

April 18, 2024

Nagase & Co., Ltd.

Nagase ChemteX Corporation

Nagase Viita Co., Ltd.

Marine Biodegradability Confirmed for Newly Developed Grade of Bio-based Super Absorbent Polymer with High Biomass Content

Nagase & Co., Ltd. (Head Office: Chiyoda-ku, Tokyo; Representative Director, President and CEO: Hiroyuki Ueshima), as part of the growth strategy in its Medium-Term Management Plan ACE 2.0, 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. Nagase & Co., along with the NAGASE Group's core manufacturing company Nagase ChemteX Corporation (Head Office: Nishi-ku, Osaka; President and CEO: Satoru Fujii) and Nagase Viita Co., Ltd. (Head Office: Kita-ku, Okayama; Representative Director: Naoki Yasuba), have succeeded in developing a new grade of super-absorbent polymer (SAP) with a high biomass content, and testing by a third-party organization (ASTM D6691) has confirmed it has the required biodegradability to be certified as marine biodegradable (degrading by 90% or more after 180 days in the ocean). With the goal of bringing it to the market within FY2026, Nagase ChemteX is currently establishing techniques for mass production and building a system for production.

SAPs are polymers with high absorbability, and are used in a wide variety of fields, from sanitary products such as paper diapers and pads, to being used for agricultural and greening purposes. Many existing SAPs are petroleum based and non-biodegradable, making their large environmental burden an issue. In response, research and development was carried out on biodegradable SAPs with a low environmental burden made from natural materials, but they did not have sufficient absorbability, and were considered inviable as final products. The NAGASE Group combined the enzyme technologies of Nagase Viita and the resin manufacturing techniques of Nagase ChemteX, and in February 2023 successfully created an SAP with maximized absorbability while increasing the percentage of biomass content, using starch as the primary ingredient*.

Due to the new grade of SAP developed being marine biodegradable, even if it is washed out to sea via rivers after being used for soil water retention for greening or agricultural purposes, the amount remaining as plastic waste will be reduced. By using it in products for which becoming marine microplastics is an issue, it will be possible to contribute to more environmentally friendly manufacturing. With the expansion

of ESG investing and growing awareness of the SDGs, as well as changes in consumer trends (towards safety, health consciousness, and natural products), this new SAP is expected to be sold to local governments and companies focusing on developing environmentally-friendly products.

Using the knowledge of chemistry and biotechnology built up over its approximately 190 years of history, the NAGASE Group will respond to needs for switching organic synthesis processes to biological processes, as well as applying its trading, manufacturing, and R&D functions towards proposing solutions for the creation of a new sustainable marketplace. As “a business that solves manufacturing issues through materials,” the NAGASE Group will contribute to a sustainable world where people live with peace of mind.

*[Bio-based Super Absorbent Polymer with High Biomass Content Successfully Developed \(nagase.co.jp\)](https://www.nagase.co.jp/)

■Nagase & Co. Profile

- **Company Name:** Nagase & Co., Ltd.
- **Head Office:** Chiyoda-ku, Tokyo
- **Representative:** Representative Director, President and CEO Hiroyuki Ueshima
- **Business Summary:** 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 Summary:** 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://group.nagase.com/nagasechemtex/>

■Nagase Viita Profile

- **Company Name:** Nagase Viita Co., Ltd. (changed from Hayashibara Co., Ltd. on April 1, 2024)
- **Head Office:** Kita-ku, Okayama
- **Representative:** Representative Director Naoki Yasuba
- **Business Summary:** Development, manufacturing and sales of food ingredients, pharmaceutical ingredients, cosmetic ingredients, health food ingredients, functional dyes, enzymes and phospholipids
- URL: <https://group.nagase.com/viita/>

◆ **Inquiries**

<Inquiries Regarding Products Developed>

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Nagase ChemteX Corporation

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