

Segment Information

CHEMICALS



Tokuyama's Chemicals segment handles basic chemicals used as raw materials for an array of products that are essential for people's livelihoods. Among these are soda ash, which Tokuyama has been producing since its founding in 1918, and caustic soda, a material which is said to be "essential for the manufacture of products in factories." These and other chlorine derivatives are used in a very wide range of applications and are essential for all kinds of industries. The caustic soda business also plays an additional role in Tokuyama's earnings platform, as its manufacturing process generates chlorine and hydrogen that are used in processes for producing the Company's polycrystalline silicon. In addition, Yamaguchi Liquid Hydrogen Corporation, a joint venture for liquid hydrogen production, commenced operations in 2013. Through these operations, the Company's hydrogen is also used for rocket fuel at the Tanegashima Space Center of Japan Aerospace Exploration Agency (JAXA). In this way, the segment is contributing to the development of space exploration.

With the goal to continue ensuring that Tokuyama is the preferred choice of customers, the Chemicals segment oversees three business units and Group companies while working to provide a stable supply of products and services that meet the expectations and needs of customers in a timely manner.

Business Unit	Major Products
Soda Ash and Calcium Chloride	Soda ash, Calcium chloride and Sodium silicate
Chlor-Alkali and Vinyl Chloride	Caustic soda, Vinyl chloride monomer (VCM), Propylene oxide and Chlorinated solvents
New Organic Chemicals	Isopropyl alcohol (IPA)
Group Companies	Soda ash and Calcium chloride [Tokuyama Soda Trading Co., Ltd.] Polyvinyl chloride (PVC) [Shin Dai-ichi Vinyl Corp.]

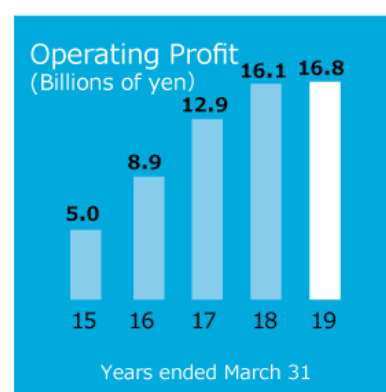
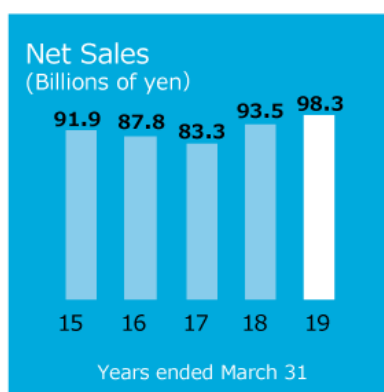
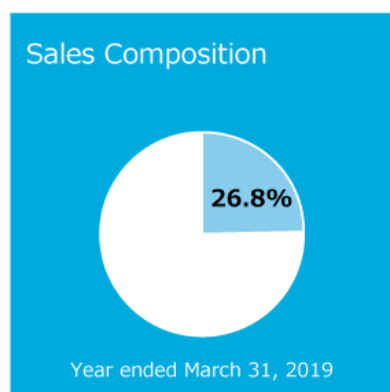
Operating Results for the Fiscal Year ended March 31, 2019

With regard to caustic soda, the revision of selling prices was progressed. As a result, its operating profit increased greatly.

Sales volume of vinyl chloride resin was steady. Meanwhile, manufacturing costs increased due to a rise in raw material prices such as domestic naphtha. As a result, its operating profit decreased.

Calcium chloride sales volume decreased and operating profit was down due to the effects of a warm winter.

As a result of the above, segment net sales increased 5.2% compared with the previous fiscal year, to ¥98,380 million and operating profit increased 4.2% to ¥16,850 million. The segment reported higher earnings on higher sales.



Strategies Going Forward

Tokuyama will contribute to the development of customers' businesses and the creation of a healthy and safe society by delivering high-quality, cost-competitive basic chemical materials and services that properly and promptly reflect customers' needs. At the same time, we will help to ensure the Company' stable and continuous earnings growth, all through our activities as the core business of the Group. Guided by this basic policy, we will push forward the following priority measures.

■ Soda Ash and Calcium Chloride Business

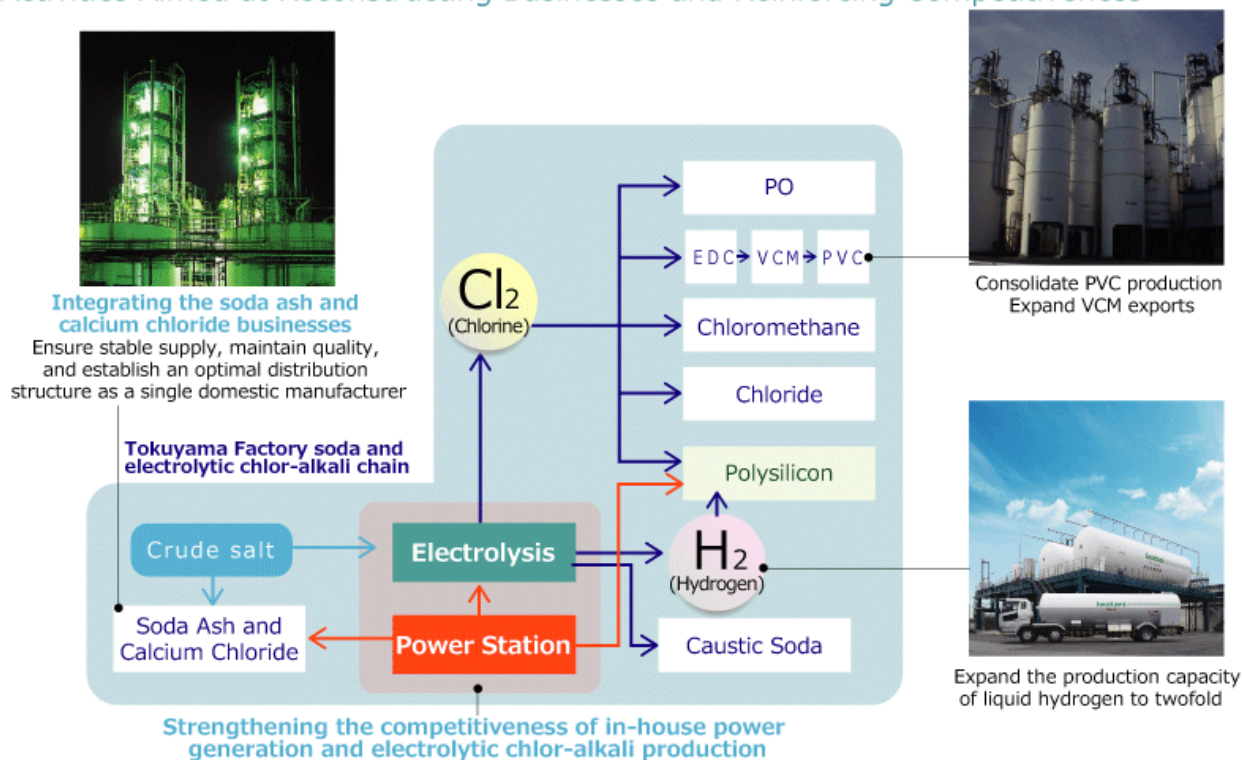
We will ensure the stable supply of products while maintaining quality as a sole domestic manufacturer.

■ Chlor-Alkali and Vinyl Chloride Business

From a manufacturing cost competitiveness perspective, we will work to secure a leading position by engaging in thoroughgoing cost reduction activities while further enhancing our high technological skills and improving our manufacturing process capabilities.

Moreover, we will strengthen our caustic soda and vinyl chloride monomer (VCM) export structure and systems while maintaining plant operations at full capacity.

Activities Aimed at Reconstructing Businesses and Reinforcing Competitiveness



SPECIALTY PRODUCTS



The Specialty Products segment offers products for a wide range of fields including energy, electronics and the environment. Our high-purity polycrystalline silicon is used for semiconductors and solar cells. Tokuyama is one of the leading companies in the world's polycrystalline silicon market. Fumed silica, which is produced from a by-product of polycrystalline silicon manufacture, is used for silicone rubber, polishing material for semiconductors manufacturing, copier toner and other applications. Aluminum nitride, which boasts excellent heat dissipation properties, is used for semiconductor production equipment and energy-saving applications such as inverters and LEDs. Our high-purity chemicals for electronics manufacturing are used chiefly for production of semiconductors and LCD panels.

The Specialty Products segment will continue to build on its advanced chemical technologies such as high purification, powder control and others, to create unique products that are useful to society.

Business Unit	Major Products
Electronic Materials	High-purity Polycrystalline silicon
Fumed Silica	Fumed silica and Tetrachlorosilane
Thermal Management Material	Aluminum nitride
IC Chemicals	High-purity chemicals for electronics manufacturing and photoresist developer
Cleaning System	Methylene chloride for metal cleaning
Group Companies	Fumed silica [Tokuyama Chemicals (Zhejiang) Co., Ltd.] Aluminum nitride substrate [Tokuyama-Dowa Power Materials Co., Ltd.] High-purity chemicals for electronics manufacturing [Taiwan Tokuyama Corporation]

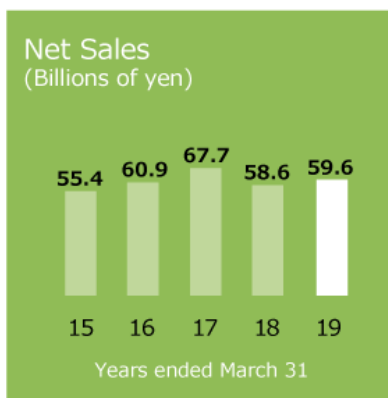
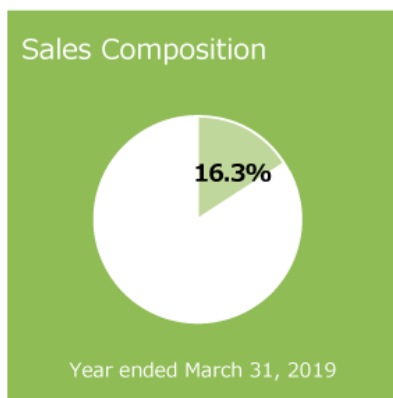
Operating Results for the Fiscal Year ended March 31, 2019

Sales volume of semiconductor-grade polycrystalline silicon was steady. Meanwhile, manufacturing costs increased due to an upturn in fuel and raw material costs. As a result, its operating profit decreased.

With regard to high-purity chemicals for electronics manufacturing, sales volume was steady. Meanwhile, manufacturing costs increased due to a rise in raw material prices such as domestic naphtha. As a result, its operating profit decreased.

With regard to thermal management material, sales volume in such applications used for semiconductor manufacturing equipment increased and the business did well.

As a result of the above, segment net sales increased 1.7% compared with the previous fiscal year, to ¥59,668 million and operating profit decreased 9.7% to ¥9,934 million. The segment reported lower earnings on higher sales.



Strategies Going Forward

We will work to expand our business and earnings by supporting those industries that enrich people's lives through the provision of providing high-performance materials in the telecommunications and electronics, environment and energy, and other fields while at the same time putting forward next-generation product proposals. Guided by this basic policy, we will push forward the following priority measures.

■ Semiconductor-grade Polycrystalline Silicon Business

We will accurately grasp customers' product quality needs encompassing their most recent requirements; achieve world-leading quality while minimizing costs.

■ Fumed Silica Business

In addition to upgrading and expanding highly functional products as well as CMP- and silicone-related products, we will reduce production costs and promote high added value at Tokuyama Chemicals (Zhejiang) Co., Ltd.

■ IC Chemicals Business

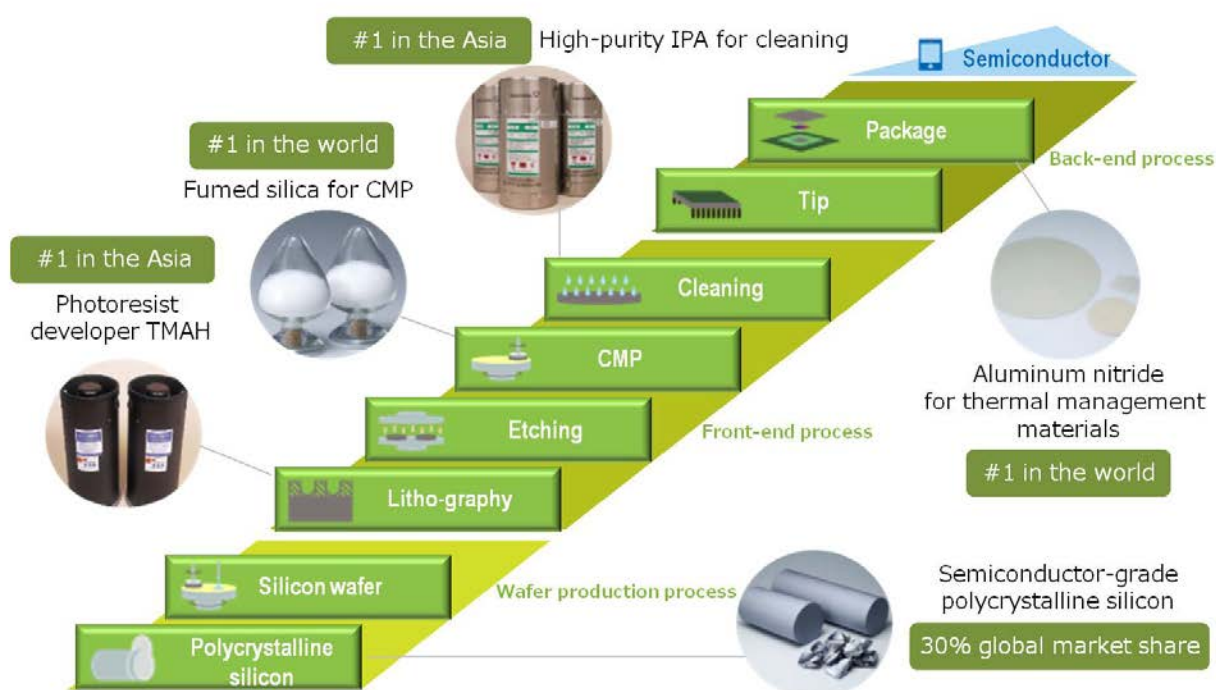
In addition to expanding sales and improving the quality of advanced semiconductor-grade products, we will work to boost production capacity in Japan, Taiwan, and China while establishing a supply structure and systems that address demand in the Asia region.

■ Thermal Management Material Business

We will increase the annual production capacity of high-purity aluminum nitride powder from 600 tonnes to 840 tonnes in April 2020 and establish a stable supply structure and systems.

We will promote efforts aimed at expanding our lineup of boron nitride, aluminum nitride filler, and other products.

Tokuyama's Semiconductor-Related Products that Underpin Advances in ICT



CEMENT



Tokuyama launched its cement business in 1938 out of a desire to efficiently make use of by-products produced at the Tokuyama Factory, an environmental approach that was ahead of its time in Japan. The segment produces cement and such related products as cement-type soil solidifiers at the Nanyo Plant of the Tokuyama Factory. These products are used for ready-mixed concrete and secondary concrete items, which in turn are used to help build infrastructure essential for people's lives, including residences, buildings, structures which support essential utilities, and transportation facilities such as ports, bridges, and roads.

In the cement production process, we accept a large volume of waste matter, including waste plastic and household garbage incineration ash from outside the Company as well as inside the Company, and utilize it as raw materials or fuel sources. In this way, the segment is promoting a recycling approach that is responsive to the needs of society, thereby helping promote a recycling-oriented society that effectively makes use of resources as much as possible.

Tokuyama Mtech Corporation manufactures and sells various types of building materials products including cement- and mortar-type products. Moreover, the Cement segment strives to develop products that can create new business possibilities by employing the technologies it has developed in the cement and building material fields. For example, steps are being taken to roll out Fresco Graph and other cutting-edge techniques that incorporate 3-D modeling technologies using Shikkui Lemarge interior design materials and other classic style fresco painting plaster techniques.

Business Unit	Major Products and Services
Cement	Cement, Ready-mixed concrete and Cement-type soil solidifier
Recycling and Environment	Resource recycling business
Group Companies	Cement and Ready-mixed concrete [Hiroshima Ready Mixed Concrete Co., Ltd and Tokuyama Tsusho Trading Co., Ltd., etc.]

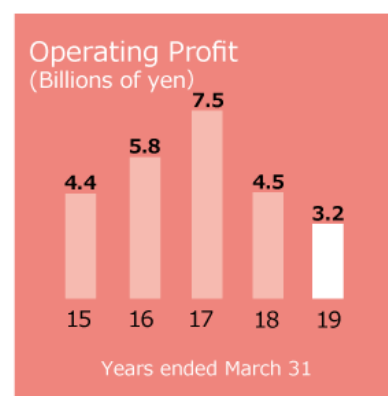
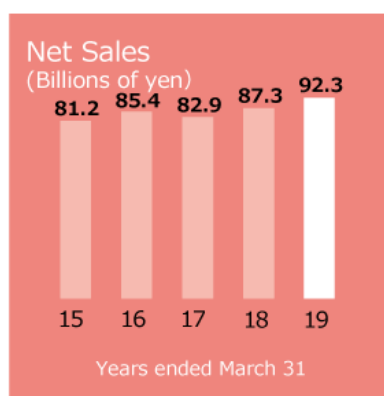
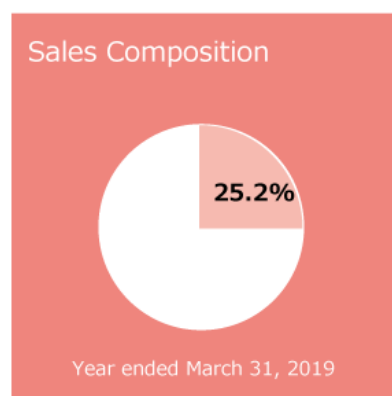
Operating Results for the Fiscal Year ended March 31, 2019

With regard to cement, domestic sales volume was weak and manufacturing costs increased due to a rise in raw material prices such as coal. As a result, its operating profit decreased.

In the resource recycling business, its business result was almost same as the previous fiscal year.

Consolidated subsidiary net sales increased. This mainly reflected the robust shipping trends of cement-related products.

As a result of the above, segment net sales increased 5.7% compared with the previous fiscal year, to ¥92,366 million and operating profit decreased 29.9% to ¥3,204 million. The segment reported lower earnings on higher sales.



Strategies Going Forward

We will work to reduce environment impact and help realize a sustainable society by ensuring the supply of high-quality basic construction materials including cement, contributing to the creation of a strong and rich nation, and promoting the treatment and recycling of certain waste difficult to dispose by utilizing chemical technologies. Guided by this basic policy, we will push forward the following priority measures.

■ Cement Business

Tokuyama will improve production efficiency as well as unit consumption and reduce costs focusing mainly on efforts to increase the use/intake of waste while improving energy efficiency.

We will foster the building materials business focusing mainly on infrastructure maintenance and reinforcement activities into the next earnings pillar.

■ Recycling and Environment Business

We will ensure the stable treatment of waste generated within the Company and assume responsibility for the Group's competitiveness while rolling out new environmental businesses using proprietary technologies.

Expand Cement Clinker Exports



Clinker ship loader (Tokuyama Factory)



Tokuyama Nouvelle Calédonie S.A.

LIFE & AMENITY



The Life & Amenity Division consists of Group companies that handle such wide-ranging products as polyolefin films, medical diagnosis systems, dental materials, ion exchange membranes and plastic window sashes. The Division is also in charge of the Tokuyama's Bulk pharmaceutical ingredients / intermediates (MA) business, Plastic lens-related materials for glasses (TS) business and Microporous film (NF) business.

MA business and TS business, utilizing our organic synthetic technology to advantage, we are expanding this business with eyeglass lens materials, active pharmaceutical ingredients for generic pharmaceuticals, and intermediates as our main products. NF business, we manufacture and sell air-permeable films (microporous films) that repel water but allow air and moisture to penetrate.

Shanghai Tokuyama Plastics Co., Ltd., one of the Group companies we are responsible for, manufactures and sells air-permeable films used for disposable diapers.

Business Unit	Major Products
Bulk pharmaceutical ingredients / intermediates (MA)	Bulk pharmaceutical ingredients/intermediates
Plastic lens-related materials for glasses (TS)	Photochromic dye materials
Microporous film (NF)	Porum, NF Sheet
Group Companies	Polyolefin film [Sun•Tox Co., Ltd.] Medical diagnosis systems [A&T Corp.] Dental materials [Tokuyama Dental Corp.] Ion exchange membranes [ASTOM Corp.] Plastic window sashes [Excel Shanon Corp.]

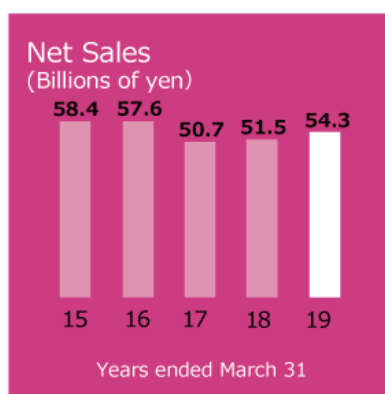
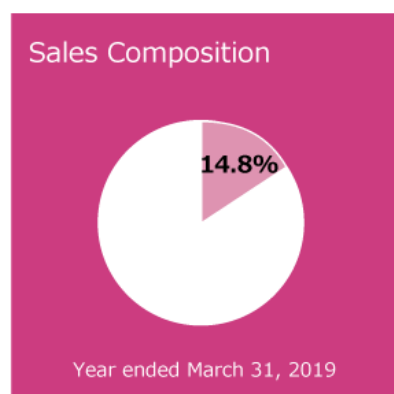
Operating Results for the Fiscal Year ended March 31, 2019

With regard to plastic lens-related materials, sales volume of photochromic dye materials for eyeglass lenses increased.

With regard to ion exchange membranes, despite sales volume was steady, its operating profit decreased due to large-scale project recorded in the previous fiscal year.

With regard to active pharmaceutical ingredients and intermediates as well as dental materials, the sales volume of each increased, and business performance was robust.

As a result of the above, segment net sales increased 5.4% compared with the previous fiscal year, to ¥54,380 million and operating profit decreased 13.1% to ¥3,238 million. The segment reported lower earnings on higher sales.



Strategies Going Forward

Tokuyama is securing a position of advantage in markets both in Japan and overseas, pursuing business expansion, and contributing to the improvement of people's quality of life by establishing and strengthening its customer-oriented development, manufacturing, and sales structure. Driven by this policy, we will advance the following priority measures.

■ MA Business

In addition to upgrading and expanding the development pipeline and strengthening the profitability of existing products, we will accelerate the pace of pharmaceutical peripheral business (cosmetics, supplements, and veterinary products) roll out.

■ TS Business

We will expand market share and cultivate new applications in photochromic dye materials for use in eyeglass lenses.

■ Dental Materials Business (Tokuyama Dental Corporation)

Focusing mainly on aesthetic filling materials (composite resins), we will work to expand the business by rolling out products in existing fields globally. In addition, we will strengthen the development structure and systems as well as marketing of next-generation businesses.

■ Medical diagnosis systems Business (A&T Corporation)

We will strengthen global business development and expand sales markets.

Healthcare-Related Products

