

**New Plant Opened for Collection and Recycling of Developer
Used in Semiconductor Manufacturing—Mass Production Planned to Begin in FY2025**

SN Tech Corporation, a joint venture between Nagase & Co., Ltd. (Chiyoda-ku, Tokyo; Representative Director, President and CEO: Hiroyuki Ueshima), Nagase ChemteX (Nishi-ku, Osaka; President and CEO: Satoru Fujii) and SACHEM, Inc. (President and CEO: Rosemary Hoffman), has opened a new plant, the SN Tech Higashiosaka 2nd Plant, in Higashiosaka to collect and recycle the high-purity developer used in the manufacture of semiconductors(*1). This project, which collects and recycles the high-purity developer used in the manufacture of semiconductors (tetramethylammonium hydroxide: TMAH), is the first case in Japan of collecting, recycling, and selling used TMAH. Mass production is planned to begin during FY2025.

As part of the growth strategy in its Medium-Term Management Plan ACE 2.0, Nagase & Co. has specified the four quadrants of Foundation, Focus, Development, and Improvement, and is carrying out its businesses along the axes of the trading, manufacturing, and R&D functions. The establishment of this new plant is an initiative for manufacturing functions in the semiconductor field, part of the Focus quadrant.

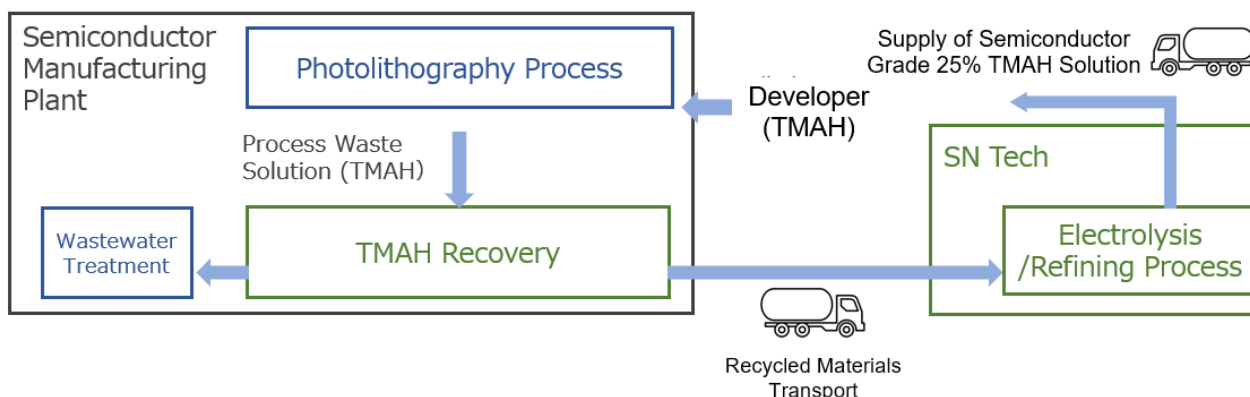
Background of Initiative

The manufacturing process for semiconductor chips is divided into the front-end process in which circuits are created on silicon wafers, and the back-end process in which silicon wafers with circuits are then assembled into a semiconductor chip. Photolithography, part of the front-end process, requires extremely high-purity developer (TMAH) for creating circuits. Since recycling TMAH requires electrolysis and refining technology, it was considered difficult to reuse it by collecting and recycling it, creating issues for the semiconductor manufacturing industry regarding its environmental burden and profitability. SN Tech has been collecting and recycling the TMAH used in the manufacture of LCD panels since 2008, and is applying that electrolysis/refining technology and knowhow for the reuse of TMAH.

Regarding Operations of the New Plant

The new plant has electrolysis and refining facilities to manufacture and purify TMAH, making it possible to recycle raw material collected from semiconductor plants into TMAH for use as semiconductor developer. Mass production is planned to begin during FY2025. With this project enabling the reuse and stable procurement of TMAH and water in semiconductor manufacturing plants, as well as reducing the energy used, it should lead to improved profitability in the semiconductor industry, where there has been increasingly aggressive cost competitiveness, and allow for the creation of sustainable, environmentally conscious business models, a pressing need for businesses around the world. The goal is to expand not just within Japan, but overseas as well, leading to further expansion of semiconductor-related businesses.

By using materials to solve production challenges, the NAGASE Group will contribute to bringing about a sustainable world where people live with peace of mind.



Overview of SN Tech Higashiosaka 2nd Plant

Location: Higashiosaka, Osaka Prefecture

Site Area: 2,603 m³

Facilities: TMAH manufacturing facilities, TMAH refining facilities

Manufactured Products: High-purity TMAH, Green TMAH (recycled TMAH)

*1: November 27, 2023 press release: [Commercialization of Collection and Recycling of Developer Used in Semiconductor Manufacturing](#)

■Nagase & Co. Profile

- Company Name: Nagase & Co., Ltd.
- Head Office: Chiyoda-ku, Tokyo
- Representative: Representative Director, President and CEO Hiroyuki Ueshima
- Business Overview: Import/export and domestic sales of chemicals, plastics, electronics materials, cosmetics and health foods
- URL: <https://www.nagase.co.jp/>

■Nagase ChemteX Profile

- Company Name : Nagase ChemteX Corporation
- Head Office: Nishi-ku, Osaka
- Representative: President and CEO Satoru Fujii
- Business Overview: Production and sale of high-performance resins including denatured epoxy resins, photolithography materials, epichlorohydrin derivatives, acrylic polymers, conductive coating materials, disinfectants and antimicrobial agents
- URL: <https://www.nagasechemtex.co.jp/>

■SACHEM, Inc. Profile

- Company Name: SACHEM, Inc.
- Representative: President and CEO Rosemary Hoffman
- Business Overview: Manufacture of high-purity chemicals for semiconductors
- URL: <https://www.sacheminc.com/>



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