsu Sanso Center
to Ensure a Stable Supply**

Taiyo Nippon Sanso Corporation (President: Kenji Nagata; hereinafter "TNSC"), a Japanese industrial gas company of Nippon Sanso Holdings Group, and Nippon Steel Corporation (President: Eiji Hashimoto; hereinafter "Nippon Steel") have decided to install an energy-saving cutting-edge air separation unit at Kimitsu Sanso Center Co., Ltd. (Kimitsu City, Chiba Prefecture; President: Masahiro Uehara; hereinafter "Kimitsu SC") established as a joint venture of TNSC and Nippon Steel.

TNSC has also decided to install units to produce rare gases (neon, krypton, and xenon), for which Japan relies on imports for most of its demand, thereby boosting domestic production.

1. Background

Kimitsu SC was established in September 2022 to streamline the production of various industrial gases on the premise of the East Nippon Works (Kimitsu area) of Nippon Steel.

To ensure a stable supply of oxygen, nitrogen, and argon gas to East Japan Works (Kimitsu area) of Nippon Steel, as well as to supply high-quality products to TNSC, TNSC and Nippon Steel have decided to install an energy-saving, cutting-edge air separation unit at Kimitsu SC.

TNSC will also install a neon purification system and a krypton and xenon production system.

Rare gases (krypton and xenon) are harvested as byproducts during the manufacturing of oxygen, nitrogen, and argon in large-scale air separation units. For this reason, Japan, where there are very few large-scale air separation units, relies on imports for the majority of its rare gases. Rare gases are used primarily in fields such as electronics, lighting, outer space, and energy conservation. Although demand has been increasing globally in recent years, the reality is that supply is becoming tight.

The Japanese government has identified these rare gases as crucial for ensuring a stable supply in the semiconductor manufacturing process and has approved TNSC's "Supply Security Plan" as eligible for support by the Ministry of Economy, Trade and Industry under the Economic Security Promotion Act.

Although TNSC manufactures rare gases at the Oita Plant of Kyushu Sanso Center Corporation ("Kyushu SC Oita"), a group company, and TNSC shall establish a framework for a stable supply of rare gases to customers by enhancing domestic production.

2. Overview of the air separation unit to be installed at Kimitsu SC

Production capacity:	Oxygen gas	60,000 Nm ³ /h
	Nitrogen gas	120,000 Nm ³ /h
	Liquefied argon	2,100 Nm ³ /h

Scheduled start of operation: End of June 2025

3. Overview of the rare gas unit to be installed by TNSC

1) Installation location: Kimitsu SC

2) Neon purification system

Production capacity: 27 million liters/yr

Scheduled start of operation: March 2026

3) Krypton and xenon manufacturing system

Production capacity: 1 million liters/yr of krypton and 125 thousand liters/yr of xenon

*Kimitsu SC manufactures krypton/xenon mixed gas (intermediate product), and Kyushu SC Oita purifies it for the final product. The combined production capacity of Kyushu SC Oita, and Kimitsu SC will be 2 million liters/yr of krypton and 250 thousand liters/yr of xenon.

Scheduled start of operation: August 2025

4. Kimitsu Sanso Center Co., Ltd.

Location: 1 Kimitsu, Kimitsu City, Chiba Prefecture
(on the premises of Nippon Steel Corporation East Japan Works (Kimitsu area))

Established: September 1, 2022

Capital: 50 million yen

Investment ratio: TNSC 50%, Nippon Steel 50%

[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