SUMITOMO CHEMICAL

Sumitomo Chemical 100 Years

Sumitomo Chemical 100 Years Published: August 2014

Published by Sumitomo Chemical Co.,Ltd.

Production and editing : Sumitomo Chemical Co.,Ltd.,
Corporate History Editorial Office
27-1, Shinkawa 2-chome, Chuo-ku, Tokyo, Japan

Production assisted by Dai Nippon Printing Co.,Ltd.

Printed in Japan by Dai Nippon Printing Co.,Ltd.

CONTENTS

Chairman's Message

In October 2015, Sumitomo Chemical will celebrate its 100 year anniversary.

As a member of the Sumitomo Group, which has a history and tradition dating back 400 years, we have carried on Sumitomo's business philosophy, which gives priority to maintaining society's trust while emphasizing that our business must not only benefit our own interests but also society at large. This philosophy is, in fact, firmly embedded in Sumitomo Chemical's DNA. The company began as a fertilizer manufacturing plant of the House of Sumitomo, to transform harmful sulfur dioxide emissions from smelting operations at the Besshi Copper Mine into calcium superphosphate fertilizers. In other words, it was established not merely for financial gain, but to contribute to the nation and society by providing a solution to an environmental problem and helping to increase agricultural production.

Sumitomo's business philosophy also stresses that we should keep a close watch on the changing of the times, carefully weighing opportunities and risks, and seeking long-term sustainable growth, rather than chasing short-term gains. Over the past one hundred years, Sumitomo Chemical has put this principle into practice, striving to achieve growth by meeting the needs of the times and continuously developing innovative new technologies. Along the way, we have encountered enormous upheavals, including World War II and its aftermath, the two oil crises of the 1970s, the end of the Cold War, recessions caused by the overvalued yen, the bubble economy of the late 1980s and its collapse, and the financial crisis triggered by the fall of Lehman Brothers and the subsequent global recession. Even in the face of these challenges, however, we have driven innovation to create new opportunities for growth and carried out a series of strategic initiatives to build a strong foundation for future growth—the expansion of our agricultural chemicals business overseas, the strengthening of our pharmaceutical business, the establishment of the IT-related Chemicals Sector, our Singapore petrochemical project, and the Rabigh Project in Saudi Arabia.

Sumitomo Chemical will remain firmly committed to contributing, through innovation, to solving a range of challenges facing society, and will continue to strive to achieve strong and sustained growth by reinventing itself to meet the evolving needs of the times. I sincerely hope that you will learn from Sumitomo Chemical's 100 year history and take action to bring about change, driving the company's dynamic growth into its second century.

August 2014

Osamu Ishitobi
Chairman & CEO
Sumitomo Chemical Co., Ltd.

President's Message

Next year will be the 100th anniversary since Sumitomo Chemical started its operation as a fertilizer manufacturing plant of the House of Sumitomo, shipping out the first lot of calcium superphosphate fertilizer from Niihama, Japan, on October 4, 1915.

In its early years, Sumitomo Chemical worked to expand its business into the manufacturing of ammonia and other industrial chemicals, as well as aluminum, to make its way into the modern chemical industry. In the 1950s, Sumitomo Chemical moved into the petrochemical business well before its competitors, and enhanced its fine chemical businesses, thereby becoming a full-fledged diversified chemical company. From then on, we have been pressing ahead with the globalization of our businesses in the areas of petrochemicals, ICT-related materials, agricultural chemicals and pharmaceuticals.

The very reason that Sumitomo Chemical has been able to achieve growth over nearly one hundred years, surviving hard times along the way, is because the people at this company have boldly and unflinchingly carried out business restructuring and other major change initiatives to meet the needs of the times. This history is a great source of confidence and pride for me. Times are changing more rapidly and more significantly. I would like each of you at the Sumitomo Chemical Group to continue to demonstrate a can-do spirit, take on new challenges, and explore new paths to achieve strong and sustained growth.

In particular, the chemical industry is being called upon to take an even greater role in solving pressing global challenges, such as issues relating to the environment, natural resources, energy, and food supply. The Sumitomo Chemical Group will continue to provide effective solutions to these challenges by drawing on the power of chemistry, and to contribute to building better lives by developing various businesses that meet the evolving needs of the times and by continuously delivering technological innovation.

This booklet is to commemorate our upcoming 100th anniversary and to help share the company's history with all members of the Sumitomo Chemical Group around the world. Let us take a look back at the path that has brought us here and move forward together in unity to make our next century a brilliant one.

August 2014

Masakazu Tokura
President & COO
Sumitomo Chemical Co., Ltd.

The Path to a Global Chemical Company

Sumitomo Chemical was established in 1913 as a fertilizer plant under direct management of Sumitomo General Head Office and commenced business in 1915. Thus Sumitomo Chemical is looking forward to its 100th anniversary in 2015. When production of fertilizer (calcium superphosphate) began at the end of 1915, there were only 158 employees. As of the end of March 2014, Sumitomo Chemical has grown to become a leading chemical company in the world, with affiliates in 33 countries, 164 consolidated subsidiaries and more than 30,000 employees.
Looking back at the hundred-year history of this global chemical company, we can divide it into three thirty-year periods plus the most recent decade.

1915▶1944

Building the foundation of a chemical company

The thirty years following the start of business was the age of "building the foundation of a chemical manufacturer." Sumitomo Fertilizer Works was founded to prevent pollution caused by sulfur dioxide gas emissions from copper smelting. Its first products were sulfuric acid and calcium superphosphate. Introduction and development of new technology led to the production of ammonia, nitric acid, methanol, formalin, and other industrial chemicals, forming a diverse product range and the foundation for a chemical manufacturer.

View of the ammonia plant (Ehime)

Fertilizer transport ship

1945▶1974

Diversifying into petrochemicals and fine chemicals

During the next thirty years, Sumitomo Chemical entered the fields of petrochemicals and fine chemicals. In 1944, Sumitomo Chemical merged with Japan Dyestuff Manufacturing Company (JDMC) and entered the field of fine chemicals. Pynamin, a household insecticide, was launched in 1953, the first step into the field of agricultural chemicals. Then, in 1958, an ethylene plant was completed in Ehime Prefecture, and Sumitomo Chemical began its petrochemical business. A large ethylene plant in Chiba Prefecture was built in 1965, and business expanded in tandem with the era of rapid growth of the Japanese economy.

Night view of the ethylene plant (Chiba)

1975▶2004

Actively promoting global business

During the thirty years beginning in the 1970s, Sumitomo Chemical entered the age of global expansion. These years brought dramatic change due to a series of external factors: major oil crises, recession due to overvaluation of the yen, and the burst of the economic bubble. Sumitomo Chemical has continued to undertake reforms to keep in step with shifts in the global economy and society: restructuring its businesses by leaving fields that prove unprofitable, moving into the petrochemical business in Singapore and expanding overseas enterprises in specialty chemical businesses such as agricultural chemicals. The ICT (Information and Communication Technology) industry saw rapid development in the 1990s, which meant growth in the IT-related chemicals field. Sumitomo Chemical responded by expanding its business with new overseas production bases.

Construction site of PCS second phase ethylene facilities (Singapore)

Main facilities of Misawa Works

2005▶2014

Becoming a truly global chemical company

The last decade was characterized by the promotion of globally integrated management. Mega-competition has accelerated since the turn of the century, and in FY 2004 (ended March 31, 2005), Sumitomo Chemical set forth as a goal “becoming a truly global chemical company” in the Corporate Business Plan FY 2004-2006. In keeping with this goal, Sumitomo Chemical has become involved with the Rabigh Project, expanded its IT-related Chemicals Sector, and promoted globalization of the Sumitomo Chemical Group as a whole. During FY 2010, net sales for consolidated subsidiaries overseas exceeded 50% of Sumitomo Chemical’s net sales, with overseas production accounting for more than 40% of the company’s total.

Looking toward the second century of this global chemical company, the next step will be nurturing new business under the philosophy of creating new values with “Creative Hybrid Chemistry.”

2015
2010
- Petro Rabigh begins ethane cracker operations
- Dainippon Sumitomo Pharma Co.,Ltd. established

2000
- IT-related Chemicals Sector established
- Second phase of Singapore Petrochemical Complex begins operations

1990
- Tsukuba Research Laboratory established
- Valent U.S.A. Corp. established in the United States
- Sumitomo Pharmaceuticals Co., Ltd. established
- First phase of Singapore Petrochemical Complex begins operations

1980
- Misawa Works begins operations

1970
- Takarazuka Research Laboratory established
- Sumitomo Chiba Chemical Co., Ltd. established

1960
- Sumithion launched as an insecticide for agricultural use
- Production of ethylene and its derivatives begins in Ehime

1950
- Pynamin launched as an insecticide for household use
- Sumitomo Chemical merges with Japan Dyestuff Manufacturing Company

1940
- Full-scale production of methanol and formalin begins

1930
- Name changed to Sumitomo Chemical Co., Ltd. / Completion of first plant in Japan for large-scale production of sulfuric acid produced by contact process and Sumitomo Chemical’s first nitric acid plant / Enters the aluminum business
- Full-scale production of ammonia and ammonium sulfate begins

1920
- The Sumitomo Fertilizer Works, Ltd. established

1915
1913
- Sumitomo Fertilizer Works opens for business

Sumitomo Fertilizer Works founded

1 The History of Sumitomo

Statue of Masatomo Sumitomo.
(Source: Sumitomo Historical Archives)

Sumitomo Chemical is a company in the Sumitomo Group, which has a history that dates back about 400 years to the end of the 16th century. Starting with copper refining business, the House of Sumitomo gradually expanded into copper mining and exports. The Besshi Copper Mine, in particular, played a crucial role in Sumitomo's growth and modernization. Even today, every entity of the Sumitomo Group carries on the original spirit of the House of Sumitomo, as encapsulated in Sumitomo's Business Principles.

Drawing of nanban-buki copper processing from Kodo Zuroku, a pictorial booklet about copper production issued by the Sumitomo Family at the beginning of the 19th century
(Source: Sumitomo Historical Archives)

Commencement of the Sumitomo business

The history of Sumitomo starts with two pre-eminent men who were instrumental in founding the Sumitomo business.

One was Masatomo Sumitomo (1585-1652), the founder of the House of Sumitomo. Born into a samurai family, he became a disciple of a Buddhist priest in Kyoto at the age of 12, eventually becoming foremost among the disciples. Masatomo's Buddhist denomination, however, lost the favor of the ruling regime led by the Tokugawa family, and was forcibly absorbed into another denomination. Under the circumstances, Masatomo decided to leave the priesthood and began a shop to deal in books and medicine in Kyoto, but continued throughout his lifetime to practice his faith in the secular world. Masatomo's attitude toward business, based on his wisdom and virtuous character, has been handed down over the centuries and today constitutes the business principles upheld by the Sumitomo Group Companies, including Sumitomo Chemical.

The other man instrumental in founding Sumitomo was Riemon Soga (1572-1636), who married the elder sister of Masatomo. In 1590, Riemon began a copper refining and smithing business in Kyoto. Taking cues from Portuguese he knew, he eventually developed a unique technology for separating silver from crude copper ("nanban-buki" copper processing). Until then, Japan exported its copper still containing silver. By applying Riemon's new technology, Japan was able to retrieve silver in copper ore.

The first son Rihei (1607-1662) of Riemon married Masatomo Sumitomo's daughter and took the name Tomomochi Sumitomo. Tomomochi succeeded Riemon's business, and the House of Sumitomo came to be known for its copper business. In 1623, Tomomochi expanded the family business from Kyoto to Osaka, where he began a copper export business. Father Riemon and son Tomomochi taught their unique technology to Osaka copper refiners. As a result, Osaka prospered as a hub for copper refining, and the House of Sumitomo was recognized to be its leader.

The Opening of the Besshi Copper Mine

After several decades, the House of Sumitomo ventured into the copper mining business. In 1690, Sumitomo discovered copper in Ehime Prefecture

and opened the Besshi Copper Mine. Besshi steadily increased its copper production and in 1698 recorded 1,521 tons, or one-fourth of Japan's total copper output at that time.

Saihei Hirose
(Source: Sumitomo Historical Archives)

Nearly two centuries later, in 1868, the copper production at Besshi fell to about 400 tons. Saihei Hirose, who became the general manager of the Besshi Copper Mine in 1865 and would later become the first Director General of the House of Sumitomo, modernized the mine based on a prospectus for the rationalization of the mine compiled by a French engineer. In addition, Hirose introduced western technology, such as dynamite, rock drills, steam engines and coke to replace charcoal in smelting copper. As a result, in 1888, Besshi copper production rose to a record 1,745 tons.

Sumitomo's Business Principles

In 1868, Japan experienced a drastic change. The 250-year rule of the Tokugawa Shogunate came to a close and the new government promoted the modernization of Japan by opening the country to the rest of the world. A new constitution was adopted in 1889, and the Imperial Diet was established in 1890. During this time, the House of Sumitomo underwent a metamorphosis as it shifted from a traditional family business to become a modern corporation.

In 1882, Saihei Hirose, then head of the board of directors, received an order from Tomochika Sumitomo (1843-1890), the twelfth generation head of the House of Sumitomo, to establish governing rules for the House of Sumitomo, incorporating the spirit originating from founder Masatomo Sumitomo, and stipulating matters of organization and operations.

In 1891, the governing rules were separated into two parts, corporate rules and family constitution. At the very beginning of the corporate rules section, Sumitomo's Business Principles were proclaimed as follows:

1. Sumitomo shall achieve prosperity based on solid foundation by placing prime importance on integrity and sound management in the conduct of its business.
2. Sumitomo's business interest must always be in harmony with public interest; Sumitomo shall adapt to good times and bad times but will not pursue immoral business.

Sumitomo's Business Principles remain in effect to this day, functioning as fundamental guiding principles for the Sumitomo Group Companies, including Sumitomo Chemical.

Block print of the Besshi Copper Mine
(Source: Sumitomo Historical Archives)

The Besshi Mine Railway, opened in 1893
(Source: Sumitomo Historical Archives)

2 History of Sumitomo Fertilizer Works

Sumitomo Fertilizer Works, the predecessor of Sumitomo Chemical, was established with two missions. One was to resolve the pollution caused by the gas emissions from copper production and the other was to produce fertilizers in an effort to help farmers improve their harvests. Sumitomo Chemical commenced its business based on the spirit of corporate social responsibility (CSR), contributing to society through its business activities, long before the term became popular.

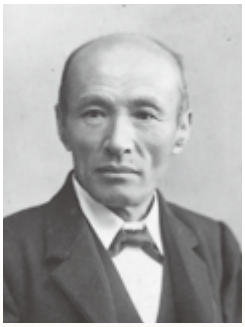
Sumitomo Fertilizer Works was established and began construction, preparation for production, and sales & marketing in 1913 under direct management of Sumitomo General Head Office. Actual sales started in 1915 and 10 years later, the business was incorporated as The Sumitomo Fertilizer Works, Ltd.

Copper smelting plants in Niihama in Ehime
(Source: Sumitomo Historical Archives)

Resolving Gas Emission Pollution

Several measures introduced by Saihei Hirose for modernization of the Besshi Copper Mine were immensely successful and production increased to 3,000 tons in 1897, up from 422 tons in 1868. By 1909 this figure doubled to 6,000 tons. As the Besshi Copper Mine was modernized and its copper business grew, some of the mining operations were separated and further developed into new businesses, and the Sumitomo Group began to take form. Charcoal and mine timber operations gave rise to forestry business. Civil engineering developed into the construction business. Equipment repair and production grew into a machinery manufacturing industry. Sumitomo expanded its business into the copper rolling industry to process the mine's copper, and related technology spread to electric wire and metals operations. The establishment of a bank and of warehouses funded by the earnings from the mine was followed by expansion into insurance, trust banking, and other financial areas.

In the meantime, the expansion of copper smelting faced an unexpected problem. In 1884 and 1888, the Besshi Copper Mine built smelting plants using western technology in Niihama City, Ehime Prefecture. It quickly became evident that the plants emitted gas containing sulfur dioxide that damaged crops grown in surrounding fields. The situation became more serious when full-scale copper production began in 1894. Local farmers made appeals to the prefectural government for countermeasures.



Teigo Iba
(Source: Sumitomo Historical Archives)

To solve the gas emission issue, Teigo Iba (the second Director General of the House of Sumitomo) was assigned to oversee the Besshi Copper Mine. He sought a fundamental solution and took the radical step of relocating the plant and smelting operation to Shisaka Island, an uninhabited island 20 kilometers offshore of Niihama. The estimated cost of the move was equivalent to two years of profits of the Besshi

Copper Mine, and ultimately cost three times as much.

Masaya Suzuki
(Source: Sumitomo Historical Archives)

Iba also undertook reforestation of the mountains around the mine that had been denuded due to the gas emissions and deforestation. As the amount of copper produced increased, more and more wood was consumed in the form of firewood, charcoal, and pit prop. About 60,000 trees per year had been planted, but in 1897 this figure leaped to one million and surpassed two million by 1901. Iba was quoted as saying that Sumitomo must return the entire mountain area around Besshi to its former lush natural state. Iba's work was carried on by Masaya Suzuki, the third Director General, who expanded the Sumitomo forestry business throughout the country.

Toward a Fundamental Solution

An enormous amount of money was invested in the Shisaka Island Smelting Works as a way to solve the gas emission problem, but it did not meet expectations.

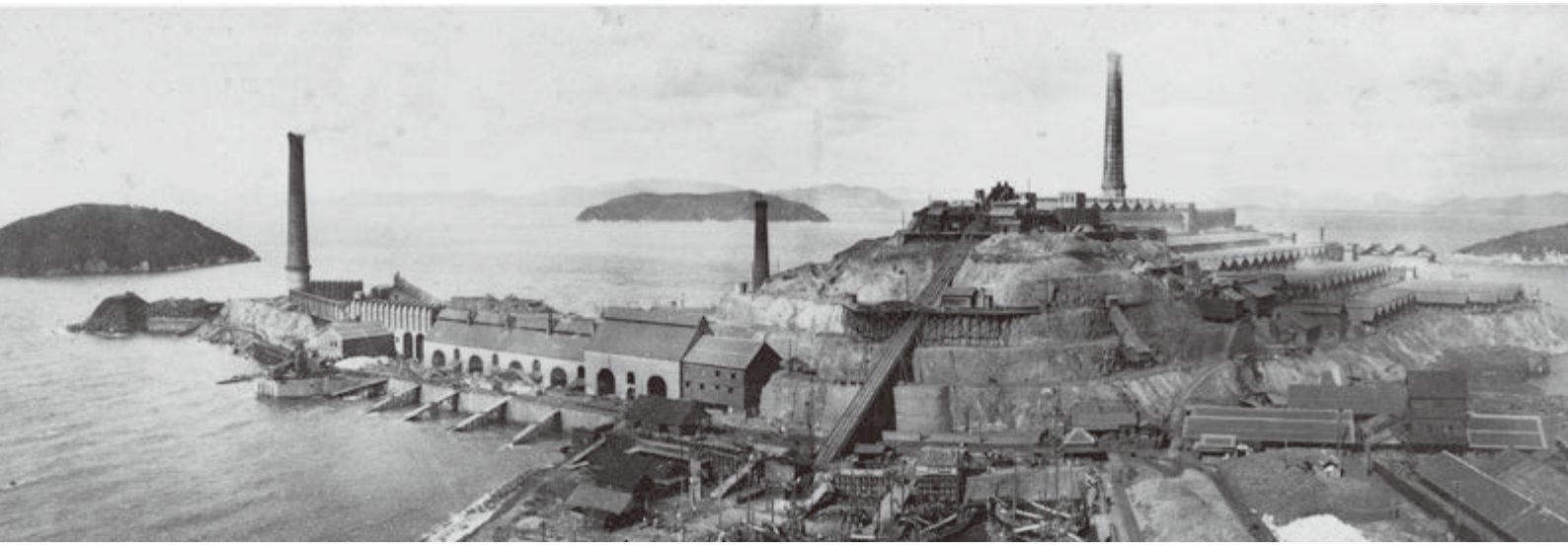
Immediately after the new offshore plant went into operation in January 1905, the villages on the shore opposite it began to complain of damage. It turned out that sulfur dioxide was not dispersed in the atmosphere and rendered harmless, but instead blown 20 kilometers over open water to, once again, destroy crops. Pollution, as a result, spread even further, to areas west of Niihama and other parts of the Seto Inland Sea coast.

At this point, Sumitomo decided that pollutants had to be eradicated. In other words, to control sulfur dioxide generated by smelting, they decided to produce sulfuric acid from sulfide ore, and use it to make calcium superphosphate. Not only would this eliminate pollution, but it would provide affordable fertilizers to farmers and contribute to agriculture. To put this plan into action, Sumitomo Fertilizer Works, the predecessor of Sumitomo Chemical, was established.

Due to high production cost with the low level of technology of those days as well as the markets for sulfuric acid and calcium superphosphate not being large enough, Sumitomo found it would be difficult to turn a profit. Some executives insisted that it would be better to sell sulfide ore rather than processing it into sulfuric acid, but Director General Suzuki declared that he would maintain a policy of pursuing the good of both mining and agriculture. In 1909, at a meeting with the leaders of the agricultural community, he was recorded as saying the following.

"If a way to rid gas emissions of sulfur dioxide were invented, Sumitomo would be fully prepared to construct the appropriate facilities, even if it were more expensive than the cost of compensating the damages of the gas emissions."

Sumitomo has always stood by the notion of "harmony between the individual, the nation and society." In other words, Sumitomo's undertakings, while benefiting Sumitomo itself, must at the same time promote the welfare of the country and of society. The manner in which Sumitomo solved the problem of the gas emissions was one of the best examples of Sumitomo



Shisaka Island Smelting Works
(Source: Sumitomo Historical Archives)

Notice announcing establishment of Sumitomo Fertilizer Works
(Source: Sumitomo Historical Archives)

Calcium superphosphate warehouse

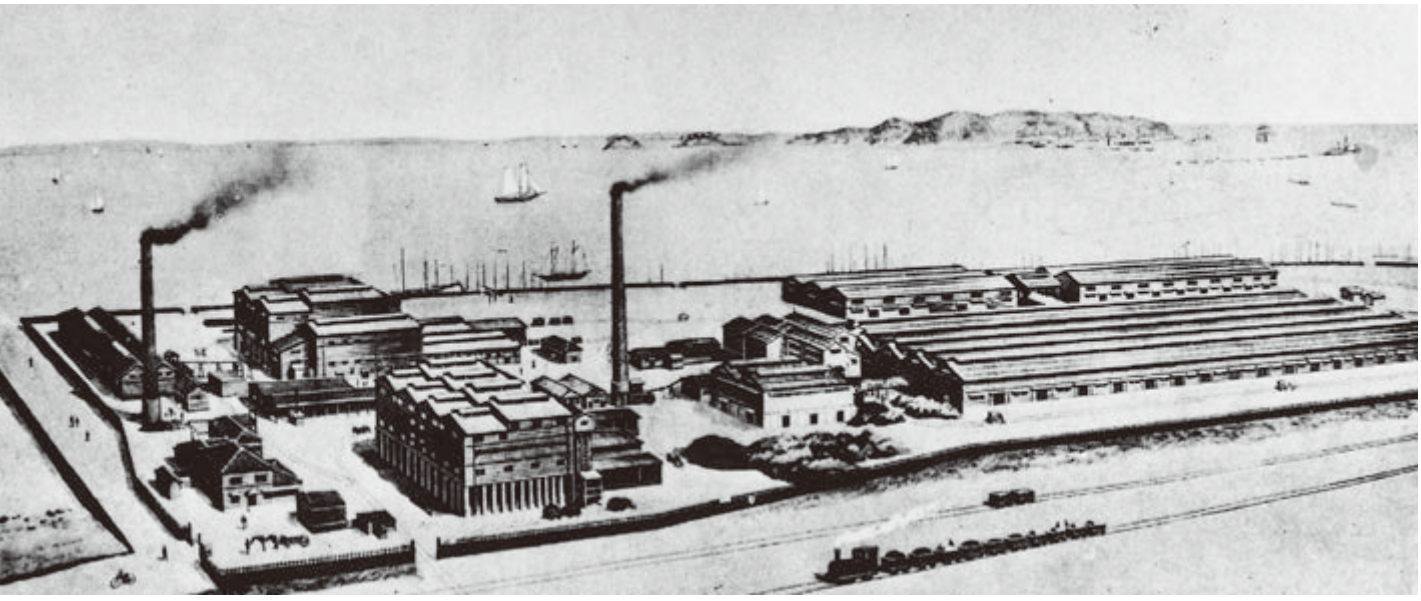
adhering to this principle. Taking responsibility to resolve environmental problems and contributing to society through business activities is what is now called CSR, and we can see that this principle has been at work in Sumitomo Chemical from its start.

Establishing Sumitomo Fertilizer Works

While a settlement was reached on compensation for gas emissions in November 1910, on September 22, 1913, Sumitomo Fertilizer Works, the predecessor of Sumitomo Chemical, was established under direct management of Sumitomo General Head Office. The construction of a plant began in November on reclaimed land in Niihama in Ehime. Plans were to build facilities to produce sulfuric acid as well as nitric acid, and to manufacture 75,000 tons of calcium superphosphate and a compound fertilizer a year using the technology of Ernst Hartmann GmbH, a German company. Unfortunately, this was rendered impossible with the outbreak of World War I. Two sulfuric acid facilities with a conventional process were built instead.

The chemical industry in Japan was still in its developmental stage, and calcium superphosphate was the only product that required large amounts of sulfuric acid. At the time, calcium superphosphate was made by many small suppliers and the market was fraught with excessive competition.

The key to success in the fiercely competitive fertilizer business was a strong sales network. Sumitomo Fertilizer Works began production in September 1915,



Sumitomo Fertilizer Works

Packing fertilizer for shipment

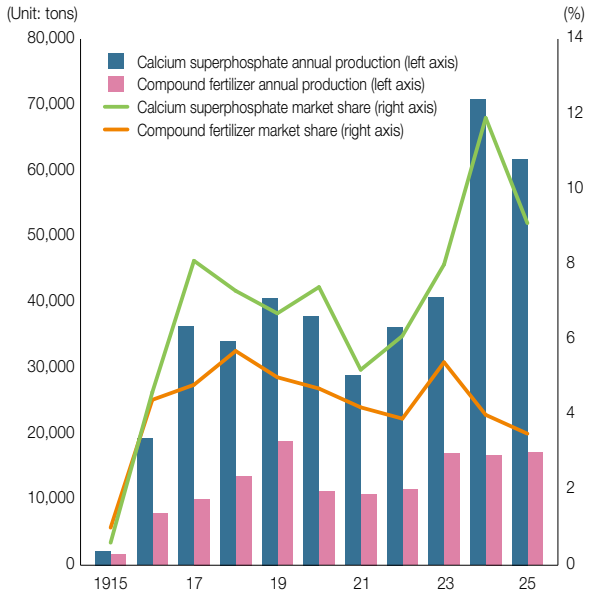
and several months before that, in April, the Osaka Office opened, putting a strategic sales system into place. The original plan was to sell products through two routes. One was direct sales to industrial unions and agricultural associations, and the other was sales through licensed agents in each region. Eventually, however, licensed agencies that were selected from among the powerful and wealthy in each region became the primary sales channels.

Calcium superphosphate produced by Sumitomo Fertilizer Works was first shipped on October 4, 1915, during World War I. With most countries of Europe at war, imports from the continent were disrupted, creating a new demand for Japanese exports. The fertilizer industry prospered. With the wind at its back, Sumitomo Fertilizer Works built new manufacturing facilities. Production of calcium superphosphate was 19,000 tons in 1916 and almost doubled to 36,000 tons in 1917, giving Sumitomo Fertilizer Works an 8% share of total national production.

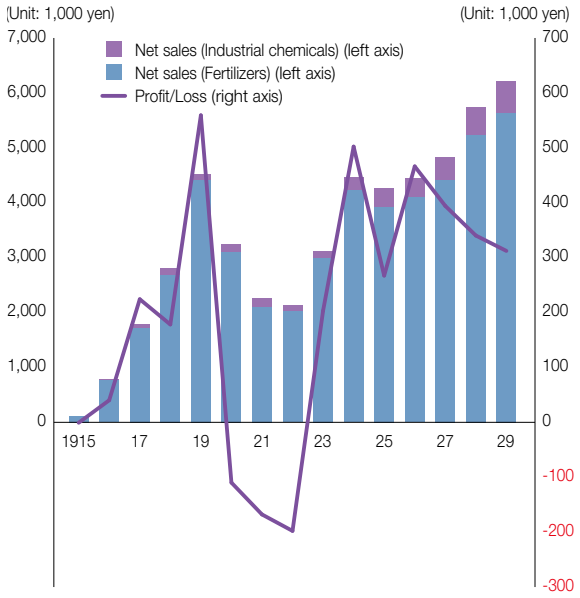
Reorganizing into a Corporation

In February 1921, Sumitomo General Head Office, which had been operated as an individual proprietorship, was restructured into Sumitomo Goshi Kaisha (SGK). As a part of the restructuring, on June 1, 1925 Sumitomo Fertilizer Works was incorporated as The Sumitomo Fertilizer Works, Ltd., an independent entity. The company became a 100% affiliate of SGK, run by Masatsune Ogura, SGK managing director. Ten years had passed since the original fertilizer plant started business. It had 379 employees and was the third largest company in the fertilizer industry, including sulfuric acid and nitric acid business, in Japan.

Fertilizer production (1915 to 1925)

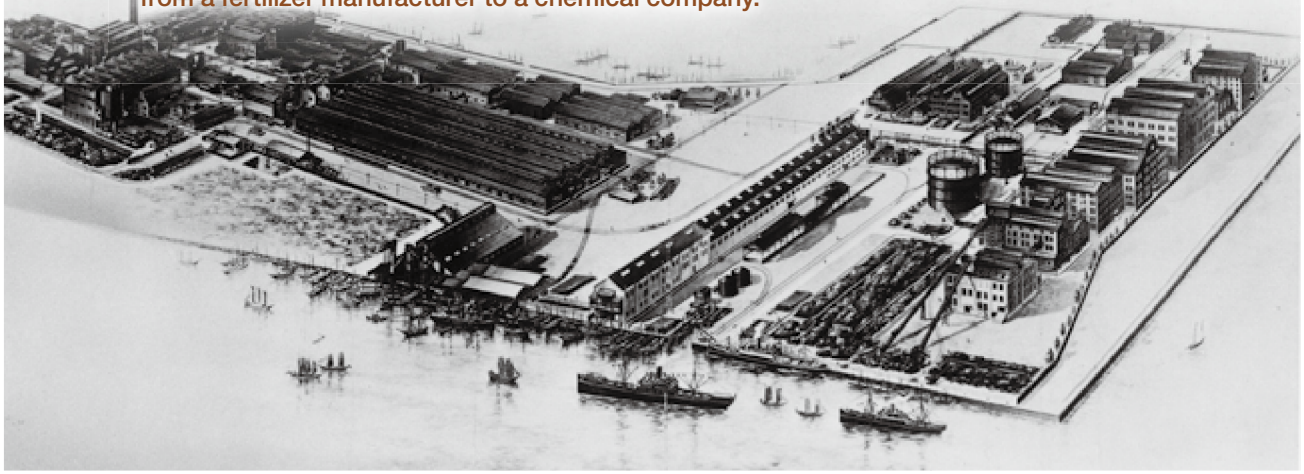


Business performance (1915 to 1929)



3 Going from a Fertilizer Manufacturer to a Chemical Company

To increase consumption of sulfuric acid, The Sumitomo Fertilizer Works, Ltd. went into the ammonium sulfate business in addition to producing calcium superphosphate. In conjunction with this, the company also began to produce ammonia. Nitric acid, methanol, formalin, and other industrial chemical businesses were also expanded, thus preparing the foundation for a shift from a fertilizer manufacturer to a chemical company.



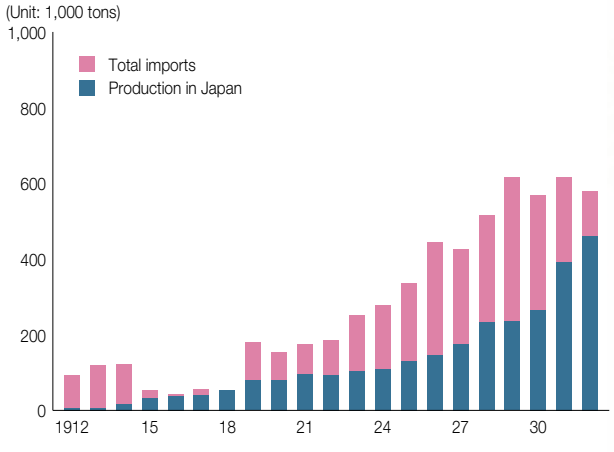
View of entire works after the first-phase ammonia plant completion (the ammonia plant is on the right)

Introduction of Ammonia Synthesis Technology

After the end of World War I, Japan was in an extended recession in the 1920s and the fertilizer industry was also in a slump, with a remarkably poor market for calcium superphosphate.

The Sumitomo Fertilizer Works, Ltd. initially went into the fertilizer business as a way to resolve the pollution caused by sulfur dioxide gas emissions, but only a small portion of the available sulfur from the Besshi Copper Mine was being used, with poor market conditions making it difficult to increase production further. Shisaka Island Smelting Works began to build facilities to turn sulfur dioxide it emitted into sulfuric acid and plans were to begin operations in 1929. The enormous amount of sulfuric acid that would be produced also needed to be used effectively.

Japan's supply of ammonium sulfate (1912 to 1932)



Source: Data from Ministry of Agriculture and Forestry

Production of ammonium sulfate was proposed as a solution. Ammonium sulfate used twice as much sulfuric acid as calcium superphosphate, and demand saw a steep increase in the 1920s. Technology to produce ammonia was introduced from Nitrogen Engineering Corp. of the United States, and in December 1930, a plant with a daily capacity of 25 tons was completed in Niihama in Ehime Prefecture. It was the first ammonia synthesis plant in Japan to use coke as raw material and the water gas shift reaction method. At the same time, an ammonium sulfate plant with an annual production capacity of 40,000 tons was completed and went into full-scale operations beginning in April 1931.

The New York stock market crashed in October 1929 leading to the Great Depression. As the economy began to recover, there was increased demand for concentrated sulfuric acid in rayon, celluloid, and dyestuff industries, so sulfuric acid plants needed to be increased. Technology was introduced from Chemical Construction Corp. of the United States in January 1933. In March 1934, a sulfuric acid plant with a daily capacity of 45 tons was built. One advantage of the production method was direct production of concentrated sulfuric acid, without causing acid mist that would result in pollution.

In February 1934, a plant with a daily capacity of 50 tons of nitric acid (50%) was completed, and

Completion ceremony for sulfuric acid plant

the company entered the nitric acid business. This step was taken based on a strong request from the Army Ministry of Japan. The Army owned the process which produced diluted nitric acid. The nitric acid was put through extractive distillation using concentrated sulfuric acid to produce concentrated nitric acid. The military needed nitric acid to make gunpowder and other items.

Changing the Company Name to Sumitomo Chemical Co., Ltd.

In December 1933, management announced the goal to take the company out of the confines of the fertilizer manufacturing industry and bring it into the chemical industry. As a part of the process, the name of the company was changed in February 1934 from The Sumitomo Fertilizer Works, Ltd. to Sumitomo Chemical Co., Ltd. (hereinafter "Sumitomo Chemical"). Sales of industrial chemicals were already over 10% of company sales in 1930, and growth continued. The figure was 25% by 1935—it was already beginning to look like a chemical company. In March 1934, it was the first Sumitomo manufacturing company to go public with stock.

In the years following, the list of chemicals Sumitomo Chemical produced continued to grow. Methanol and formalin were added in 1937. The technology came from Nitrogen Engineering Corp. In June, a plant with a daily capacity of 5 tons of methanol was completed, followed in September by one that could produce 5.5 tons of formalin a day. They went into full-scale operation in April 1938. In July

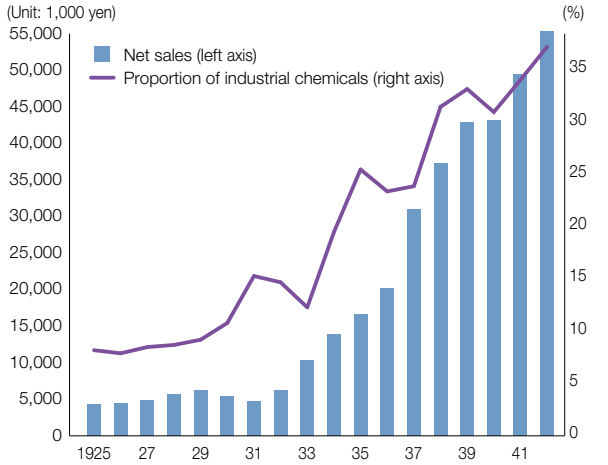
Warehouse for ammonium sulfate

1941, a plant was built with an annual capacity of 3,600 tons of methanol.

Trial production of urea for medical use was begun in July 1933. In 1938, the production process was changed to a direct synthesis of ammonia and carbon dioxide, and full-scale production began. In August of the same year, Sumitomo Chemical, in a fifty-fifty joint venture with Nippon Bakelite Co., Ltd., established Synthetic Resin Industry (now Sumitomo Bakelite Co., Ltd.) to manufacture urea formaldehyde resin. In other areas, a test plant for saltpeter was set up in June 1939, and production facilities for isobutanol in December 1943. From December 1942, Sumitomo Chemical borrowed facilities of Kyoto Imperial University's Institute for Chemical Research for test production of buna synthetic rubber.

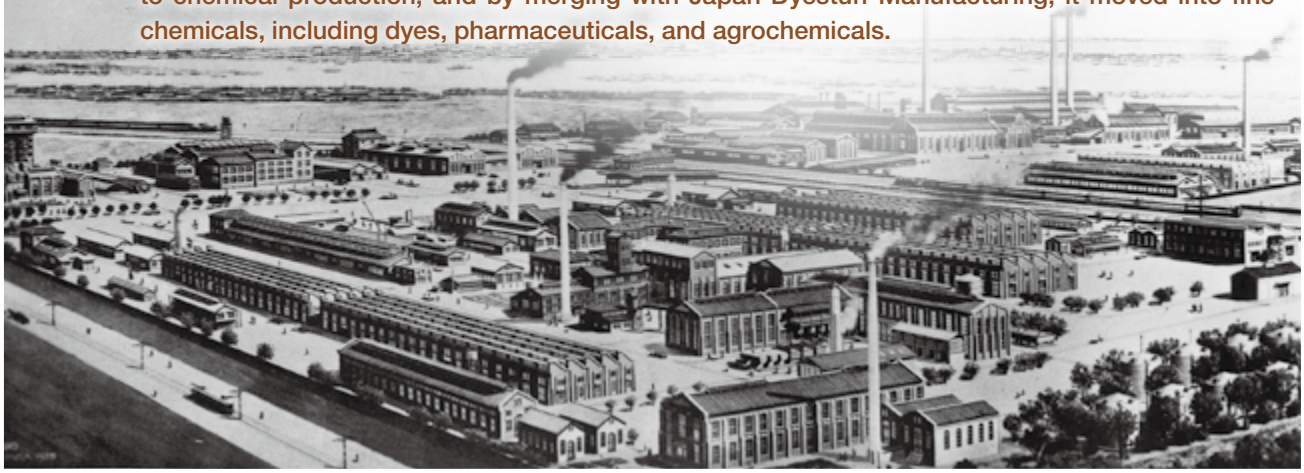
Production of sulfuric acid and ammonia increased greatly going into the 1930s. The peak was in 1937, before World War II. Production of fertilizers, chiefly ammonium sulfate, had also been on the increase, but as wartime controls went into place, the proportion of fertilizer sales to Sumitomo Chemical total sales gradually declined. In 1942, 37% of Sumitomo Chemical's sales were in industrial chemicals.

Net sales and proportion of industrial chemicals (1925 to 1942)



4 Moving into Fine Chemicals

Japan Dyestuff Manufacturing Company was established in line with national policy to nurture the production of tar derivatives, such as synthetic dyestuffs, pharmaceuticals, and other chemicals. Sumitomo Chemical had expanded its business activities from fertilizer manufacturing to chemical production, and by merging with Japan Dyestuff Manufacturing, it moved into fine chemicals, including dyes, pharmaceuticals, and agrochemicals.



Japan Dyestuff Manufacturing Company Kasugade Works (Osaka)

Merging with Japan Dyestuff Manufacturing Company

Sumitomo Chemical's fine chemicals business began with a merger with Japan Dyestuff Manufacturing Company (JDMC) on July 1, 1944. JDMC was the largest dyestuff company in Japan and had capital of 30 million yen. Its plants included the Kasugade Works (the current Osaka Works in Osaka), which made mainly dyes and rubber chemicals, the Torishima Works (Osaka), devoted exclusively to manufacture of pharmaceutical products, and the Tsurusaki Works (currently Oita Works in Oita Prefecture) for raw materials and intermediate products for dyes, rubber chemical products and pharmaceuticals.

Japan's demand for synthetic dyestuffs grew along with the nation's textile industry but the supply of synthetic dyestuffs was completely dependent on imports. These imports ground to a halt during World War I. With no tar derivatives produced in Japan such as synthetic dyes and pharmaceuticals, the prices for dyes, for example, averaged 20 to 30 times what they had been before the war. Steps had to be taken to improve the situation. In 1915, a law was enacted to encourage and nurture the production of tar derivatives, such as synthetic dyestuffs and pharmaceuticals. The law promised ten years of subsidies to manufacturing companies entering these fields.

Japan Dyestuff Manufacturing Company was established based on this law, on February 25, 1916.

Construction of the Kasugade Works began in July 1916, with a gradual move into production, beginning in early 1918.

In October 1926, the subsidies from the government came to an end. During its first decade, JDMC was able to build up its technological capacity. By the end of 1926, JDMC had 242 dyes it had completed research on, and seventy of them were on the market. More than thirty were on a par with products produced overseas.

By that time, however, pressure was mounting from competition with European dyestuffs, and company operations required fortifying. As a result, corporate auditor Katsutaro Inabata was installed as president. Inabata was a leading figure in the dye industry, with experience in both importing and factory management. He served as an auditor during the preparations to establish JDMC, and continued in that capacity until he became president. Inabata shifted operations to a more active private-company style, and strengthened JDMC's foundation by overhauling the sales system and promoting research and development. Striving to diversify business, in 1932, JDMC marketed the vulcanization accelerator Soxinol and the antioxidant Antigen, anticipating growing demand for automobile tires. In addition, JDMC moved into new business fields including pharmaceutical products and synthetic

Outline of Japan Dyestuff Manufacturing Company

(Unit: 1,000 yen)

	Japan Dyestuff Manufacturing Company	Sumitomo Chemical
Capital	30,000	80,000
Net sales	65,187	65,188
Net profit	2,998	7,122
Dividend rate	8%	8%
Total assets	63,857	205,183
Total liabilities	16,482	108,617
Equity	47,375	96,566

Note: Net sales, net profit and dividend rate are for FY1943. Total assets, total liabilities and equity are as of the end of FY1943. Net sales of Japan Dyestuff Manufacturing Company is an estimate.

Interior of dyestuffs plant (Kasugade, Osaka)

sweeteners, as well as rubber chemicals. In September 1936, the Torishima Works in Osaka began producing pharmaceuticals, and in December 1939, the Tsurusaki Works in Oita began producing raw materials and intermediate products for dyes, etc., setting the stage for an advance into fine chemicals.

At the request of JDMC, in 1934, Sumitomo Chemical began to manufacture synthesized nitric acid and, in 1936, to supply tar distillates. By supplying these materials, the connection between the two companies grew stronger. In addition, Sumitomo Goshi owned stock in JDMC and participated in management by dispatching executives.

In the years following, however, as the wartime control during World War II took over, there were great shortages of raw materials, coal and electricity, and JDMC operations became increasingly difficult. In 1943, the number of dyes the dye industry produced was cut to one-third, or 155 varieties, and the decision was made to organize 200 dye companies into mainly six major corporations. In addition, in January 1944, JDMC failed to be designated a primary munitions company, meaning it could no longer count on getting a share of raw or other materials. At this point, the decision was made to merge with Sumitomo Chemical.

A Base for Fine Chemicals

Sumitomo Chemical took over three JDMC plants: the Kasugade, Torishima and Tsurusaki Works. In July 1944, the three were brought under the umbrella of the newly established Osaka Works, which eventually became the core of the fine chemicals business, in charge of R&D and production of medical chemicals, agrochemicals, polymer additives, rubber chemicals, and other products.

Since the Kasugade Works began operations, it had been producing dyes, intermediates and dyeing auxiliaries. Concerning dyes, the main raw materials were tar distillates from the Yahata Steel Works, which the plant made into intermediates and then into completed dyes. Although the Kasugade Works was a production base for fine chemicals, such as dyes and rubber chemicals, in the 1980s, it began a shift to research of some agrochemicals, of pharmaceuticals, and of product safety, and it currently plays a major role in research functions of Sumitomo Chemical.

The Torishima Works was located about a kilometer northwest of the Kasugade Works. The all-modernized German-style factory began operations in September 1936 as a pharmaceutical chemicals factory, the first one in Japan to mass-produce synthetic products in an integrated manner, beginning with raw materials and ending with the completed product. After the merger with Sumitomo Chemical, the factory continued to fulfill its role producing pharmaceutical chemicals and agrochemicals, but operations were finally halted in April 1988, closing a chapter in history.

The main purpose of the Tsurusaki Works was to mass-produce intermediate products. Partial operations began in December 1939, when production of beta-naphthol, aniline, and other intermediate products in mass production were moved to it from the Kasugade Works. In 1962, the factory began to produce Sumithion, an organophosphorus insecticide. As well as making an advance into active pharmaceutical ingredients, the factory is currently playing a role as a production base for the life science chemical business. In May 1964, the plant's name was changed to the Oita Works.

The Ozaki Dyestuff Chemical Works in Okayama Prefecture had originally planned to merge with JDMC. In August 1945, this plant was taken over by Sumitomo Chemical, thus becoming the Osaka Works Okayama Plant. In February 1988, it split off as an affiliate company to become Okayama Chemical, and in April 1992, it became the Okayama Plant of Sumika Fine Chemicals Co., Ltd. A merger with Sumitomo Chemical in July 2004 re-established the facility as the Okayama Plant.

Japan Dyestuff Manufacturing Company Tsurusaki Works (Oita)

5 Post-war Recovery

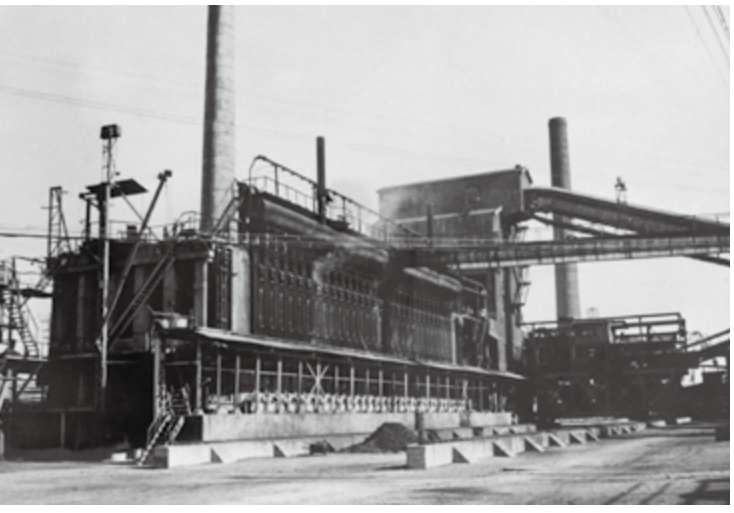
The manufacturing facilities in Ehime and in Osaka, including the light metal factory, were heavily damaged in the air raids of World War II, and were forced to halt operations after the war. Following all-out restoration efforts, the Ehime facilities were quickly restored and were producing ammonium sulfate by October 1945. The following month, the Osaka facilities began saccharin production.

View of Ehime facilities around 1947 (Source: The Mainichi Newspapers)

Dissolution of "*zaibatsu*" and Sumitomo Chemical

World War II ended on August 15, 1945. Sumitomo Chemical's factories in Osaka were devastated in the air raids and the Ehime factories were also seriously damaged.

One of the pillars of postwar economic reform for Japan, as laid out by US General MacArthur and GHQ during the Occupation, was the dissolution of "*zaibatsu*," the nation's huge industrial conglomerates. These included Mitsui, Mitsubishi, Sumitomo, Yasuda, and others. Each was encouraged to voluntarily dismantle their organizations. The Sumitomo Honsha headquarters submitted its plan on November 4, 1945, and GHQ on November 6 ordered the plan to be carried out. Sumitomo Honsha announced the following prospectus on November 8.



Otto-style coke oven used to produce ammonia (Ehime)

1. Dissolution of Sumitomo Honsha, Ltd.
2. Handover of stock owned by Sumitomo Honsha to the specified government agency
3. Resignation of Honsha executives from posts in affiliated companies
4. Avoidance of "Sumitomo" in names of affiliated companies

In keeping with this policy, Sumitomo Honsha ended its activities and was effectively dissolved on January 21, 1946, and Sumitomo Chemical Co., Ltd. changed its name to Nisshin Chemical Co., Ltd. on February 26. In October of the same year, the stock shares owned by Sumitomo Honsha were handed over to the Holding Company Liquidation Commission, after which they were sold to employees at market value.

In December 1946, Nisshin Chemical was also designated a holding company, and in February 1948, it was ordered to reorganize in the form of multiple companies according to the Excessive Economic Power Deconcentration Law. In the meantime, in July 1947, GHQ had suggested separation into six companies. The Ehime factories, the Osaka factories, the aluminum division, the Wakayama Plant and the Okayama Plant would be independent companies and Nisshin Chemical Co., Ltd. would be in charge of the liquidation. In the years that followed, the relationship between the United States and the Union of Soviet Socialist Republics deteriorated and the Cold War continued. In the process, the United States adjusted its occupational policies toward Japan to hasten its economic recovery. Application of the Excessive Economic Power Deconcentration Law was relaxed, and Nisshin Chemical's designation was changed in April 1949 so

Coupling dyestuff plant (Kasugade, Osaka)

that it was no longer subject to the terms of the act. This settled the reorganization issues.

The San Francisco Peace Treaty came into effect in April 1952, and in May, the government rescinded the order abolishing all names and logos of former "*zaibatsu*." On August 28, the company name was changed back to Sumitomo Chemical Co., Ltd.

Plant Restoration

Two days after the end of the war, the ammonia plant, the only factory in Ehime still operating at the time, stopped all operations. Following all-out efforts at restoration, in September 1945, ammonia production started again, followed in October by production of ammonium sulfate using the sulfuric acid still in stock and, in November, of calcium superphosphate. In December, the sulfuric acid and nitric acid plants were back in operation. In May 1946, plans for fundamental repairs of facilities were put into action, beginning with a new water electrolysis plant. In October of that year, monthly production of ammonium sulfate reached 10,000 tons. By 1949, out of 17 plants in Japan, Sumitomo Chemical's plant had the highest ammonium sulfate production, at 140,000 tons per year, and Sumitomo Chemical's recovery in this industrial segment was complete. In December 1949, full operation was restored for mixed fertilizers and, in May 1951, production of chemical fertilizers (ammonium phosphate and potassium ammonium phosphate) was restored.

Osaka Works started up anew with the production of saccharin, an artificial sweetener, in November 1945. Since GHQ did not allow the restoration of dye production, the recovery of direct dyes was delayed until January 1947. This was followed by completion of facilities for azo dyes in September and chrome dyes in April 1948. As policies on occupation shifted, in July 1950, dye production facilities with a monthly capacity of 110 tons were built and this completed the restoration of dye factories for the time being.

As for other locations, after the war, the Tsurusaki Plant in Oita produced various intermediates for dyes on a small scale and, in February 1946, it began production of Antigen D, a rubber chemical. At the same time, the Okayama Plant began production of sulfide dyes.

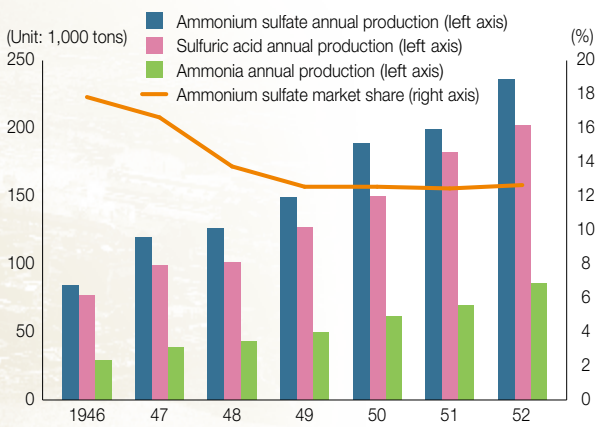
Incorporating Overseas Technology and Start of Polyvinyl Chloride Business

The incorporating of technology from abroad was enabled by the enactment in June 1950 of the laws governing foreign capital. The laws made it possible to receive investment from abroad as well as to send funds overseas for technological assistance. Sumitomo Chemical immediately (July 1950) introduced urea technology from Chemical Construction Corp. of the United States, and in June 1952, built a urea plant with an annual capacity of 12,000 tons.

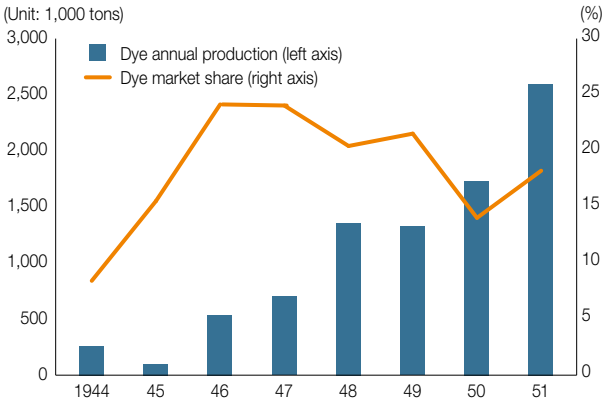
In February 1951, Sumitomo Chemical concluded a contract with American Cyanamid Co. to produce melamine resin, which was used in textiles, leather and paper processing, and a plant was built for this purpose at the Osaka Works in October 1952.

One fruit of research and development was the commercialization of polyvinyl chloride business, based on research that had begun in 1946. Intermediate tests began in January 1950 and, in July 1951, emulsion polymerization production facilities in Ehime were completed, although the scale was small at 25 tons a month. In April 1955, suspension polymerization was introduced and in May 1957, monthly production capacity (including emulsion polymerization products) reached 1,000 tons.

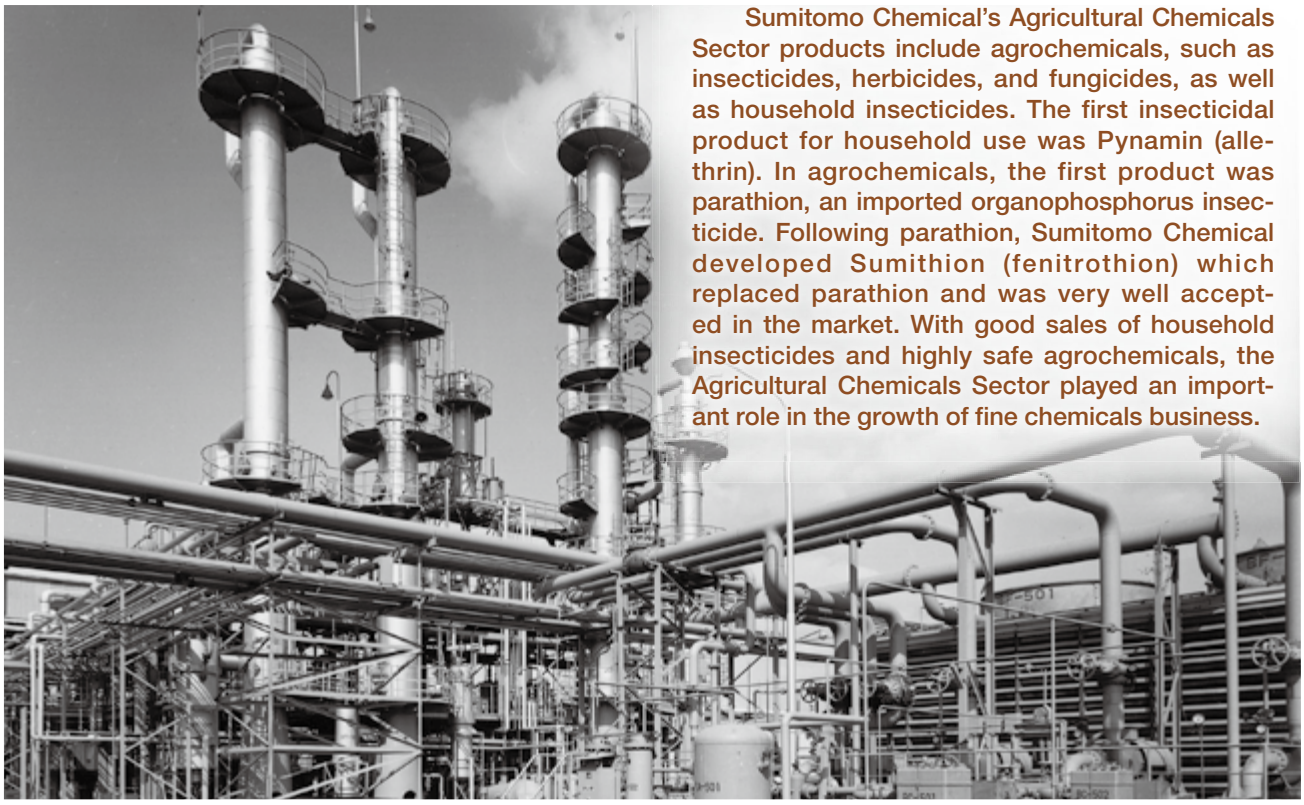
Production volumes for ammonium sulfate, sulfuric acid, and ammonia (1946 to 1952)



Dye production (1944 to 1951)



6 Moving into the Agricultural Chemicals Business



Sumitomo Chemical's Agricultural Chemicals Sector products include agrochemicals, such as insecticides, herbicides, and fungicides, as well as household insecticides. The first insecticidal product for household use was Pynamin (allethrin). In agrochemicals, the first product was parathion, an imported organophosphorus insecticide. Following parathion, Sumitomo Chemical developed Sumithion (fenitrothion) which replaced parathion and was very well accepted in the market. With good sales of household insecticides and highly safe agrochemicals, the Agricultural Chemicals Sector played an important role in the growth of fine chemicals business.

New Sumithion plant (Oita)

Start of the Business

The Agricultural Chemicals Sector, including the household insecticides and agrochemicals, was one of the businesses that Sumitomo Chemical newly expanded into in the 1950s. The beginning of the household insecticides business was in 1953 with the commercial production of allethrin. Allethrin is one of the "pyrethroids" which has a similar structure to pyrethrin, the active insecticidal component in pyrethrum (a variety of chrysanthemum traditionally used as an active ingredient for insecticides). Sumitomo Chemical succeeded in synthesizing allethrin in 1949. With manufacturing approval by the Ministry of Welfare in August 1953, Sumitomo Chemical launched allethrin, named Pynamin, for mosquito coil use. Unfortunately, Pynamin was not accepted well due to its color and smell that were different from the natural ingredient pyrethrum. In 1954, once mass-production of mosquito coils began, Pynamin was widely adapted as one of its active ingredients. In 1955, a shortage of pyrethrum led to its sudden price increase, and Pynamin was getting recognized for its stable price compared with the natural ingredients.

The first step into the agrochemical business was taken in February 1953, when Sumitomo Chemical began to import and sell parathion, an organophosphorus insecticide, produced by American Cyanamid Co. (ACC). Parathion was effective on rice-stem bor-

Pynamin plant (Torishima, Osaka)

Parathion plant (Oita)

ers and other pests in rice, fruits and vegetables. Sumitomo Chemical thus expected good demand for this product in the Japanese market. For its production in Japan, Sumitomo Chemical signed license agreements with ACC (ethyl parathion) and Bayer AG (methyl parathion). In February 1954, an ACC ethyl parathion production facility was built at the Tsurusaki Works in Oita, followed in March 1955 by another facility producing both methyl parathion and ethyl parathion.

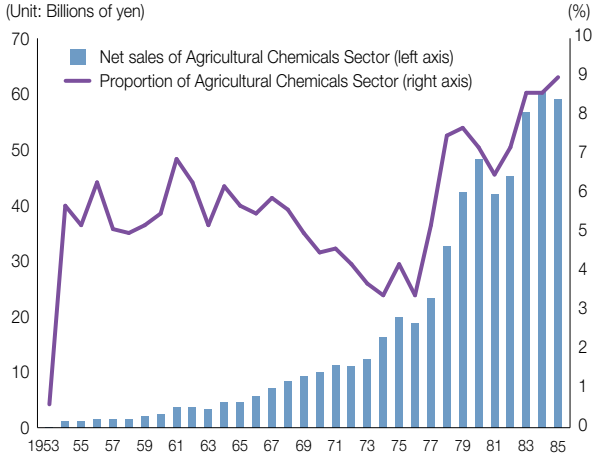
Also in February 1954, Sumitomo Chemical started imports and sales of malathion, an organophosphorus insecticide from ACC. Production of the technical grade began in August 1955. Malathion was used as an insecticide for fruit trees and rice. Making use of malathion's characteristics as low toxicity and good efficacy on flies, mosquitoes and cockroaches, in 1958, premium malathion was developed targeting insect-borne disease prevention and pest control in livestock raising.

Development of Major Agrochemical Products

In the field of agrochemicals, Sumitomo Chemical not only began the production of in-licensed chemicals in Japan but also developed a new organophosphorus insecticide, Sumithion. In August 1959, Sumitomo Chemical applied for patents in Japan and overseas countries. Sumithion had excellent, long-lasting effects and it was much less toxic than parathion. In November 1961, a 150-ton-per-month production facility of Sumithion was completed at the Tsurusaki Works, and Sumithion was launched in April 1962.

In the mid-1960s, the regulations on agrochemical safety in Japan became stricter, and in June 1971, the use of parathion was banned. It was at this point that Sumitomo Chemical began promoting a switchover to Sumithion from parathion and pioneered its use for fruit, vegetable, and tea crops. Sumitomo Chemical actively expanded into overseas markets as well. By the end of the 1960s, Sumitomo Chemical was promoting the use of Sumithion in more than 50 countries. This resulted in a broadly expanded demand for Sumithion; from 1966 to 1969, yearly production capacity grew from 2,000 to 5,000 tons.

Net sales of Agricultural Chemicals Sector (1953 to 1985)



Note: Proportion is to total Sumitomo Chemical sales

The next bestselling agrochemical to Sumithion was Sumicidin, which was launched overseas in April 1976. Sumitomo Chemical was the first company in the world to develop a pyrethroid without a cyclopropane ring structure, and it had excellent effects on pests on cotton plants. It was a hit product, with exports achieving net sales of 13 billion yen in 1980. In Japan, Sumitomo Chemical developed a combination product of organophosphorus insecticide and Sumicidin. In April 1983, Permathion and three other products were launched for fruit and vegetable crops.

In the field of fungicides, Sumitomo Chemical developed Sumilex and began selling it overseas in December 1976. The product was used to prevent botrytis cinerea in vegetables, grapes and other fruits. It was a major product, and in 1981, sales volume in Japan and overseas countries exceeded 500 tons.

Getting into Full-scale Household Insecticides

By 1962, natural pyrethrum in mosquito coils had been replaced by Pynamin and its demand increased dramatically. When used in aerosol products, though, its knock-down efficacy was inferior to pyrethrin, the active ingredient in pyrethrum. Thus a fast-acting pyrethroid compound was developed and, in March 1965, launched under the name of Neo-pynamin. Subsequently, in 1973, Pynamin Forte was developed, with double efficacy to Pynamin on pests. In 1976, Sumithrin was developed as killing agent against flies and mosquitoes, and in 1989, Etoc was developed for wide use in mosquito coils, electric mosquito repellents, aerosols and other products.

View of Misawa Works (Aomori)

To respond to expanded demand for pyrethroids, the Misawa Construction Division was established in March 1975 to build a new plant on an industrial complex in Misawa City, Aomori Prefecture. Operations began in January 1978 and the first release of Neo-pynamin and Pynamin Forte was realized in March.

The Misawa Works became the main factory of pyrethroids for Sumitomo Chemical. It realizes new technologies, such as practical application of optical resolution, as well as launches many products newly introduced to the market and leads the growth of the household insecticides business.

7 Growth of the Pharmaceuticals Sector

Sumitomo Chemical's Pharmaceuticals Sector began to expand through tie-ups and joint ventures with overseas corporations. The synthetic pharmaceutical technology of Sumitomo Chemical was demonstrated through the development of new production methods for indometacin and diazepam. New pharmaceuticals, such as neuropsychiatric and cardiovascular drugs as well as anti-inflammatory analgesics, were launched one after the other.

View of Ibaraki Plant (Osaka)

Postwar Restart

The Torishima Plant for pharmaceutical production was completely destroyed during the war. Reconstruction was energetically undertaken to resume operations and full-scale restoration of operations was completed in 1949. The plant produced new drugs, such as Anergen (an antihistamine), Tonopron (an antihypertensive), and Uronamine (a urinary tract antiseptic).

In 1950, the Torishima Plant began to produce para-aminosalicylic acid (PAS), an antituberculosis drug. Sumitomo Chemical launched methionine (a synthetic essential amino acid) as a drug listed in the official Pharmacopoeia of Japan, and began to supply it for use in multivitamin supplements in 1951. Sumitomo Chemical had also some OTC (over-the-counter) drugs such as Dan that was a popular cold remedy containing antihistamine, and U-Von that was an anti-aging/nutritional drug. In May of 1958, Tespamin, an antitumor medication, was produced using advanced technology that drew attention overseas and Sumitomo Chemical's first international licensing in the pharmaceuticals area was made to American Cyanamid Co. in 1960.

Joint Ventures with Overseas Corporations

Sumitomo Chemical's first joint venture with an overseas corporation came in June of 1959 when the company established Japan Upjohn Ltd. with Upjohn Corp. of the United States. Sumitomo Chemical took a 45% stake in the new company's capital stock, 20 million yen. Before that, in 1953, Sumitomo Chemical formed a tie-up with Upjohn to import cortisone (one of the corticosteroids) products. After Japan Upjohn was established, Sumitomo Chemical moved the sales of Upjohn products, some of them were manufactured by Sumitomo Chemical, to this joint venture company. Sumitomo Chemical withdrew its investment in Japan Upjohn in December 1994.

In July 1959, Sumitomo Chemical signed a contract with Imperial Chemical Industries Ltd. (ICI) of the United Kingdom to import the antiseptic Hibitane. ICI and Sumitomo Chemical already had a strong relationship based on the introduction of polyethylene technology (1955), and this new tie-up took the two companies also into the pharmaceutical field. In 1974, products from ICI reached 20% of Sumitomo Chemical's pharmaceutical net sales. Sumitomo Chemical and ICI in July 1974 further embarked upon a joint venture, ICI Pharma Ltd., which they financed in equal parts (600 million yen capital). In November 1993, ICI Pharma changed its name to Zeneca Yakuhin and, in October 2000, merged with AstraZeneca K.K. (20% owned by Sumitomo Chemical), the Japanese affiliate of AstraZeneca of the United Kingdom. Subsequently in 2014, Sumitomo Chemical sold its 20% shareholding of the joint venture to AstraZeneca.

Nihon Medi-Physics Co., Ltd., a joint venture between Sumitomo Chemical and Medi-Physics Inc. of the United States, was established in March 1973, to market diagnostic drugs that use radioisotopes (capital 200 million yen, 45% owned by Sumitomo Chemical). Medi-Physics' shares were taken over by Nippon Roche in March 1975. In December 1994, Nippon Roche terminated its participation and the new capital investor became Amersham International plc of the United Kingdom. The latter was acquired by GE Healthcare UK Limited, which took over the shares of Nihon Medi-Physics in April 2004. (Since October

1996, Sumitomo Chemical has owned 50% of the shares.)

New Business Division for Pharmaceuticals

Sumitomo Chemical established a business division for pharmaceuticals in July 1961 with the aim of modernizing the field. Until then, the business had been divided among department managers for administration, manufacturing, research, etc. located at the head office, the Tokyo branch office and the Osaka Works, but the creation of the new division made it possible to integrate the pharmaceutical business under one division head.

The Japanese pharmaceutical industry enjoyed brisk demand, mainly owing to the introduction of Japan's National Health Insurance scheme in April 1961 and health care coverage for the country increased dramatically. Between 1960 and 1963, Sumitomo Chemical experienced rapid growth in pharmaceuticals with percentage sales gains in the 20s and the 30s. The range of products also expanded and diversified. To keep up with its burgeoning business, Sumitomo Chemical increased its production capacity by constructing the Ibaraki Plant (Ibaraki City, Osaka) in 1962.

Sumitomo Chemical conducted R&D and the production of pharmaceutical products, and the marketing was assigned to Inabata & Co., Ltd. (exclusive distributor). In order to attain further efficiencies in market needs assessment, sales planning and inventory management, in February 1967, Sumitomo Chemical and Inabata integrated sales administration and inventory control, making it possible for both companies to coordinate more effectively and for Sumitomo Chemical to undertake rational production planning.

Developing Methods to Produce Indometacin and Diazepam

During the latter half of the 1960s, two products were developed that evidenced the value of Sumitomo Chemical's drug synthesis technologies. One was the non-steroidal anti-inflammatory drug Inteban (indometacin) launched in March 1967 and the other was the anxiolytic Serenzin (diazepam) launched in November 1968.

Indometacin was developed by Merck & Co., Inc. of the United States and globally accepted as a treatment for rheumatoid arthritis. Sumitomo Chemical was able to develop its own production method for the drug, achieving superior cost performance. When Merck & Co. realized Sumitomo Chemical's revolutionary production methods of indometacin, Merck & Co. asked and was granted a license to use the patented process with the payment of US$ 3 million (1.08 billion yen) in May 1967.

Sumitomo Chemical also developed a new excellent production method for diazepam, one of the benzodiazepines, and was able to export this technology. In September 1970, the Swiss company F. Hoffmann-La Roche AG paid US$1.6 million (570 million yen) for permission to use the patent to produce benzodiazepine compounds.

Robust Sales Growth

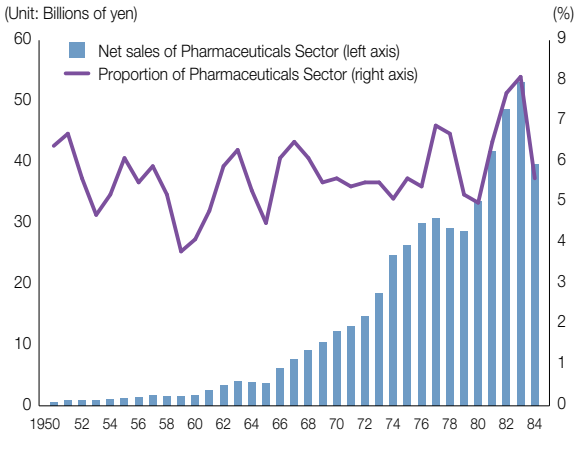
Pharmaceutical sales were flat in the late 1970s, around 30 billion yen, but increased dramatically from the beginning of the 1980s. Sales reached 53.1 billion yen in 1983, meaning sales were 41 times larger than that in 1955, the beginning of Japan's rapid economic growth era.

Rapid growth in the 1980s can be attributed to the success of Sumitomo Chemical's original research and development: psychoneurologic drugs, cardiovascular medications, and anti-inflammatory analgesics. Specifically, in 1979, Abilit, an antipsychotic drug to treat schizophrenia, was launched. It was followed by Inteban ointment (a transdermal non-steroidal anti-inflammatory drug) in 1980, the anxiolytic Erispan and the lipid-lowering drug Lipoclin in 1981.

Advertisements for Dan and U-VON

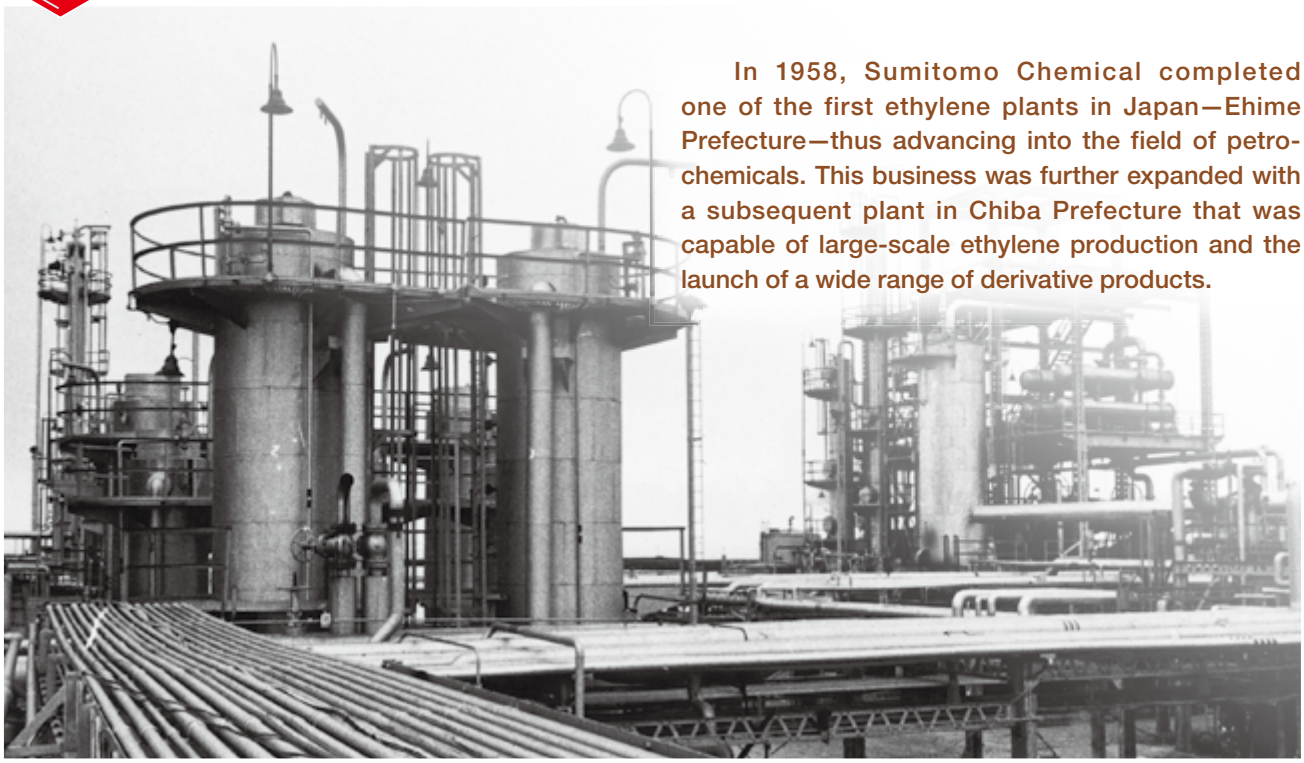
Higashi Yodogawa Plant in Osaka for formulation (1947-1962)

Net sales of Pharmaceuticals Sector (1950 to 1984)



Note: Proportion is to total Sumitomo Chemical sales

8 Entering the Field of Petrochemicals



In 1958, Sumitomo Chemical completed one of the first ethylene plants in Japan—Ehime Prefecture—thus advancing into the field of petrochemicals. This business was further expanded with a subsequent plant in Chiba Prefecture that was capable of large-scale ethylene production and the launch of a wide range of derivative products.

Ethylene plant (Ehime)

Production of Ethylene and Derivatives

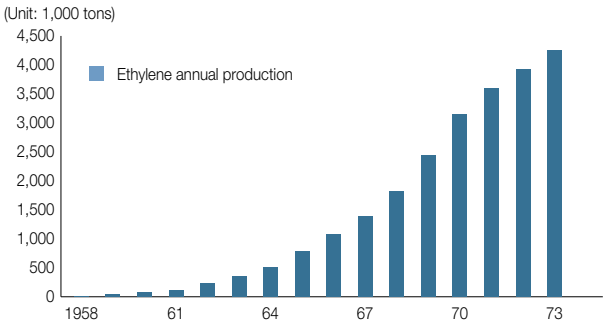
The first petrochemical products were produced in the United States in 1920. Japan's petrochemical industry got its start thirty-seven years later, in 1957. By this time, Western countries had enormous petrochemical industries in place. Japan's Ministry of International Trade and Industry took the lead in making plans to catch up as quickly as possible.

In the first phase of Sumitomo Chemical's petrochemical business plan, the primary objective was the production of polyethylene. In July 1955, Sumitomo Chemical contracted with Imperial Chemical Industries Ltd. (ICI) of the United Kingdom to introduce the technology to produce low-density polyethylene. For ethylene, the technology of Stone & Webster Engineering Corp. of the United States was introduced in March 1956. In 1958, plants were completed in Ehime Prefecture. The ethylene plant had an annual capacity of 12,000 tons, and the polyethylene plant had a capacity of 11,000 tons.

During the second phase of Sumitomo Chemical's petrochemical business plan, annual ethylene production capacity reached 87,000 tons (August 1964) by capacity expansion. Additionally, an ethylene plant with an annual capacity of 40,000 tons was built in Ehime in January 1966, and this boosted polyethylene production capacity to 100,000 tons a year.

For propylene derivatives, Sumitomo Chemical introduced the polypropylene technology of Montecatini of Italy, and in November 1962, facilities with an annual capacity of 6,500 tons were completed. As demand for films and molded products increased, by April 1967, polypropylene production capacity had increased to 30,000 tons. A joint venture with the US Rubber Company in August 1963 resulted in Sumitomo Naugatuck Co., Ltd. (capital 955 million yen, 51% owned by Sumitomo Chemical). This took Sumitomo Chemical into the field of acrylonitrile butadiene styrene (ABS) resin.

Japan ethylene production (1958 to 1973)



Source: A booklet issued by Japan Petrochemical Industry Association

Acrylonitrile is used to make synthetic fiber, and in January 1959, a plant to produce acrylonitrile using acetylene process was completed in Ehime. Later, Sumitomo Chemical switched to the Sohio process, which uses propylene and ammonia as raw materials, when a plant with an annual capacity of 15,000 tons was completed in September 1964. In September 1963, aiming to produce caprolactam (an intermediate of nylon), Sumitomo Chemical formed Japan Lactam Ltd. (capital 900 million yen) with Teijin Ltd. and Kureha Spinning Co., all three contributing equally. In April 1965, a plant was built that could produce 18,000 tons

Polyethylene plant (Ehime)

a year. Production of the by-product ammonium sulfate came to over 52,000 tons a year, which led to a reduction in the total costs of production of ammonium sulfate for Sumitomo Chemical. By March 1968, production capacity of caprolactam was increased to 40,000 tons a year and Sumitomo Chemical, at the same time, became self-sufficient in cyclohexane, the raw material for caprolactam, with the construction of a plant for cyclohexane. Ahead of this event, in May 1967, a new BTX (benzene, toluene, and xylene) plant in Ehime was added to produce raw materials for cyclohexane, alkylbenzene for synthetic detergent, TDI—the material used to make urethane—and other products.

A Petrochemical Complex in Chiba

When the new phase of the government's petrochemical plan began in 1965, approval standards set by the government required new ethylene production plants to have production capacity of at least 100,000 tons a year. In April 1965, Sumitomo Chemical submitted plans for a petrochemical complex in Chiba that included an ethylene plant with annual production capacity of 120,000 tons. With the aim of achieving efficient operations at the new plant, Sumitomo Chemical decided it should be operated as a separate company. Sumitomo Chiba Chemical Co., Ltd. (capital 1 billion yen) was established in November 1965 as a 100% subsidiary company. (It merged with Sumitomo Chemical in January 1975.) Toward the planned annual production capacity of ethylene of 120,000 tons, Sumitomo Chemical in April 1967 constructed plants with a total annual capacity of 70,000 tons and by November 1968, all of the facilities were completed, enabling the targeted production capacity of 120,000 tons.

Meanwhile, the world was experiencing a petrochemical boom. New ethylene plants were planned or constructed, most on a large scale of 300,000 to 500,000 tons. In June 1967, government approval standards for new ethylene plant capacity increased to 300,000 tons. In January 1970, Sumitomo Chiba Chemical and Tonen Sekiyu Kagaku, on a rotating investment basis following the administrative guidance of the government, built an ethylene plant in Chiba that had an annual capacity of 300,000 tons. This gave Sumitomo Chiba Chemical a total capacity of 420,000 tons. When the capacity of the Ehime facilities was added, the annual capacity was 531,500 tons.

Looking at the main derivatives, by January 1972, Sumitomo Chiba Chemical's production capacity of polyethylene increased to 130,000 tons. Production capacity of polypropylene increased to 90,000 tons by the end of 1970. Using ethylene instead of acetylene to make polyvinyl chloride, the process created a brisk demand for ethylene. Polymerization facilities constructed in October 1967 had a production capacity of 20,000 tons of polyvinyl chloride a year. Additional facilities built in August 1970 had a production capacity of 30,000 tons, for a total 50,000-ton capacity. In December 1969, Sumitomo Chemical, Denki Kagaku Kogyo (DENKA), and three other companies established Chiba VCM Co., Ltd. (capital 300 million yen, with Sumitomo Chemical owning 28%). In January 1971, the company constructed a plant with an annual capacity of 160,000 tons of vinyl chloride monomer. The product was provided to its shareholding companies.

In October 1968, facilities to produce styrene monomer were completed. To supply the facilities with the necessary raw material, benzene, a BTX plant was built in September of the same year.

More plants were added for new fields: EPDM (ethylene propylene diene methylene linkage) in November 1969, SBR (styrene-butadiene rubber) in August 1971, and EVA (ethylene-vinyl acetate) emulsion in January 1970.

In the petrochemical industry, new facilities with large capacities were built to increase global competitiveness. To this end, Sumitomo Chemical and nine other companies established Higashi-Nihon Methanol Co. in September 1968 (capital 500 million yen, Sumitomo Chemical 50% shareholder). In November of that same year, Sumitomo Chemical, Seitetsu Kagaku Co., Ltd., Showa Denko K.K., and Nissan Chemical Industries, Ltd. established Nihon Ammonia Co., Ltd. (capital 1 billion yen, Sumitomo Chemical 28% shareholder). In April 1971, the company built the largest ammonia plant in the world, with a capacity of 1,550 tons a day.

Start-up ceremony for ethylene plant in Chiba

BTX plant and styrene monomer plant (Chiba)

9 Dealing with the Oil Crises

In the 1970s, the Japanese petrochemical industry was hit hard by two oil crises. In 1983, Sumitomo Chemical ceased the production of most petrochemicals in the Ehime Works and relocated the production to the Chiba Works, where Sumitomo Chemical had newer and more efficient facilities. At the same time, Sumitomo Chemical disposed of redundant facilities, based on the Designated Industries Structural Revision Extraordinary Measures Law (Industry Restructuring Law). It was a difficult period of restructuring and Sumitomo Chemical did everything it could to survive.

Chiba Works

Measures for Business Improvement

In October 1973 when the first oil crisis hit, Japan was in the most severe position of all the developed countries because it depended on the Middle East for 82% of its petroleum. Before the crisis, the market price of crude oil was US$2.63 a barrel. By January 1974, it was four times as expensive at US$10.46. Consumer prices increased by 21.8% year-on-year. Costs rose for almost all industries. The situation was serious. Beginning in the fall of 1974, there was a rapid increase in corporate bankruptcies, temporary layoffs, workforce reductions, and salary cuts. Japan's petrochemical industry had its era of rapid growth thanks to the low price of petroleum, and now it faced an unprecedented emergency situation as profits deteriorated. In 1975, Sumitomo Chemical's profitability was weakened as high cost of petroleum necessitated additional operating funds, resulting in higher financing charges that burdened earnings.

In the midst of the crisis, Japanese manufacturers did their best to save energy and cut operating costs. In 1974, Japan's GDP recorded negative growth of 0.6% but it recovered to 2.9% in 1975, and followed with a period of stable growth, 4 to 5% increases, from 1976 to 1979.

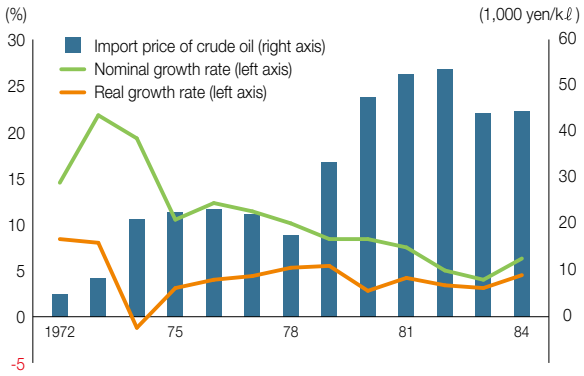
Then the second oil crisis hit in January 1979. In April 1980, the posted price of crude oil had leaped to US$28 a barrel. Sumitomo Chemical had just succeeded in recovering from the impact of the first crisis when, in FY 1981, it once again experienced weakened profitability and, in FY 1982 registered large losses.

In the midst of the recession, Japanese manufacturing industries were doing their best to conserve energy and cut costs. Up to the oil crises, the manufacturing industry had invested heavily in new facilities to meet rising demand. When demand cooled off, industries were faced with an excess of production facilities. Materials industries, etc., dependent on large amounts of energy, found it difficult to restructure with the remainder of Japan's economy. While the Japanese economy experienced a gentle recovery, beginning in 1975, many of the energy-dependent industries were unable to keep pace. In May 1978, the Temporary Measures for Stabilization of Specified Depressed Industries Law went into effect to allow industries suffering from the recession to recover by disposing of facilities and forming "rationalization cartels." Some of the industries that were included were open-arc furnaces (steel making), aluminum smelting, synthetic fiber, and shipbuilding. In addition, in May of 1983, the Designated Industries Structural Revision Extraordinary Measures Law (Industry Restructuring Law) was introduced and applied to industries such as electric furnaces (steel making), aluminum smelting, synthetic fiber manufacturing, chemical fertilizer manufacturing, petrochemical production, and others. Consequently, it affected Sumitomo Chemical's aluminum smelting, chemical fertilizer, and petrochemical businesses.

In September 1977, Sumitomo Chemical formulated its own measures for total improvement of business, and began to work on the following five areas.

(1) Reorganization of business fields and consolidation of facilities
(2) Streamlining of organization
(3) Cutting of labor costs
(4) Energy conservation

Growth of Japanese economy and import price of crude oil (CIF) (1972 to 1984)



Source: *1999-2000 Yearbook of Energy Sources*, supervised by Agency for Natural Resources and Energy
Long-term Economic Statistics (1999), Cabinet Office

(5) Rationalization of research divisions

Of these, (1) had already been accomplished in July 1976 for the aluminum business by forming a separate company, so the focus this time was on the petrochemical field. As for (3), from 1975 to 1983, personnel costs were cut in four phases of restructuring, which entailed dispatching employees to other companies, leaving positions of retired employees unfilled, and controlling the number of new hires. Unfortunately, these large-scale personnel reduction efforts were not sufficient, and from November 1982 to February 1983, an early retirement program had to be implemented. The result was that the workforce was reduced by 7,400 employees. 15,210 employees (not including those assigned to other companies) at the end of 1975 were reduced to 7,803 by the end of 1983. Concerning (4), energy conservation plans were pursued in three stages from 1977 to 1984 and an aggregate total of 44% reduction in energy was achieved, compared with the enegy consumption volume of 1976.

Concentrating Petrochemical Manufacturing in Chiba and Continued Rationalization

With the aim of integrating the petrochemical business, Sumitomo Chemical merged with Sumitomo Chiba Chemical Co., Ltd. and launched the Chiba Works in January 1975. Since the policy for business restructuring was "establishing the optimal manufacturing system," production was concentrated at the Chiba Works.

Specifically, along with the closing of the Chiba No. 1 Ethylene Plant (October 1976, annual production capacity of 130,000 tons), Sumitomo Chemical also closed the No. 2 Ethylene Plant at the Ehime Works (annual production capacity of 65,000 tons) because output was small and the facilities were aging. On the other hand, in December 1977, Sumitomo Chemical decided to increase the production capacity of the Chiba No. 2 Ethylene Plant from 300,000 tons a year to 330,000 tons. As for polyethylene, of the three production lines at the Ehime Works, No. 1 and No. 3 plants stopped producing a total of 40,000 tons and as a result, total production capacity at the Chiba and Ehime Works was reduced to a total of 205,000 tons. Additional capacity for ethylene at the Chiba Works was completed in November 1978, and the facilities at the Ehime Works ceased production in April 1979.

In June 1983, disposing of the ethylene facilities according to the Industry Restructuring Law was decided, and all Sumitomo Chemical facilities at the Ehime Works and part of the facilities at the Chiba Works, a total of 224,400 tons, were planned to be scrapped. In January 1983, the Ehime Works had already stopped production of ethylene, its derivatives and BTX in accordance with the petrochemical business restructuring and rationalization plan of October 1981. After this, the production of ethylene and its main derivatives was concentrated at the Chiba Works.

As for polyvinyl chloride, in October 1981, agreements were made among seventeen companies to form four groups, with each establishing a joint-sales company to handle its sales. Approval of the Japan Fair Trade Commission for this arrangement was received in March 1982, and Sumitomo Chemical, Kureha Chemical Industry Co., Ltd., Sun Arrow Chemical Co. and Zeon Corporation established Dai-Ichi Vinyl Sales Corporation (capital 90 million yen, 25% owned by Sumitomo Chemical). In addition, in June 1983, under the Industry Restructuring Law, excess facilities were scrapped. Of the reactor volume of 686m^3 owned by Sumitomo Chemical, 193m^3 at the Ehime Works were scrapped.

In June 1983, polyolefin (polyethylene and polypropylene) was also specified under the Industry Restructuring Law. Seventeen companies producing polyolefin set up four joint-sales companies. Sumitomo Chemical, with Ube Industries, Ltd., Toyo Soda Manufacturing Co., Ltd., Chisso Corporation, Tokuyama Soda Co., Ltd., and Nissan Maruzen Polyethylene Co., Ltd. established Union Polymer Co., Ltd. (capital 400 million yen, 18% owned by Sumitomo Chemical) in June 1983. The scrapping of excess facilities continued. Sumitomo Chemical disposed of 96,000 tons of polyethylene facilities at the Ehime Works and 26,000 tons at the Chiba Works.

Concerning ammonia and methanol, Japanese products, which depended on naphtha and other petroleum-based materials, lost their competitiveness both in Japan and abroad to foreign products that used low-priced natural gas as a raw material. In 1976, operations at Nihon Ammonia Co., Ltd. were stopped and the company was liquidated in December 1981. Ammonia production was discontinued at the Ehime Works in November 1985, and Higashi-Nihon Methanol Co. Ltd. was liquidated in June 1984.

Facility processing according to Industrial Restructuring Law (1983)

(unit: 1,000 tons)

	All-Japan		Sumitomo Chemical	
	Facility capacity	Capacity eliminated	Facility capacity	Capacity eliminated
Ethylene	6,347	2,031	569	224
Polyvinyl chloride	2,010	450	686m^3	193m^3
Polyethylene	2,755	850	286	122

Note: Polypropylene was excluded from capacity elimination

Higashi-Nihon Methanol Co., Ltd. (Chiba)

Nihon Ammonia Co., Ltd. (Chiba)

10 Rise and Decline of Aluminum Business

The production of aluminum increased during the wartime years when there was military demand. Thereafter, the business expanded greatly during the period of rapid economic growth in Japan thanks to private demand. The two oil crises, however, dealt the aluminum industry a fatal blow because they led to a sharp rise in the price of electricity. Sumitomo Aluminium Smelting Co., Ltd. stopped all business activity in 1986. After that, Sumitomo Chemical began to import aluminum ingots produced by overseas projects in which Sumitomo Chemical participated and to function as an aluminum supplier, actively developing business in fine alumina, high-purity alumina, and high-purity aluminum. Even today, the businesses stemming from aluminum form one of the pillars of the Basic Chemicals Sector.

Soederberg-style electrolytic furnaces (Ehime)

Start of Aluminum Business

Sumitomo Chemical first entered the aluminum business in 1932, when Sumitomo Goshi Kaisha commissioned Sumitomo Chemical to conduct a trial production of alumina, the main raw material for aluminum. The objective was to confirm the technology required to make alumina from alunite. Based on these trials, Sumitomo Chemical developed its own alumina manufacturing method.

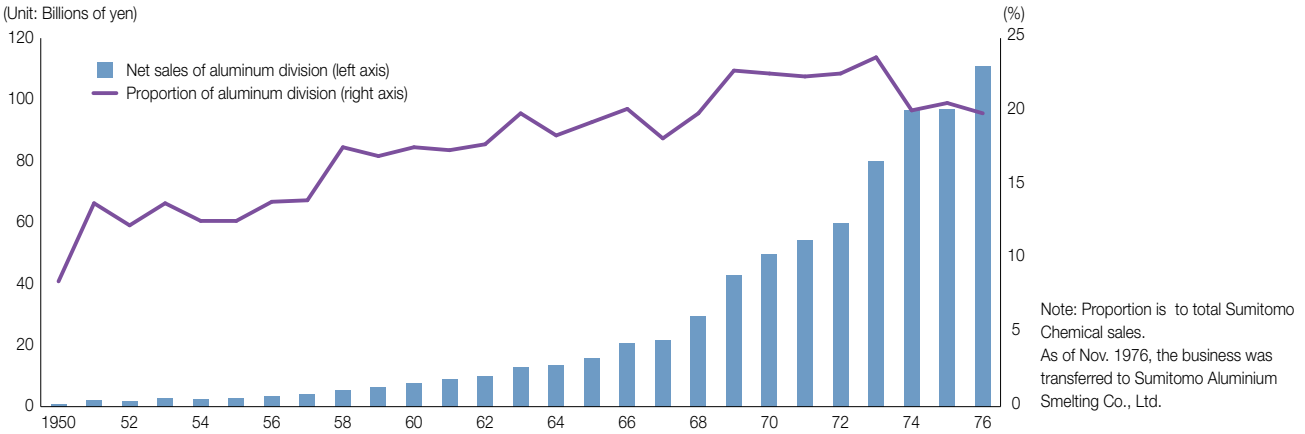
In June 1934, Sumitomo Goshi Kaisha and Asada Alum Manufacturing Goshi Kaisha jointly established Sumitomo Aluminium Smelting Co., Ltd. (capital 10 million yen, 75% owned by Sumitomo). Located in Ehime, Sumitomo Aluminium Smelting began by building a first-stage plant that could produce 1,500 tons a year. Operations began in February 1936. Along with alumina, Sumitomo Chemical aimed to supply cryolite used for aluminum smelting, and in June 1936, it completed a cryolite plant that could produce 300 tons a year.

The alumina made from alunite, however, was of poor quality and the cost was high. In June 1937, Sumitomo Chemical switched to the Bayer process, which made alumina from bauxite. In February 1938, production began on a scale of five tons a day. In January 1939, production capacity had increased to 4,500 tons a year.

Military demand for aluminum increased, including a need for airplane production. Sumitomo Aluminium Smelting built a second factory in March 1940 with an annual production capacity of 8,000 tons, and a third one in September 1942 with a capacity of 10,000 tons. To drastically reform the system of producing aluminum from bauxite in an integrated manner, the managing of the operation of Sumitomo Aluminium Smelting was assigned to Sumitomo Chemical in June 1944.

Alumina deposition tanks (Ehime)

Net sales of aluminum division



Note: Proportion is to total Sumitomo Chemical sales.
As of Nov. 1976, the business was transferred to Sumitomo Aluminium Smelting Co., Ltd.

Business Expansion During the Period of Japan's Rapid Economic Growth

After the war, the production of aluminum did not start until July 1948, two months after bauxite-to-alumina production finally resumed in May 1948. In August 1949, plans to rebuild facilities were approved and, in November, Sumitomo Chemical acquired all of the facilities of Sumitomo Aluminium Smelting.

In 1950, after war broke out in Korea, it brought about a temporary economic boom in Japan, which increased the production of aluminum. Additionally around that time, new aluminum applications, such as materials for buildings, trains and ships, were developed and they gradually increased the demand for aluminum in Japan. Beginning in the latter half of the 1950s, the period of Japan's rapid economic growth resulted in dramatic leaps forward in the aluminum business. From 1955 to 1970, annual net sales of aluminum surged from 2.7 billion yen to 49.8 billion yen, an average annual growth of 21.4%.

In July 1961, a plant was built in Nagoya (Nagoya Works) at the request of Sumitomo Metal Industries, Ltd. Sumitomo Light Metal Industries, Ltd. acquired the aluminum rolling division of Sumitomo Metal Industries, so Sumitomo Chemical's plant was built on land adjoining that of Sumitomo Light Metal Industries to supply it with aluminum that had been smelted. The Nagoya Works, with a first-phase capacity of 15,000 tons per year, began production in August 1961. All of the facilities were completed in December 1964, providing an annual production capacity of 46,500 tons.

Looking at the alumina plant from the bauxite storage area (Ehime)

Subsequent plans were for an aluminum plant with a 68,000-ton annual capacity to be built in Isoura in Ehime Prefecture. In June 1967, the first-phase facilities were built with an annual production capacity of 17,000 tons. All of the Isoura Plant facilities were completed in November 1969. They were capable of producing 76,000 tons a year. The result was that Sumitomo Chemical's annual production capacity had expanded to 156,000 tons, and Sumitomo Chemical was still struggling to meet demand.

To keep pace with demand, Sumitomo Chemical obtained 330,000m^2 of land in the Toyama-shinko Seaside Industrial Zone in September 1968 to build a plant that could produce 168,000 tons of aluminum a year. In February 1970, the first half of the first-phase facilities of the Toyama Works began operation at 28,000 tons a year. In October 1973, 180,000-ton-a-year facilities were completed.

To prepare for growing demand, in February 1970, the decision was made to construct a plant with an annual capacity of 300,000 tons in Toyo in Ehime Prefecture. In March 1975, the first half of the first-phase facilities with an annual capacity of 50,000 tons was completed. A prominent feature of this factory was the world's largest pre-baked-style electrolytic furnace, operating on 175,000 amperes. The furnace was developed by Sumitomo Chemical. The second half of the first-phase facilities was completed in April 1976, providing an annual capacity of 100,000 tons in total. The plant was operated by Sumitomo Toyo Aluminium Smelting Co., Ltd. (capital 3 billion yen, 100% owned by Sumitomo Chemical), established in

Sumitomo Toyo Aluminium Smelting Co., Ltd.

August 1974.

End of Domestic Smelting After Oil Crises

Sharp rises in the price of electricity due to the oil crises had a direct impact on the cost of producing aluminum, which was heavily dependent on electricity for its production. The Japanese aluminum smelting industry lost international competitiveness, turning it from a growth industry into a depressed industry with an excess of inventory and facilities.

Operation of the Toyama Works third-phase facilities (completed in October 1973) was postponed. Sumitomo Chemical reduced aluminum production by 25% in November 1974 and lowered the operating rate to 65% in February 1975. The major portion of the facilities of Sumitomo Toyo Aluminium Smelting, completed in March 1975, failed to even begin production.

In the midst of this difficult environment, Sumitomo Chemical separated its aluminum business into an independent entity, establishing Sumitomo Aluminium Smelting Co., Ltd. in July 1976. The combined production capacity of Sumitomo Aluminium Smelting and Sumitomo Toyo Aluminium Smelting was 414,000 tons a year, the largest in Japan and the seventh highest in the world.

Japanese aluminum production reached a record high in 1977, and began its decline in 1978 as cheap imports flooded the market. In 1978, the aluminum industry created its first rationalization cartel according to the Temporary Measures for Stabilization of Specified Depressed Industries Law, and Sumitomo Aluminium Smelting drastically reduced production. In January 1979, after the second oil crisis, a stabilization plan was announced based on the Temporary Measures for Stabilization of Specified Depressed Industries Law, and aluminum electrolytic furnaces with total production capacity of 530,000 tons were decided to be scrapped. In March 1979, Sumitomo Aluminium Smelting closed all of its Nagoya Works facilities and part of its facilities at the Toyama Works.

In January 1981, Sumitomo Aluminium Smelting merged with Sumitomo Toyo Aluminium Smelting. The new company, with the name Sumitomo Aluminium Smelting Co., Ltd., had capital of 18 billion yen (50% owned by Sumitomo Chemical).

The strained circumstances of the aluminum smelting industry continued. In March 1982, the operations at the Isoura Plant were discontinued, followed by the Toyo Plant (the former Sumitomo Toyo Aluminium Smelting) in December 1984. In July 1986, Sumitomo Chemical decided to withdraw from all domestic aluminum smelting and in October stopped the operations at the Toyama Plant. This was the last plant operated by Sumitomo Aluminium Smelting, and the company was liquidated in December 1986.

The Asahan Project and Imports of Aluminum from Overseas Projects

Except for one aluminum smelting company run on hydroelectricity it generated itself, all aluminum smelting in Japan had disappeared by 1987. In contrast, concerning overseas production, Sumitomo Chemical

Opening ceremony for P.T. Indonesia Asahan Aluminium

Sumitomo Chemical's aluminum smelting operations (1979 to 1986)

(Unit: tons)

	Mar. 1979		Mar. 1982		Dec. 1984		Oct. 1986	
	Facilities not in operation	Remaining capacity	Facilities not in operation	Remaining capacity	Facilities not in operation	Remaining capacity	Facilities not in operation	Remaining capacity
Nagoya Works	52,796	0						
Isoura Plant		78,980	78,980	0				
Toyo Plant		98,712		98,712	98,712	0		
Toyama Works	59,227	118,454	35,537	82,917		82,917	82,917	0
Total	112,023	296,146	114,517	181,629	98,712	82,917	82,917	0

Note: The Toyo Plant was Sumitomo Toyo Aluminium Smelting Co., Ltd. until Jan. 1981.

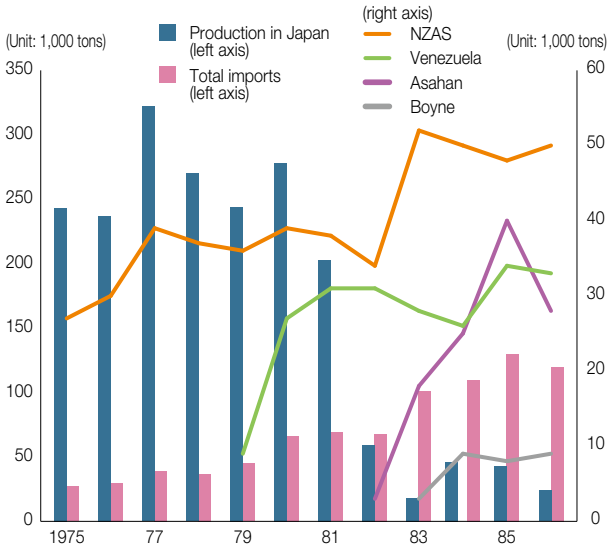
Sigura-gura Dam power generator, P.T. Indonesia Asahan Aluminium

had success in overseas aluminum smelting projects, beginning with the Asahan Project in Indonesia.

The Asahan Project was designed to utilize the rich hydroelectric resources in North Sumatra, and the government of Indonesia took the lead in promoting the construction of an aluminum smelting factory that could produce 225,000 tons a year. Sumitomo Chemical decided to get involved with this project in 1969 and promoted it as the lead underwriter of the Japanese side. In 1975, the Japanese government agreed to provide loans, making it a national project on both sides. The first-phase facilities had an annual capacity of 75,000 tons and were completed in January 1982. In November 1984, a ceremony was held to commemorate the completion of all of the facilities.

New Zealand Aluminium Smelters (NZAS) plant

Sumitomo Aluminium Smelting Co., Ltd. production in Japan and volume imported (1975 to 1986).



Meanwhile, the NZAS Project in New Zealand was led by Comalco Industries Pty. Ltd. of Australia. In February 1969, New Zealand Aluminium Smelters Ltd. (NZAS) was established. Sumitomo Chemical provided 25% of the investment. In April 1971, the first-phase plant with a 75,000-ton annual capacity was completed. Aluminum ingots were first accepted by Sumitomo Chemical in January 1972. Since business was accepted on a cost basis, it was particularly competitive among aluminum produced in overseas projects. In July 1996, annual capacity reached 313,000 tons (of which 64,600 tons were allotted to Sumitomo Chemical).

Another national project was the Amazon undertaking, for which the Brazilian government began seeking participants in August 1973. Japan's participation was funded by the Overseas Economic Cooperation Fund. The resources of the Amazon River Basin were to be used to operate an alumina plant with an annual capacity of 800,000 tons and an aluminum plant with a 320,000-ton capacity. In the end, Japanese participants withdrew from the alumina plant plan. The first phase of the aluminum plant (annual capacity 160,000 tons) began operations in July 1985, with the second-phase plant (same capacity) starting in 1990.

Participation in other international projects included a joint venture for aluminum smelting in the Guayana region of Venezuela in December 1973 (annual capacity 280,000 tons, Sumitomo Chemical investment 4%) and an aluminum smelting joint venture on Australia's Boyne Island (annual capacity 206,800 tons, Sumitomo Chemical investment 4.5%) with Comalco Limited in April 1978. Operation at the former began in February 1978 and for the latter in February 1982.

11 Construction of Singapore Petrochemical Complex

The Singapore petrochemical project was Sumitomo Chemical's first overseas project in petrochemicals. It was of great significance for both Sumitomo Chemical and the Singapore government to establish a petrochemical base in Singapore with access to cheaper naphtha than in Japan and centered in the Southeast Asian market with its growing demand. The expansion into Singapore provided Sumitomo Chemical with valuable knowhow and experience in facing new challenges as Sumitomo Chemical moved toward full-scale globalization.

Singapore Petrochemical Complex around 2008

Promotion of the Singapore National Project

The Singapore petrochemical project commenced in December 1971 when Sumitomo Chemical received a request for cooperation from the Singapore government. Sumitomo Chemical expected this project to enable it to secure an inexpensive supply of naphtha and a production base for expansion into the Southeast Asian market. The project paved the way for further globalization.

In January 1975, Sumitomo Chemical concluded a basic agreement with the Singapore government to construct a petrochemical complex centered on an ethylene plant with an annual production capacity of 300,000 tons. In the meantime, a global recession was triggered by the first oil crisis, and the future of petrochemical businesses became uncertain. Despite this, Sumitomo Chemical was committed to making a success of the Singapore project. Sumitomo Chemical approached the Japanese government and Japan's petrochemical industry, making strong efforts to get their support and cooperation to promote the project as a national project. Although negotiations often entailed difficulties, Sumitomo Chemical finally secured their agreement to support the project as a national project.

In July 1977, a Japan-based investment company was established with the support of the Overseas Economic Cooperation Fund (OECF) and a total of twenty-three companies from Japan including eleven petrochemical companies. In August of the same year, the Petrochemical Corporation of Singapore (Pte.) Ltd. (PCS) was launched as the local ethylene center company. In 1980, two Japan-based investment companies were established with plans to produce derivatives such as polyethylene, polypropylene, and ethylene glycol. In Singapore, three companies in 1980 and one company in 1982 were respectively established to produce derivatives.

In early 1983, the PCS ethylene plant and some of the derivatives plants were completed, but amid glob-

First phase of Singapore petrochemical project

	First phase	Founded	Products at time of plant completion	Main investors*
Investing company on Japan side	Japan-Singapore Petrochemicals Company Limited (JSPC)	July 1977		Sumitomo Chemical 46.2%, Overseas Economic Cooperation Fund 20%
Investing company on Japan side	Nihon Singapore Polyolefin Co., Ltd (NSPC)	March 1980		Sumitomo Chemical 78.57%
Investing company on Japan side	Japan Singapore Ethylene Glycol Company (JSEC)	May 1980		Mitsubishi Petrochemical Co., Ltd. 28%, Nippon Shokubai Kagaku Kogyo Co., Ltd. 26%, Mitsui Petrochemical Industries, Ltd. 26%
Local company	Petrochemical Corporation of Singapore (Pte.) Ltd. (PCS)	Aug. 1977	Ethylene 300,000 tons, Propylene 160,000 tons, Butadiene 45,000 tons, BTX 126,500 tons	JSPC 50%, Singapore government 50%
Local company	The Polyolefin Company (Singapore) Pte. Ltd.(TPC)	May 1980	Low-density polyethylene 120,000 tons, Polypropylene 100,000 tons	NSPC 70%, Singapore government 30%
Local company	Phillips Petroleum Singapore Chemicals (Private) Limited (PPSC)	April 1980	High-density polyethylene 80,000 tons	Phillips Petroleum Company 60%, Singapore government 30%, Sumitomo Chemical 10%
Local company	Denka Singapore Private Limited (DSPL)	Sept. 1980	Acetylene black 5,200 tons	Denki Kagaku Kogyo (DENKA) 80%, Singapore government 20%
Local company	Ethylene Glycols (Singapore) Private Limited (EGS)	April 1982	Ethylene oxide 80,000 tons, Ethylene glycol 87,500 tons	JSEC 50%, Singapore government 28%, Sumitomo Chemical 2%

* Percentage of shareholding is as of Jan. 27, 1984, except JSEC (as of May 1980) and EGS (as of April 1982).

Start-up ceremony for first phase PCS

al economic confusion due to the second oil crisis, commercial operations did not begin until February 1984. In February 1985, all facilities for the first phase of the project were completed and the Singapore Petrochemical Complex went into full-scale operation.

Start of the Second Phase

In 1987, the Singapore government decided to move forward with the privatization of state-owned enterprises in hopes of better growth for capital markets and more efficient use of funds, and indicated an intention to sell all government-owned shares in the Singapore petrochemical project to the Shell Group. The wishes of the Singapore government were ultimately respected, and an agreement reached whereby it handed over its stakes in PCS and the derivatives production companies. As a result, the Singapore government holdings—50% of issued shares of PCS, 30% of The Polyolefin Company (Singapore) Pte. Ltd., and 50% of Ethylene Glycols (Singapore) Private Limited—were transferred to the Shell Group.

Along with the development of Asian economies, the petrochemical business in Singapore also advanced and, since 1985, PCS and the derivatives production companies have been in full operation. As demand for petrochemical products was anticipated to continue to increase in the Asian region, in December 1994, Sumitomo Chemical and the Shell Group as central players embarked on the second phase of the Singapore petrochemical project.

After two years of construction work, in April 1997, the ethylene plant in the second phase (annual production capacity of 515,000 tons) started operation. Combined with the first-phase capacity, total annual production capacity reached 965,000 tons, making the Singapore complex the largest of its kind in Southeast Asia.

In May 2000, a new condensate splitter was built in collaboration between PCS and Shell Eastern Petroleum Ltd. to diversify the sources of the raw material, naphtha, and secure its stable supply. As for the production of derivatives, in October 2006, the linear low-density polyethylene plant was converted to make higher value-added polypropylene and total annual production capacity increased to 650,000 tons. In December 2013, the Sumitomo Chemical Group built a plant to produce solution polymerization styrene-butadiene rubber, a raw material for high-performance, fuel-efficient tires. At the same time, PCS is in the process of constructing a facility to increase production of butadiene (annual production capacity of 100,000 tons) and its completion is scheduled for the second quarter of 2014.

Methyl methacrylate (MMA) business in Singapore

In the second phase of the Singapore petrochemical project, new businesses were added, such as the production of methyl methacrylate (MMA) and acrylic acid. MMA monomer is used in cast sheets, cultured marble, MBS resin, transparent ABS resin, etc., and its demand was beginning to grow rapidly in the Southeast Asian market.

New plants were constructed in Pulau Sakra—an island adjacent to Pulau Ayer Merbau, the island on which PCS's ethylene center is located—and connected by pipeline to PCS. Sumitomo Chemical Singapore Pte Ltd was established to manage the MMA business, while production of MMA monomer and polymers, acrylic acid, etc. was undertaken by its two wholly-owned subsidiary companies as well as four joint-venture companies.

In the mid-2000s, the rapid increase in demand for MMA polymers used in IT-related products, such as liquid crystal displays and projection television, led to an expansion of the MMA market, with annual market growth rate exceeding 7%. To meet this demand, MMA polymer production was bolstered in August 2004. This was followed by a second plant and a third one for MMA monomer in August 2005 and in January 2008, and a second plant and a third one for MMA polymers in December 2007 and in July 2012 respectively.

Second phase of Singapore petrochemical project

	Second phase	Start of operations	Products at time of plant completion	Investors
Local company	Petrochemical Corporation of Singapore (Pte.) Ltd. (PCS)	April 1997	Ethylene 515,000 tons, Propylene 258,000 tons, Butene-1 32,000 tons, MTBE 66,000 tons, BTX 217,000 tons	JSPC 50% Shell Group 50%
Local company	The Polyolefin Company (Singapore) Pte. Ltd. (TPC)	March 1997	Low-density polyethylene 70,000 tons, Linear low-density polyethylene 120,000 tons, Polypropylene 120,000 tons	NSPC 70% Shell Group 30%
Local company	Phillips Petroleum Singapore Chemicals (Private) Limited (PPSC)	May 1997	High-density polyethylene 200,000 tons	Phillips Petroleum Company 50%, Singapore government investment company 30%, Sumitomo Chemical 20%
Local company	Denka Singapore Private Limited (DSPL)	May 1997	Acetylene black 6,000 tons	Denki Kagaku Kogyo (DENKA) 100%
Local company	Hoechst Acetyls (Singapore) Pte. Ltd. (HASL)	July 1997	Vinyl acetate 170,000 tons	Hoechst Group 100%
Local company	Seraya Chemicals Singapore Private Limited (SCSL)	April 1997	Styrene monomer 315,000 tons, Propylene oxide 140,000 tons	Shell Group 70%, Mitsubishi Chemical 30%

12 Separation of Pharmaceutical Business from Sumitomo Chemical and Inauguration of Dainippon Sumitomo Pharma Co., Ltd.

Since the 1980s, the environment surrounding the pharmaceutical business increased in severity. In a bid to improve efficiency, and flexibility in all areas (including production, sales, and research), Sumitomo Chemical and Inabata & Co., Ltd. separated and merged their pharmaceutical business to found Sumitomo Pharmaceuticals Co., Ltd. in 1984. In 2005, Sumitomo Pharmaceuticals acquired Dainippon Pharmaceutical Co., Ltd. in a merger to strengthen its business foundation in Japan and to improve its global expansion. Thus Dainippon Sumitomo Pharma Co., Ltd. was born.

Press conference to announce reaching of basic agreement among Sumitomo Pharmaceuticals, Dainippon Pharmaceutical, and Sumitomo Chemical on the merger

Founding Sumitomo Pharmaceuticals Co., Ltd.

At the beginning of the 1980s, the Japanese government attempted to control medical costs covered by the health insurance system. The prices of drugs were cut 51.2% cumulatively and the insurance scheme was reformed, making the situation increasingly difficult for the Japanese pharmaceutical industry.

With this situation as background, Sumitomo Pharmaceuticals Co., Ltd. (SP) was established on February 6, 1984. The objective was to improve competitiveness in the pharmaceutical business through enhanced efficiency in research and development and improved flexibility in marketing. In October 1984, Sumitomo Pharmaceuticals commenced business with a capital of 5 billion yen. Sumitomo Chemical owned 60% and Inabata owned 40%. Sumitomo Chemical continued to produce active pharmaceutical ingredients and intermediates for SP.

The first major product was interferon. Sumitomo Chemical was licensed the manufacturing technology of interferon from The Wellcome Foundation Ltd. of the United Kingdom in August 1980. In September 1985, SP completed the Ehime Bio Plant, a factory for interferon production. In January 1987, SP obtained approval to make interferon for kidney cancer and multiple myeloma and, in April of that year, sales began under the product name Sumiferon. In 1992, demand for the drug increased when it was approved for use for Hepatitis C. Sales for 1992 and 1993 reached 40 billion yen in each year. Sumiferon thus became a driving force for growth of SP.

Pfizer Corporation of the United States and SP signed a cross-licensing contract in March 1987. SP granted Pfizer a license to use the substance patent of Sediel, an anxiolytic. In December 1993, SP developed Amlodin, a drug for hypertension and angina pectoris, using Pfizer's substance patent. Amlodin became a major product of SP, with sales exceeding 40 billion yen in 2003.

Another major product was Meropen, a carbapenem antibiotic, launched in September 1995.

Ehime Bio Plant

Plant for Meropen active ingredients (Oita)

Meropen was recognized for its excellent efficacy and it became the top selling carbapenem antibiotic in Japan in December 2004.

Concerning the production system, SP added new facilities for producing active ingredients and a new building for Meropen formulation in Oita in order to comply with internationally recognized good manufacturing practices (GMP), to contribute to sales expansion and to new product launchings through enhanced production facilities. These facilities were completed in September 2003. The existing facilities for active pharmaceutical ingredient production were converted to an exclusive plant for Meropen active ingredients. The new plant was built as a multipurpose facility for many different drugs, such as Amlodin. At that point, the active ingredient production division was transferred to SP, which then became responsible for the entire production process, from active substances to formulation.

Birth of Dainippon Sumitomo Pharma Co.,Ltd.

The business environment in which the Japanese pharmaceutical industry operates has become increasingly challenging due to various factors, such as the government's continuing initiatives to restrain medication expenditure through periodic drug price cutting and other measures, the soaring R&D investment for drug development, and the intensifying competition with US and European mega pharmaceutical companies. Within this environment, in October 2005, Sumitomo Pharmaceuticals acquired Dainippon Pharmaceutical Co., Ltd. in a merger to strengthen its business foundation in Japan and to improve its global expansion, thus forming Dainippon Sumitomo Pharma Co., Ltd. Dainippon Pharmaceutical has its roots in Osaka Pharmaceuticals, which was established in May 1897. Osaka Pharmaceuticals subsequently in 1898 merged with Dainippon Pharmaceutical, the first pharmaceutical company in Japan, and took its name. The new Dainippon Sumitomo Pharma Co., Ltd. (DSP) became one of the top ten pharmaceutical companies in Japan. It employed 1,500 medical representatives, putting it on a par with the largest pharmaceutical companies in Japan. It had capital of 22.4 billion yen, with Sumitomo Chemical owning 50.1% (Subsequently in June 2014, DSP changed its name to Sumitomo Dainippon Pharma Co., Ltd.)

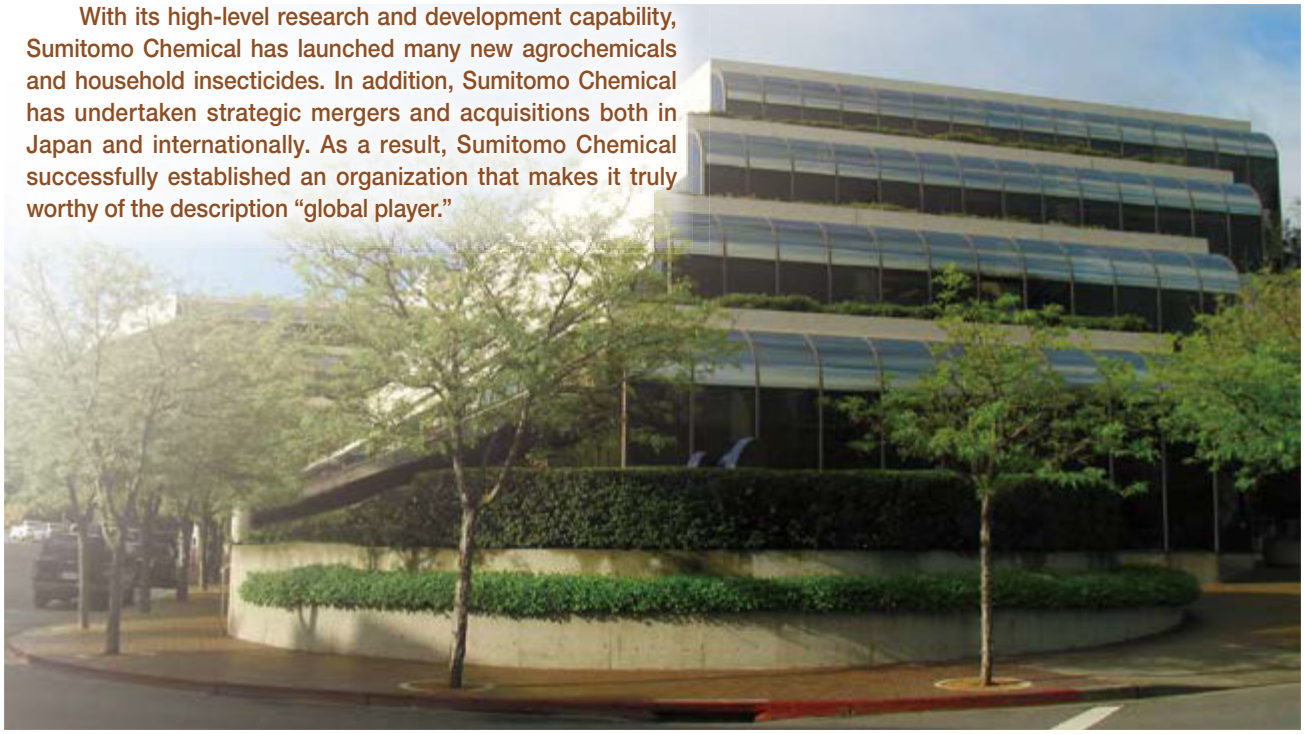
DSP put its emphasis on four main products: Amlodin, Gasmotin (a gastrokinetic agent), Prorenal (a vasodilator), and Meropen. It also began global development of drugs, centered around a drug for schizophrenia, named Latuda, of which Sumitomo Pharmaceuticals had begun pre-clinical trials in 1993. In order to prepare for sales of the product in the United States, DSP acquired Sepracor Inc. for US$ 2.6 billion in October 2009. In April 2010, Sepracor merged with Dainippon Sumitomo Pharma America, Inc., and the new company changed its name to Sunovion Pharmaceuticals Inc. in October of the same year. In December 2009, a new-drug application was made to the US Food and Drug Administration (FDA) to obtain approval of Latuda. The approval was granted in October 2010 and sales began in February 2011.

The next step was marketing Latuda in Europe. In March 2011, DSP made contracts for development and selling of Latuda in 26 EU countries (excluding the United Kingdom) and Russia and three other non-EU countries with Takeda Pharmaceutical Co., Ltd. The two companies developed it together, sharing the costs. Takeda Pharmaceutical got exclusive rights to sell the product, with the condition that it paid royalties to DSP based on the sales amount. Latuda was also approved by Health Canada in June 2012, and DSP began sales in that country in September of the same year.

Latuda

13 Expansion of Agricultural Chemicals Business

With its high-level research and development capability, Sumitomo Chemical has launched many new agrochemicals and household insecticides. In addition, Sumitomo Chemical has undertaken strategic mergers and acquisitions both in Japan and internationally. As a result, Sumitomo Chemical successfully established an organization that makes it truly worthy of the description "global player."



Head office of Valent U.S.A. Corp.

Product Line-up of Agricultural Chemicals Sector

Sumitomo Chemical's Agricultural Chemicals Sector has insecticides, herbicides, and fungicides in its line-up of agrochemicals, insecticides and insect repellants for household use, as well as feed additives such as methionine for raising livestock, especially poultry. Through these products, Sumitomo Chemical contributes to not only stable crop yields, increased food production, but also clean and healthy lifestyles.

In the agrochemical business, Sumitomo Chemical launched a big hit herbicide. It was flumioxazin, an herbicide that was registered for use on soybeans in Argentina in September 1993. After the registration in the United States, the world's largest market, in April 2001, demand rose dramatically from 2004 when it proved highly effective on weeds in soybean fields that had been difficult to control. Flumioxazin products are sold under the trade names of Sumisoya, Valor, and others. Under the alliance with Monsanto Co., Inc. entered in October 2010, flumioxazin products were applied to Monsanto's weed management program, which led to a great sales increase of flumioxazin.

Flumioxazin plant (Oita)

In the field of household insecticides, powerful products have been launched in Sumitomo Chemical's area of specialty, pyrethroids. In April 2002, Eminence was launched and proved extremely high mosquito knockdown efficacy compared with existing products. It is volatile at room temperature, and this characteristic realizes products with new concepts, such as non-heated fan devices for mosquito repellant and energy-free resin emanator.

Demand for methionine, a feed additive, grew as poultry consumption expanded in Europe, North America, China and Southeast Asia in the 1990s. To meet this demand, the Ehime Works increased annual production capacity to 19,000 tons in 1995. Subsequently a second plant was constructed in 1998 and a third in 2005. A fourth plant was completed in 2010, for a total production capacity of 140,000 tons a year. In addition, in 2012, a 20,000-ton-a-year plant was built in Dalian, China, making Sumitomo Chemical a global supplier with capacity of 160,000 tons a year.

New methionine plant (Ehime)

Strengthening the Foundation of Agrochemical Business in Japan

In its agrochemical business in Japan, Sumitomo Chemical positions itself as a total solution provider (TSP) and is making strong efforts to expand the sales into the non-crop use field. Sumitomo Chemical is also strengthening its business with mergers and acquisitions. Along with increasing the presence of Sumitomo Chemical in Japan through the sales channels acquired from Takeda Pharmaceutical, Sumitomo Chemical also expanded sales of acquired products by moving them into its global sales network. The integration of businesses therefore had enormous synergistic effects. The integration was handled in two stages. In November 2002, Sumitomo Chemical Takeda Agro Co., Ltd. (capital 9.38 billion yen, 60% owned by Sumitomo Chemical) was established to take over the Takeda Pharmaceutical agrochemical business, and in November 2007, it merged with Sumitomo Chemical.

As a TSP, Sumitomo Chemical provides not only products, such as agricultural chemicals, fertilizer, farming materials and seeds but also information and services. TSP supports all aspects of agriculture, from soil preparation and cultivation to transportation and sales of crops. As a part of TSP activities, SUMIKA FARM Nagano was established in May 2009, and subsequently, six other agricultural corporations were established in various areas in Japan. The corporations are experimenting in and verifying new agricultural technology, as well as growing selected crops such as strawberries, tomatoes and others.

SUMIKA FARM Nagano

Founding of agricultural corporations (2009 to 2013)

(Unit: Millions of yen)

Company name	Founded	Capital	Sumitomo Chemical ownership (%)	Main crops
SUMIKA FARM Nagano	May 2009	113.5	100%*	Strawberries
SUMIKA FARM Oita	Dec. 2009	300.0	100%*	Tomatoes
Sunrise farm Saijo	Aug. 2011	100.0	94%	Lettuce, cabbage
SUMIKA FARM Yamagata	Sept. 2011	63.0	79%	Tomatoes
SUMIKA FARM Mie	Nov. 2011	120.0	100%	Mitsuba
Sunrise farm Toyota	Feb. 2013	250.0	100%	Tomatoes
SUMIKA FARM Ibaraki	July 2013	40.0	90%	Cabbage

Note: Capital is as of September 2013. * Includes affiliate ownership.

Progress in Globalization

Since the launch of Sumithion, export sales had accounted for a large portion of Sumitomo Chemical's Agricultural Chemicals Sector, meaning overseas business has taken an important role for the sector. Moreover from the late 1980s, globalization has increased at a rapid pace, and Sumitomo Chemical now has production facilities and sales locations in many countries of the world.

In April 1988, Sumitomo Chemical established Valent U.S.A. Corp. as a joint venture (wholly owned by Sumitomo Chemical since 1991) with Chevron Chemical Company and was able to make a full-scale entry into the US market, the largest agrochemical market in the world. In January 2000, Sumitomo Chemical acquired a department for biological pesticides of Abbott Laboratories and established Valent BioSciences Corp.

Also in the major European countries, subsidiaries were established: Sumitomo Chemical France established in October 1990 (renamed Sumitomo Chemical Agro Europe S.A.S. in July 1994) and Philagro France S.A.S. established in June 1993. In Asia, manufacturing bases were founded, including SC Enviro Agro India Private Limited (SCEAI) established in April 2000 (merged with Sumitomo Chemical India Private Limited in September 2011) and Dalian Sumika Chemphy Chemical Co., Ltd. established in April 2003.

Sumitomo Chemical's business has been globalized by mergers & acquisitions and business tie-ups. In May 2001, Sumitomo Chemical acquired the household insecticide business of Aventis Crop Science. In April 2010, Sumitomo Chemical acquired capital in Australia's Nufarm Limited and formed comprehensive tie-ups in the agrochemicals field.

In April 2011, the Agricultural Chemicals Sector made a fresh start with its new name of "Health and Crop Sciences Sector," expanding to the pharmaceutical chemicals (active pharmaceutical ingredients and intermediates) business.

14 IT-related Chemicals Sector Established and Business Grows

Sumitomo Chemical positioned the IT-related chemicals business as "one of the pillars supporting the company's future" and established the IT-related Chemicals Sector in October 2001. South Korea, China, and Taiwan were identified as markets with the greatest potential, and production companies were established in those areas to actively expand business. With the dramatic widespread use of LCD panels, Sumitomo Chemical recorded strong growth in sales of LCD display materials, such as polarizing films and color filters.

Polarizing films

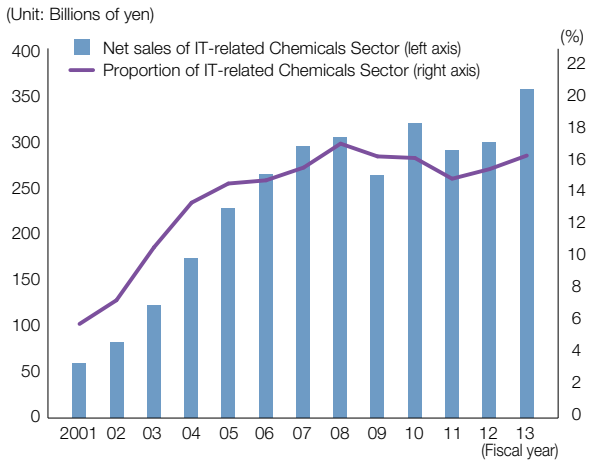
Establishing the IT-related Chemicals Sector

In the latter half of the 1990s, the use of the Internet, personal computers and mobile phones expanded from business applications to personal applications. With such rapid development of IT, Sumitomo Chemical added IT-related chemicals business to its medium-term business plans (FY 2001 to 2003), positioning it as the third pillar (following polyolefin and life sciences) that would support Sumitomo Chemical into the future. To strengthen and nurture the IT-related chemicals business, the optical product and the electronic material businesses, and a part of the functional material business, which had been included in the Basic Chemicals and Fine Chemicals Sectors, were consolidated into a single unit when the IT-related Chemicals Sector was established on October 1, 2001. In the ICT (Information and Communication Technology) market, to expand business by quickly responding to the needs of customers, marketing as well as research and development needed to be pursued in a comprehensive—total solution—manner under one business unit.

The new sector consisted of four divisions: Optical Materials, including polarizing and retardation films; Semiconductor Process Materials, which included photoresist for manufacturing semiconductors and high-purity electronic chemicals; Electronic Materials for epoxy resin molding compounds for encapsulation of semiconductor devices, and high-performance polymers; and Chemical Compound Semiconductor Materials, which handled MOEPI wafers, organic metals, and other products. Because research and product development are essential in IT, an IT-related Chemicals Research Laboratory was established at the same time the sector was launched, integrating research, production and sales. Production of color filters was handled by a joint venture between Sumitomo Chemical and two companies in Taiwan, New STI Technology, Inc. (established in May 2005 in Ehime, 40% owned by Sumitomo Chemical; merged with Sumitomo Chemical in April 2006)

At first, the operating rate for products in the IT-related Chemicals Sector was only 50-60% of capacity. But through building factories near the

Net sales of IT-related Chemicals Sector (FY 2001 to FY 2013)



Note: Proportion is to total Sumitomo Chemical sales.

factories of customers in South Korea, China, and Taiwan, and creating a product supply system, Sumitomo Chemical benefited from the sizable production increases by those customers of flat-screen TVs and LCD panels. As a result, between FY 2002 and 2005, net sales for the sector increased each year by 30 to 50%. In FY 2013, net sales were 362.3 billion yen, accounting for 16% of sales of the Sumitomo Chemical Group.

Overseas Expansion of LCD Materials Business

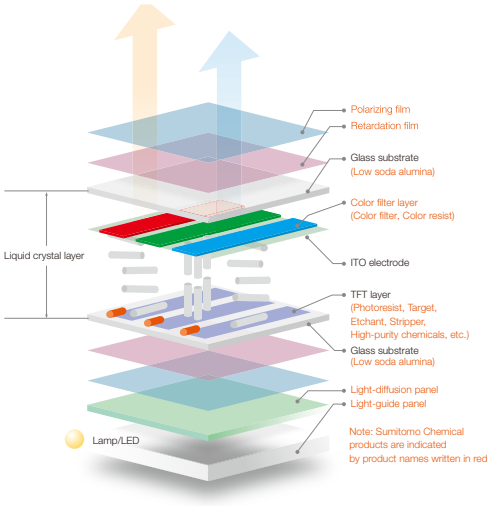
The IT-related chemicals field has the following characteristics: (1) the product life cycle is short, (2) a large initial investment is required, and (3) multiple and differing technologies are required to properly meet customer needs. To be successful in Sumitomo Chemical's focused business of LCD panels, the requests of customers must be accurately interpreted to ensure both superior performance and cost benefit as an assembled component, providing customers with the best possible solutions.

To deal with these characteristics, the sector put its top priority on accelerating research to develop high-quality products that meet market requirements. At the same time, Sumitomo Chemical pursued production and business activities closely attuned to customer needs, and actively expanded business in South Korea, Taiwan, and China, and other areas.

LCD panels used in flat-screen TVs, personal computers, mobile phones, etc. are composed of many layers of materials. Of those, Sumitomo Chemical supplies polarizing films for LCD, color filters, light-diffusion panels, light-guide panels, and others. The beginning of overseas production was in May 2001, when Dongwoo Fine-Chem Co., Ltd. (established to produce high purity electronic chemicals for semiconductor chip manufacturing) began manufacturing chip-cutting polarizing films. In April 2003, the production of color filters began, and in September of that year, the company began the production of polarizing film rolls. As a result, Dongwoo Fine-Chem Co., Ltd. has become a core company in the IT-related Chemicals Sector, with the largest production capacity for LCD materials.

In June 2001, Sumitomo Chemical and Inabata & Co., Ltd. invested together to establish Sumika Technology Co., Ltd. in Taiwan. In April 2004, a comprehensive production system for polarizing films was built. The first production location in China was Shanghai KSC Optical Device Co., Ltd., founded in September 2001 (renamed Sumika Electronic Materials (Shanghai) Co., Ltd. in March 2004), followed by Sumika Electronic Materials (Wuxi) Co., Ltd. in July 2004 and Sumika Huabei Electronic Materials (Beijing) Co., Ltd. in November 2009. For production in Europe, Sumika Electronic Materials Poland Sp. Zo.o. was established in August 2006 (with production ending at the end of 2012).

LCD structure



Dongwoo Fine-Chem plant (South Korea)

Sumika Technology plant (Taiwan)

15 Progress of the Rabigh Project

The Rabigh Project in Saudi Arabia is a world-scale integrated oil refining and petrochemical complex. This project has great significance for Sumitomo Chemical, toward the initiative of "Promoting Globally Integrated Management." In the second quarter of 2009, the Phase I facilities with annual capacities of 1.3 million tons of ethylene and 900,000 tons of propylene began operation. In May 2012, Sumitomo Chemical confirmed the feasibility of the Rabigh II Project and decided to proceed by finalizing various project elements.

Rabigh Refining and Petrochemical Company complex

Integrated refinery and petrochemical complex: The Rabigh Project

The Rabigh Project dates back to 2002 when an investment bank invited Sumitomo Chemical to place bids. The project was to be run jointly with the Saudi Arabian Oil Company (Saudi Aramco), the state-owned oil company. A world-scale integrated oil refining and petrochemical complex was to be built in Rabigh in Saudi Arabia. Sumitomo Chemical was selected as the partner company from among the leading chemical companies in the world. In May 2004, a memorandum between Sumitomo Chemical and Saudi Aramco was signed.

It is one of the largest integrated refining and petrochemical complexes in the world and it takes full advantage of a stable supply of cost-competitive feedstocks provided by Saudi Aramco as well as its economies of scale. Although Sumitomo Chemical had been operating a large-scale complex in a petroleum-refining center, Singapore, this project was Sumitomo Chemical's first attempt to establish a foothold in an oil and gas-producing country. The project, therefore, opened a new stage in Sumitomo Chemical's global business strategy. At the same time, it was expected that the Rabigh Project would promote the development of downstream industries, and contribute to sustainable economic development in the Kingdom of Saudi Arabia through the creation of employment opportunities and diversification of its manufacturing industries. It was also hoped that the undertaking would contribute to a closer relationship between Japan and Saudi Arabia.

In August 2005, Sumitomo Chemical and Saudi Aramco signed a joint-venture agreement and Rabigh Refining and Petrochemical Company (Petro Rabigh) was established in September as a fifty-fifty joint venture. In March 2006, a groundbreaking ceremony was held, to which the Saudi Arabian Minister of Petroleum and Mineral Resources, other government officials from both countries and guests from companies related to the project were invited.

Completing the Phase I Project

In carrying out the Rabigh Project, there were geopolitical risks involved. For the purpose of mitigating those risks, Sumitomo Chemical conducted thorough research in advance, making use of project financing

Signing the FS Memorandum, Rabigh Phase I Project

and investment insurance. Of the total cost of US$9.8 billion, about 60% was covered by project financing. In March 2006, Sumitomo Chemical signed financing contracts with a consortium of banks, including the Japan Bank for International Cooperation (JBIC), Saudi Arabian financial institutions and commercial banks of other countries.

In October 2008, Petro Rabigh took over from Saudi Aramco petroleum refining facilities with a daily capacity of 400,000 barrels. In April and May of 2009, new ethane cracker facilities and fluid catalytic cracking devices, respectively, went into operation. The petroleum refining and integrated petrochemical complex facilities were built on 2,000 hectares (nine times the size of the Chiba Works). At the peak of construction, 40,000 people were working there. The annual production capacities of the main facilities were 2.9 million tons of naphtha, 1.3 million tons of ethylene and 900,000 tons of propylene.

In January 2008, Petro Rabigh held its initial public offering (IPO) on the Saudi Arabian stock exchange. Following the IPO, paid-in-full capital became SAR 8.76 billion (approximately 270 billion yen), where Sumitomo Chemical and Saudi Aramco each had a 37.5% stake in Petro Rabigh.

Starting Work on the Phase II Project

In April 2009, Sumitomo Chemical and Saudi Aramco signed the Memorandum of Understanding, which led to a feasibility study for the development of the Rabigh Phase II Project (Rabigh II Project) as a major expansion of the existing petroleum refining and petrochemical complex of Petro Rabigh. In May 2012, Sumitomo Chemical confirmed the feasibility of the Rabigh II Project and decided to proceed by finalizing various project elements, such as agreements for engineering, procurement, and construction and other project contracts.

Capacity of derivative products from Rabigh Phase I Project (2009)

Names of products	Production capacity
Linear low-density polyethylene	600,000 tons
High-density polyethylene	300,000 tons
Monoethylene glycol	600,000 tons
Polypropylene	700,000 tons
Propylene oxide	200,000 tons

Completion ceremony for the Rabigh Project


Rabigh Refining and Petrochemical Company complex

The Rabigh II Project, by expanding the ethane cracker and building a new aromatics complex, will use 30 million standard cubic feet per day of ethane and approximately 3 million tons per year of naphtha as feedstock to produce a variety of high value-added petrochemical products. Each plant will be brought on stream, beginning in the first half of 2016. The total investment is currently projected to reach approximately US$7 billion. The Rabigh II Project's main products will be EPDM (ethylene propylene diene methylene linkage), thermoplastic polyolefin (TPO), methyl methacrylate (MMA) monomer, MMA polymer (PMMA), low density polyethylene/ethylene vinyl acetate (LDPE/EVA), para-xylene/benzene, cumene and phenol/acetone.

Rabigh Phase II Project derivative product plans (2012)

Product name	Production capacity
EPDM	Approx. 70,000 tons
TPO	Approx. 10,000 tons
MMA monomer	Approx. 90,000 tons
PMMA	Approx. 50,000 tons
LDPE/EVA	Approx. 80,000 tons / Approx. 70,000 tons
Para-xylene / Benzene	Approx. 1.3 mil. tons / Approx. 400,000 tons
Cumene	Approx. 400,000 tons
Phenol / Acetone	Approx. 250,000 tons / Approx. 150,000 tons

16 Aiming to be a Truly Global Chemical Company

Sumitomo Chemical carried out measures to promote globally integrated management, such as establishing a business philosophy, introducing a new HR system and establishing corporate branches with the aim of becoming a truly global chemical company. The Sumitomo Chemical Group as a whole has also been practicing “Sustainable Chemistry” built on its CSR-based management.

Volunteers planting mangrove trees in Thailand

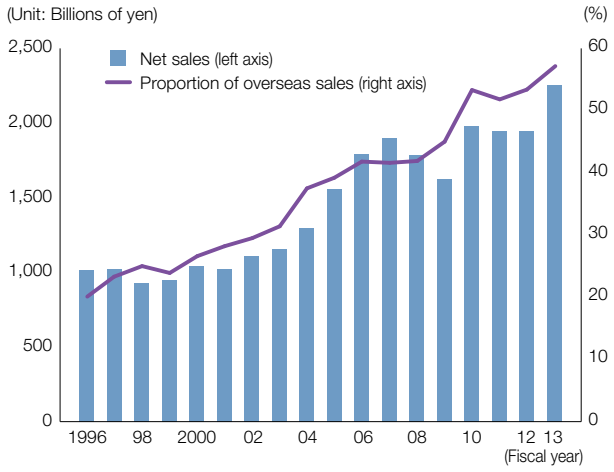
Dealing with Global Operations

As part of its Three-Year Corporate Business Plan covering the fiscal years from 2004 to 2006, Sumitomo Chemical set forth its vision for the 21st century: becoming a truly global chemical company as a major player in every area of business operations.

The gist of Sumitomo Chemical's vision of the company for the 21st century is as follows:

1. A company with competitive strength in global markets
2. A company that continues to grow on the strength of accumulated technologies, with a focus on high added value and profitability
3. A company that operates in accordance with global standards, places importance on shareholder value, and is sensitive to aspirations of its employees for fulfillment of their lives

Sumitomo Chemical Group sales and proportion of overseas sales (FY 1996 to FY 2013)

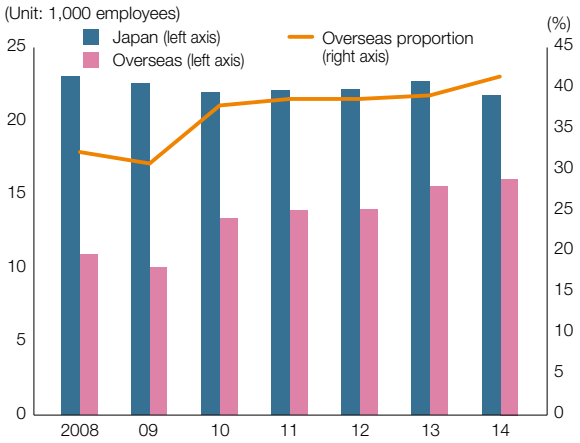


Aiming to achieve these goals, Sumitomo Chemical reinforced its overseas operational bases and accelerated its business expansion to extend its global reach while strengthening and enhancing corporate governance and management systems to support the further development of its businesses on the global stage. One aspect was revising the HR system. For managers, in April 2001, new job-based grading and performance evaluation systems were introduced. For non-managerial employees, in July 2007, ability-based grading was abolished and a new role-based grading system was adopted. Global HR initiatives, such as establishing global positions, identifying group core talent, integrating HR systems to include recruitment, talent development and performance evaluation, were taken to create a mechanism to put the right person in the right job on a global scale.

Sumitomo Chemical established Corporate

Group representatives from abroad meet at the Global Managers Meeting

Sumitomo Chemical Group employees in Japan and overseas (2008 to 2014)



Note: 2008 figures are as of end of September; other figures are as of end of March.

Branches (CB) as the foundation for global expansion at its four business bases around the world. With a view to strengthening and streamlining the headquarters functions to support its global business operations, Sumitomo Chemical established its first CB in Singapore in 2007, followed by New York, Brussels and Shanghai. Each CB provided Group companies with specialized corporate expertise and services in areas such as HR, internal control, auditing, legal & ethics compliance, IT, accounting, purchasing, and logistics.

In pursuit of business development and more efficient business management, the CBs in Shanghai and Singapore were raised to Regional Headquarters (RHQ) as Sumitomo Chemical (China) Co., Ltd. for China in June 2011 (office moved to Beijing in August 2011) and Sumitomo Chemical (Asia Pacific) Pte Ltd in March 2013 to cover Southeast Asia, South Asia and Oceania. Subsequently in January 2014, Sumitomo Chemical raised the remaining two CBs to RHQ as Sumitomo Chemical Europe S.A./N.V. to cover Europe and Turkey and Sumitomo Chemical America, Inc. for North America, which marks the beginning of Sumitomo Chemical's worldwide RHQ coverage. Each company will act as Sumitomo Chemical's regional representative, supporting the Sumitomo Chemical Group companies by assisting in regional business planning and by providing professional specialized corporate services and support.

Setting a Business Philosophy

From 2005 onward, the Sumitomo Chemical Group sales saw rapid increases, but globalization was growing at an even faster pace. By FY 2010, the Sumitomo Chemical Group sales overseas surpassed 50% of total sales, and by the end of March 2014, overseas employees exceeded 40% of the Sumitomo Chemical work force (consolidated).

This rapid globalization gave the group as a whole diversity in terms of both culture and value orientations. In January 2009, Sumitomo Chemical took a fresh look at its fundamental business principles, mission and values, and committed them to writing as a business philosophy for all the employees of the Sumitomo Chemical Group companies to share and identify with.

Sumitomo Chemical's Business Philosophy

1. We commit ourselves to creating new value by building on innovation.
2. We work to contribute to society through our business activities.
3. We develop a vibrant corporate culture and continue to be a company that society can trust.

Corporate Statement

Sumitomo Chemical started business in 1913 as a producer of fertilizers from sulfur dioxide gas emitted by copper smelters. This business, which solved the environmental problem of air pollution while meeting the social demand for more agricultural production, embodied the business philosophy of the Sumitomo family handed down from the 17th century.

"Our business must benefit society, not just our interests." Throughout our history of almost a century, we at Sumitomo Chemical have lived by this credo. We have worked to build better lives by developing various businesses that meet people's evolving needs. At the same time, we have continuously delivered technological innovation while paying special attention to product quality, safety and the environment.

Looking to the future, we will create new value beyond the boundaries of chemistry by combining a variety of ideas, views and technologies. We will also continue to take up the challenges facing the globe, from meeting basic needs, to protecting the environment, to addressing the issues of adequate supplies of food, energy, and other resources.

In this endeavor, each of us at Sumitomo Chemical will work together to enhance our capabilities, explore new possibilities every day, and overcome the challenges lying ahead with enthusiasm and a strong sense of mission.

Sumitomo Chemical will seek to continue to build trust and bring joy to people across the world through constant innovation.

In March 2008, the Corporate Statement was formulated to summarize common values, pride, and commitment to share as employees of the Sumitomo Chemical Group companies. In July 2003, the Sumitomo Chemical Charter for Business Conduct was put in place to provide the basis for the company's compliance system and show the important guidelines to be followed by individual employees in conducting their daily business activities.

A Mission for Sustainable Chemistry —CSR Management

Ever since its inception, with its mission of solving environmental problems and increasing agricultural productivity, Sumitomo Chemical has upheld the conviction that the essence of corporate social responsibility (CSR) is to contribute to the sustainable development of society through business activities.

With this philosophy in mind, in November 2004, the Basic CSR Policy was established. With the concept of sustainable chemistry, Sumitomo Chemical is actively pursuing CSR activities, achieving balance in the three areas of "economy," "responsible care," and "society."

The measures that best represent sustainable chemistry are Green Processes, which are manufacturing processes that limit environmental impact as much as possible throughout the life cycle of products, and Clean Products, which are products designed with improved performance in terms of environmental friendliness, safety, and quality. From those, new methods for producing caprolactam and propylene oxide have been evaluated especially well as gentle on the environment, winning Green & Sustainable Chemistry Awards.

Receiving the Green & Sustainable Chemistry Award

Award (Year)	Winning theme
3rd GSC Award (2003)	The development and industrialization of the vapor phase Beckmann rearrangement process for the production of ε-caprolactam
4th GSC Award (2004)	The development and industrialization of the hydrogen chloride oxidation process
8th GSC Award (2008)	The development of new propylene oxide process by cumene recycling

Basic CSR Policy

By continuously creating and providing useful new technologies and products that have never before existed, Sumitomo Chemical will build corporate value while contributing to both the solution of problems facing our environment and society, and the enrichment of people's lives.

In order to accomplish this, the Company will work to achieve a balance of profitable business operations, the preservation of the environment, safety, health, product quality and social activity. We will also pursue and promote our CSR activities with consideration for the interests of all our stakeholders, including our stockholders, employees, business partners, and the local residents of all regions in which we conduct business. Through our endeavors in these areas, we hope to play a significant role in building a sustainable society, while continuing to grow in order to realize our goal of becoming a truly global chemical company in the 21st century.

Responsible Care

The concept of "responsible care" first came as a proposal from an association of chemical product manufacturers in Canada in 1985. It referred to activities for ensuring safety, health, quality, and environmental issues throughout a product's life cycle. The idea was well received and increasingly popularized around the world. The International Council of Chemical Associations adopted it in 1990, and in 1995, the Japan Chemical Industry Association established the Japan Responsible Care Council, in which Sumitomo Chemical participated, in the same year. Sumitomo Chemical began such activities ahead of this, in 1991, and in April 1994, established the Basic Policy on Product Quality, the Environment and Safety. This policy set down the top priorities for safety, the environment, and product quality at all stages of business activities. (In November 2005, the policy was revised to "Corporate Policy on Safety, the Environment and Product Quality.")

In the more than twenty years that have followed, the Sumitomo Chemical Group has undertaken a wide range of activities, such as ensuring safe and stable operations, improving environmental performances and strengthening effective management of chemicals including the communication of chemical risks throughout the supply chain, together with open and transparent communication with stakeholders. Responsible Care is the foundation for Sumitomo Chemical CSR activities and one of the Sumitomo Chemical Group's top priorities.

Promoting Activities to Benefit Society

Social contribution activities are based on three categories of contributions: (1) community contribution, (2) future contribution, and (3) global contribution; and these activities are aimed at securing safety and health, protecting the environment, raising children who will lead the next generation, and assisting in natural disaster relief.

Concerning social contribution, Sumitomo Chemical has supported African countries through the distribution of Olyset Net, a mosquito net to prevent malaria, and this activity is globally highly reputed. The net is made from insecticide-incorporated polyethylene fibers, which is a good example of "Creative Hybrid Chemistry." In October 2001, Olyset Net received the world's first recommendation from

Olyset Net manufacturing plant in Tanzania

the World Health Organization (WHO) as a "long-lasting insecticidal net" and it gained widespread use through WHO's "Roll Back Malaria" campaign. In response to WHO's request for expanded production, Sumitomo Chemical improved its production system and provided the manufacturing technology free of charge to A to Z Textile Mills Limited, a Tanzanian manufacturer, which began to produce Olyset Net in September 2003. Vector Health International Limited (VHI), a joint venture between A to Z Textile Mills and Sumitomo Chemical, opened a new factory in February 2007, employing approximately 7,000 people. This project has contributed to not only the prevention of malaria but also local economic development. In 2010, Sumitomo Chemical increased the total production capacity in Tanzania, China, and Vietnam to 60 million nets a year, which has greatly contributed to reducing the number of people suffering from malaria all over the world. Believing that development of a proper primary education system and related infrastructure is essential to the growth of African countries, Sumitomo Chemical has been using a part of the proceeds from the Olyset Net business for construction of elementary and junior high school buildings, lunch facilities, and dormitories for teachers in African countries.

The Sumitomo Chemical Group has been supporting the areas affected by the Great East Japan Earthquake in a variety of ways since immediately after the earthquake on March 11, 2011. Specifically, in the summer of 2011, Sumitomo Chemical donated insecticides to deal with flies and other pest infestations. Since 2011, employee volunteers have visited the disaster-stricken areas to clean up debris, install highly functional insecticidal nets, and donate functional innerwear made from Sumitomo Chemical products to people living in temporary housing. Sumitomo Chemical has sponsored science experiment classes, mainly for local elementary school students as a part of extracurricular activities during the summer vacation period. Moreover, in Sumitomo Chemical's Head Office (Tokyo) cafeteria, special menu items have been offered made with foods produced in the disaster-stricken areas, and a portion of sales from these meals has been donated to a scholarship fund to support children who lost their parents in the March 11 tsunami. Sumitomo Chemical has also been holding fairs to sell produce and processed food from earthquake-affected areas.

In addition to the above, Sumitomo Chemical has been conducting a mangrove planting project in Thailand.

Volunteer activities in areas affected by the Great East Japan Earthquake (installing functional insecticidal nets)

Sumitomo Chemical has been holding fairs to sell produce and processed food from quake-affected areas.

17 For a Better Tomorrow

Polymer organic light emitting diode (PLED) prototype testing (Tsukuba Material Development Laboratory)

In order to accomplish sustained growth over the next 100 years, Sumitomo Chemical is to its full extent promoting the policy measures of the new Three-Year Corporate Business Plan for FY 2013-2015. The plan is devoted to a period of strengthening the foundations of Sumitomo Chemical's business. Under the Corporate Slogan of "Creative Hybrid Chemistry For a Better Tomorrow," Sumitomo Chemical is contributing to a sustainable society as well as aiming to take a significant leap forward.

The world has many global-scale issues to deal with, but Sumitomo Chemical hopes to provide new technologies and products that will help to solve these issues and realize abundant lifestyles for people on earth. In this way, Sumitomo Chemical is doing its best to achieve sustainable growth together with society as a diversified global chemical company.

Change and Innovation—for the next hundredth anniversary

In the FY 2013-2015 medium-term corporate business plan, under the new slogan of "Change and Innovation—for the next hundredth anniversary" Sumitomo Chemical will promote change and innovation in the three areas of business structure, business development, and corporate culture, and work on five priority management issues to achieve its performance targets: (1) enhancing financial strength, (2) restructuring businesses, (3) developing next-generation businesses, (4) promoting globally integrated management, and (5) ensuring strict legal and ethical compliance as well as maintaining safe and stable operations.

With regard to (1), Sumitomo Chemical is striving to take measures to reduce its interest-bearing liabilities through three major initiatives: improving profitability, rigorously selecting investments, and improving asset efficiency to secure greater strategic freedom to aggressively pursue growth opportunities.

The second priority management issue calls for Sumitomo Chemical to exit or downsize underperforming businesses, improve its business portfolio and boost profitability. One example in the field of petrochemicals is optimizing of production systems.

Japan (Chiba): Develop new technologies, products and know-how and roll them out globally, playing the roles of "mother plant" and "mother laboratory."

Singapore: Deliver high value-added products, meeting the needs of key customers in Asian markets.

Saudi Arabia: Produce cost competitive products, taking advantage of low-cost feedstock and fuels.

To strengthen the competitiveness of the Chiba Works, the production base in Japan of its petrochemical business, Sumitomo Chemical has decided to close down an aging ethylene plant (annual production capacity: 415,000 tons) in or before September 2015 when the next periodic shutdown maintenance will take place, and thereafter procure ethylene and other basic petrochemical feedstock from Keiyo Ethylene (affiliate), which operates the newest and the largest production facilities in Japan.

With respect to (3), six core technologies will be used and combined to introduce new businesses to contribute to a sustainable society: catalyst design, high-precision processing, design of functional organic chemicals and polymers, analysis of bio-mechanisms, device design, and design of functional inorganic materials.

Sumitomo Chemical has identified environment and energy, life sciences, and ICT (Information and Communication Technology) as three areas with high growth potential and has been making strong efforts to develop next-generation businesses in these areas.

Regarding (4), Sumitomo Chemical will globally optimize the functions in each business—from R & D to manufacturing, marketing, sales and logistics—in terms of market, technology, cost and business environment.

Concerning (5), Sumitomo Chemical will further strengthen initiatives to ensure strict legal and ethical compliance across the Sumitomo Chemical Group, including subsidiaries and affiliates around the world, along with achieving safe and stable operations by

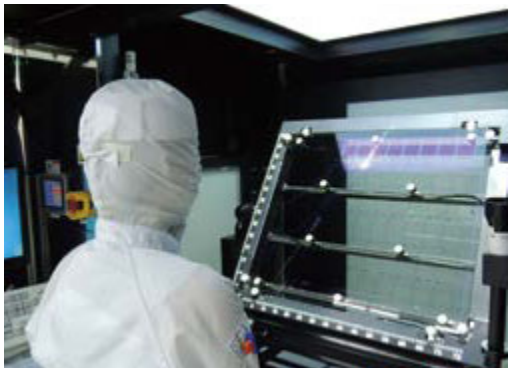
reinforcing its safety culture and enhancing safety assurance capabilities.

For a Better Tomorrow

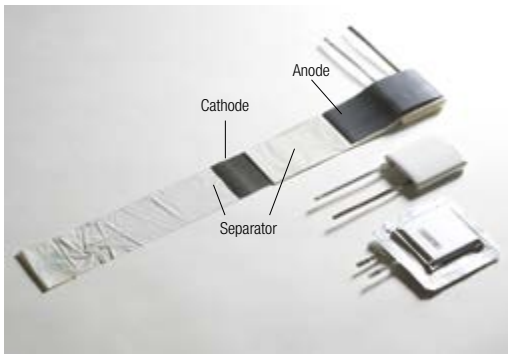
Toward Sumitomo Chemical's next 100 years beginning in 2015, Sumitomo Chemical is fully applying all of its resources to contribute to a sustainable society and to realize strong advances in the future, based on the Corporate Slogan of "Creative Hybrid Chemistry For a Better Tomorrow."

Sumitomo Chemical practices sustainable chemistry as part of its CSR-based management to achieve a balance among the three areas of economy (business), Responsible Care (safety, environment, product quality), and society (benefiting society) in all aspects of its corporate activities.

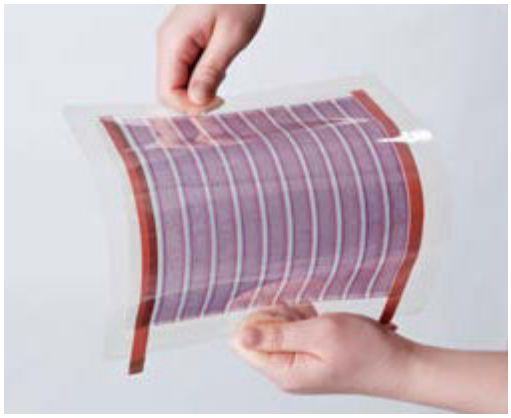
People in the world today face many problems that are difficult to solve, beginning with the environmental issues of resources and energy, food supply, and others. Sumitomo Chemical has drafted a medium-term corporate business plan from FY 2013 that aims to promote next-generation businesses through the promotion of "Creative Hybrid Chemistry" by focusing on three key areas of environment and energy, life sciences, and ICT, to develop value-added products and technologies. In addition, the commitment describes the desirable future direction of Sumitomo Chemical to be a diversified global chemical company that will progress with confidence to achieve sustainable growth together with society, contributing to increasing affluence and the resolution of global challenges facing humanity. Acting on this basic philosophy, the Sumitomo Chemical Group takes as its mission contributing to the society to which it belongs, using its strength in the diverse fields of chemistry. With this goal before it, Sumitomo Chemical steps confidently into the next 100 years.



Touch sensor panel



Heat resistant separator



Organic thin-film solar cell

Agrochemical evaluation test in greenhouse

PLED exhibit (Designed by Motoko Ishii Lighting Design Inc.)

Report from Beijing by Sumitomo Chemical (China) Co., Ltd.

Major Group Companies in China

Sector	Company name	Number of employees*	Founded	Business description
Petrochemicals & Plastics Sector	Zhuhai Sumika Polymer Compounds Co., Ltd.	152	May 2005	Manufacturing and sales of polypropylene compounds
	NOC Asia Limited	19	October 2009	Sales of propylene oxide
	Sumika Polymer Compounds Dalian Co., Ltd.	42	September 2011	Manufacturing and sales of polypropylene compounds
	Jilin Dongcheng Sumika Polymer Compounds Co., Ltd.	126	August 2011	Manufacturing and sales of polypropylene compounds
IT-related Chemicals Sector	Sumika Electronic Materials (Wuxi) Co., Ltd.	803	July 2004	Manufacturing of optical functional films and light diffusion plates
	Sumika Electronic Materials (Shanghai) Co., Ltd.	30	September 2001	Manufacturing and sales of optical functional films
	Sumika Electronic Materials (Shanghai) Corporation	102	February 2009	Sales of IT-related chemicals
	Sumika Electronic Materials (Hefei) Co., Ltd.	7	October 2009	Manufacturing and sales of processing chemicals for LCD panels, sales of other LCD and semiconductor-related materials
	Sumika Huabei Electronic Materials (Beijing) Co., Ltd.	1	November 2009	Manufacturing and sales of polarizing films and components used in LCD panels
	Sumika Electronic Materials (Shenzhen) Co., Ltd.	11	February 2011	Business and technical assistance for IT-related materials
	Sumika Electronic Materials (Xi'an) Co., Ltd.	55	November 2012	Manufacturing and sales of chemicals for semiconductor production processing
Health & Crop Sciences Sector	Shanghai Lifetech Household Products Co., Ltd.	28	November 1995	Sales and manufacturing of products relating to household insecticides
	Dalian Sumika Chemphy Chemical Co., Ltd.	42	April 2003	Manufacturing of crop protection chemical intermediates
	Dalian Sumika Jingang Chemicals Co., Ltd.	144	October 2009	Manufacturing and sales of methionine and high-performance greenhouse films
	Sumitomo Chemical Shanghai Co., Ltd.	36	December 1997	Sales and development of crop protection chemicals, feed additives and environmental health products
Corporate	Sumitomo Chemical (China) Co., Ltd.	25	June 2011	Regional Headquarters for China
	Sumika Business Service (Dalian) Co., Ltd.	35	March 2013	Providing HR and accounting services to group companies in China
	Sumika Jingang Trading (Dalian) Co., Ltd.	7	January 2013	Sales of agricultural materials

* The numbers of employees above are as of March 2014 not including dispatched or part-time personnel.

Consolidated Net Sales by Sector in China (FY 2013)

(Unit: Billions of yen)

Sector	Net sales
Basic Chemicals Sector	1.8
Petrochemicals & Plastics Sector	25.0
IT-related Chemicals Sector	73.5
Health & Crop Sciences Sector	15.6

The figure for Basic Chemicals Sector includes the net sales of the Basic Chemicals Sector of Sumitomo Chemical Shanghai Co., Ltd.

Medium-term Economic Forecast and Activities of Group Companies: China

The twelfth five-year plan (2011-2015) by the Chinese government had a goal of 7% average annual growth for real GDP. From 2016 onward, however, it is expected that China will have difficulty maintaining this steady growth and see a gentle decline in pace.

There are three major factors for the slowing of economic growth in China. The first is a serious pollution problem, the second is a tight energy supply, and the third is the decrease in the working population (ages 15 to 64) projected to begin in 2015.

In spite of these restraining factors, new drivers of economic growth such as increases in personal consumption, development of tertiary industries, and expanded development of inland regions are anticipated to support growth.

The Sumitomo Chemical Group is expanding business in China as the market continues to grow, although at a slower pace than that in the past.

In the Petrochemicals & Plastics Sector, in 2005, Sumitomo Chemical began operations in the city of Zhuhai to produce and sell polypropylene compounds, mainly for automobile materials. In 2011, Sumitomo Chemical built factories in Jilin Province and Dalian City. In Jilin, in particular, a joint venture with a local Chinese corporation was established with the objective of supplying high-performance materials to Chinese automobile manufacturers, which are expanding their presence in the domestic market. Sumitomo Chemical provides the joint venture with the polypropylene compounding technology and its Chinese partner provides it with the know-how to sell products to Chinese automobile manufacturers. Sumitomo Chemical hopes to have synergies created through this collaboration between Japanese and Chinese companies.

In the IT-related Chemicals Sector, major client companies with whom we have built good relationships have constructed factories in inland China. Sumitomo Chemical established a production company in Xi'an City in 2012 to develop business in inland areas. Business bases already established in China are integrating marketing data, such as client data and needs, to expand business for the Sumitomo Chemical Group as a whole.

In 2003, the Health & Crop Sciences Sector established a joint-venture company in Dalian City with a powerful group of local companies to produce agrochemical intermediates. In 2009, Sumitomo Chemical formed a joint venture with another partner to produce a feed additive and high-performance greenhouse films. In 2013, another joint venture with the same partner was founded to expand the sales of high-performance greenhouse films, as well as sell high value-added agricultural materials, the market of which is viewed as promising.

The Sumitomo Chemical Group has established four Regional Headquarters, for China, for Southeast Asia/South Asia/Oceania, for Europe and Turkey, and for North America. These Regional Headquarters will act as Sumitomo Chemical's regional representatives in the regions and support Group companies by assisting in their business planning for the regions and by providing various professional corporate services and support in areas such as HR, accounting, information technology, and business compliance, which are key to sustainable and efficient business operations.

In China, Sumitomo Chemical (China) Co., Ltd. was established in June 2011 to serve as Regional Headquarters.

Report from Singapore by Sumitomo Chemical (Asia Pacific) Pte Ltd

Major Group Companies in Southeast Asia, South Asia and Oceania

Sector	Company name	Number of employees*	Founded	Business description
Basic Chemicals Sector	Sumitomo Chemical Singapore Pte Ltd	122	July 1996	Sales of MMA monomer and polymer, crop protection chemicals, IT-related chemicals and other products
	Singapore Methyl Methacrylate Pte. Ltd.	119	July 1996	Manufacturing and sales of MMA monomer and polymer
	Sumipex (Thailand) Co., Ltd.	332	May 2002	Production and sales of MMA cast sheets
	Bara Chemical Co., Ltd.	152	February 1973	Manufacturing and sales of textile finishing resins and rubber chemicals
Petrochemicals & Plastics Sector	Sumika Polymer Compounds (Thailand) Co., Ltd.	76	September 2008	Manufacturing of polypropylene compounds
	Sumitomo Chemical Asia Pte. Ltd.	106	July 1990	Sales of petrochemical products
	Petrochemical Corporation of Singapore (Pte.) Ltd.	361	August 1977	Manufacturing and sales of ethylene and propylene, etc.
	The Polyolefin Company (Singapore) Pte. Ltd.	361	May 1980	Production and sales of polyethylene, polypropylene, etc.
Health & Crop Sciences Sector	Sumitomo Chemical India Private Limited	367	April 2000	Sales, development, manufacturing and registering of crop protection chemicals and household insecticides
	Sumitomo Chemical Australia Pty Ltd	21	January 1998	Sales of crop protection chemicals and environmental health products
	Sumitomo Chemical Enviro-Agro Asia Pacific Sdn. Bhd.	26	October 1996	R&D center for Health and Crop Sciences Sector
	Sumitomo Chemical (Thailand), Co., Ltd.	2	January 2008	Registration and sales of crop protection chemicals and environmental health products
	Sumitomo Chemical Philippines Inc.	4	March 2008	Registration and promotion of crop protection chemicals and environmental health products
	Sumitomo Chemical Vietnam Co., Ltd.	48	July 2008	Sales of crop protection chemicals
Corporate	Sumitomo Chemical (Asia Pacific) Pte Ltd	23	March 2013	Regional Headquarters for Southeast Asia, South Asia and Oceania
	S.C.C. Insurance Pte. Ltd.	0	January 1997	Insurance

* The numbers of employees above are as of March 2014 not including dispatched or part-time personnel.

Consolidated Net Sales by Sector in Southeast Asia, South Asia and Oceania (FY 2013)

(Unit: Billions of yen)

Sector	Net sales
Basic Chemicals Sector	50.8
Petrochemicals & Plastics Sector	295.1
IT-related Chemicals Sector	1.7
Health & Crop Sciences Sector	26.1

The figure for IT-related Chemicals Sector includes the net sales of the IT-related Chemicals Sector of Sumitomo Chemical Singapore Pte Ltd

Medium-term Economic Forecast and Activities of Group Companies: Southeast Asia, South Asia and Oceania

This region is mainly made up of the ASEAN bloc of 10 countries with a population of 600 million people and a GDP of US$2.1 trillion, South Asia with a population of 1.2 billion and a GDP of US$1.9 trillion in the largest country India, and Oceania primarily Australia and New Zealand.

Although the region experienced a period of sluggish growth during the global recession in late 2011, the ASEAN countries saw growth of 5 to 6% in FY 2012 due to robust domestic demand. India, Indonesia, and Thailand saw a slowing of growth rates in FY 2013 but recovery is forecast for FY 2014, with about 5% growth for India and 5 to 6% growth for the ASEAN countries.

Even in the medium to long term, it is expected that the Southeast Asia, South Asia and Oceania markets will remain as attractive global production bases because they have the advantage of an abundant workforce due to population increase. With its potential as a huge consumption market, the position of ASEAN is also expected to rise in the global economy.

The Sumitomo Chemical Group has recognized Southeast Asia as a market with high potential and focused on business expansion since Sumitomo Chemical entered the region in the 1970s, beginning with a petrochemical complex. In South Asia, Sumitomo Chemical has entered the Indian market in recent years and is expanding its presence there.

In the Petrochemicals & Plastics Sector, Singapore Petrochemical Complex began operation in 1984 with two core companies, both Sumitomo Chemical Group companies: Petrochemical Corporation of Singapore (Pte.) Ltd., an ethylene center, and The Polyolefin Company (Singapore) Pte. Ltd., a polyolefin manufacturer. In 1994 the expansion of the complex, known as the Complex II project, was launched. Complex II was started in 1997 with a total capacity of approximately 1 million tons of ethylene. Recently, Sumitomo Chemical Asia Pte. Ltd. in Singapore, which sells products manufactured at Petro Rabigh in Saudi Arabia, constructed facilities at the end of 2013 to produce S-SBR used for fuel-saving tires as demand for such tires is seeing remarkable growth.

In the Basic Chemicals Sector, the MMA and acrylic acid businesses were developed taking advantage of the Complex II project. Sumitomo Chemical established Sumitomo Chemical Singapore Pte Ltd to manage the MMA business.

In the Health & Crop Sciences Sector, ever since a local company was established in Singapore in 1990 for sales and marketing of household insecticides, the sector has developed the markets in Southeast Asia with subsidiaries in Singapore and Malaysia. In 2008, subsidiaries were established in Thailand, the Philippines, and Vietnam as well, to hold the registrations and promote the sales of household insecticides and other crop protection products. In 2000, Sumitomo Chemical India Private Limited was established in Mumbai, with an eye toward improving the food supply and contributing to the improvement of lifestyle of India, a country with a population of more than 1.2 billion. At present, this Indian subsidiary plays an important role in expanding sales of agrochemicals, household insecticides, and other products in the country. In Australia, Sumitomo Chemical Australia Pty Ltd was established to promote the use of agrochemicals and household insecticides in Oceania.

The Southeast Asia, South Asia and Oceania region will continue to play a major role in the global strategy of the Sumitomo Chemical Group. In April 2013, Sumitomo Chemical (Asia Pacific) Pte Ltd was established in Singapore as Regional Headquarters that will support Sumitomo Chemical's business development in this high-growth region by securely capturing emerging business opportunities, accelerating new business undertakings, and also serving to have various business operations implemented more efficiently and effectively.

Sumitomo Chemical has positioned Singapore as the regional base for training in leadership skills and necessary competencies in order to enable participating leaders to exercise their full potential in the execution of their responsibilities. Sumitomo Chemical Training Institute (SCTi) was opened in Singapore in 2012, and Sumitomo Chemical (Asia Pacific) Pte Ltd is in charge of its operations. It is Sumitomo Chemical's first overseas training center for human resource development.

Report from Brussels by Sumitomo Chemical Europe S.A./N.V.

Major Group Companies in Europe and Turkey

Sector	Company name	Number of employees*	Founded	Business description
Basic Chemicals Sector	Sumika Ceramics Poland Sp.zo.o.	11	September 2011	Manufacturing and sales of diesel particulate filters (DPF)
Petrochemicals & Plastics Sector	Sumika Polymer Compounds Europe Ltd.	3	September 2007**	Holding company of Sumika Polymer Compounds (UK) Ltd and Sumika Polymer Compounds (France) SA
	Sumika Polymer Compounds (UK) Ltd	60	September 2007**	Manufacturing and sales of polypropylene compounds
	Sumika Polymer Compounds (France) SA	34	September 2007**	Manufacturing and sales of polypropylene compounds
Health & Crop Sciences Sector	Sumitomo Chemical (U.K.) plc	14	February 1988	Sales of household insecticides and financing
	Sumitomo Chemical Agro Europe S.A.S.	36	October 1990	Development and sales of crop protection chemicals
	Sumitomo Chemical Italia S.r.l.	71	December 1993	Development and sales of crop protection chemicals
	Kenogard S.A.	42	December 1981	Development and sales of crop protection chemicals
	Philagro Holding S.A.	0	September 1993	Equity holder in Philagro France S.A.S.
	Philagro France S.A.S.	56	June 1993	Development and sales of crop protection chemicals
Corporate	Sumitomo Chemical Europe S.A./N.V.	46	October 1994	Regional Headquarters for Europe and Turkey Sales of chemical products
	Cambridge Display Technology Ltd.	102	January 1992	R&D and licensing in polymer organic light emitting diodes (PLED) for displays and lighting as well as other plastic electronic applications
	Sumitomo Chemical Turkey A.S.	2	November 2013	Sales of chemical products

* The numbers of employees above are as of March 2014 not including dispatched or part-time personnel.

** The date of acquisition by Sumitomo Chemical

Consolidated Net Sales by Sector in Europe and Turkey (FY 2013)

(Unit: Billions of yen)

Sector	Net sales
Basic Chemicals Sector	5.3
Petrochemicals & Plastics Sector	39.8
IT-related Chemicals Sector	2.4
Health & Crop Sciences Sector	46.7

The figure of IT-related Chemicals Sector includes the net sales of IT-related Chemicals Sector of Sumitomo Chemical Europe.

Medium-term Economic Forecast and Activities of Group Companies: Europe and Turkey

Economic recovery in Europe is projected to take many years. The EU is taking measures to deal with bad debt in Greece, unstable banks in Spain, and the so-called sovereign risk, but fundamental solutions are still to come. Unemployment in the EU countries is acute. It has reached approximately 11% in the region, and is higher than 25% in Greece and Spain. In these two countries, over 50% of the youths aged twenty-five and under is jobless. In Italy, this figure is about 40%.

In 2010, the EU formulated “Europe 2020” as the EU’s growth strategy up to the year 2020. This includes increasing employment rate, promoting research and development, decreasing greenhouse gas emissions, and others. In July 2013, Croatia became the twenty-eighth member of the EU, and Turkey and former Eastern European bloc countries are under consideration for membership, indicating that the EU continues to be a centripetal force. Negotiations for free trade with Japan and the United States are ongoing, and the EU is doing what it can to expand markets in and outside the region to reactivate its economy.

Although the European region is plagued by economic uncertainty, it is still an advanced and enormous market with 500 million people. The Sumitomo Chemical Group will continue to position it as an important region, planning proactive business activities.

In the Basic Chemicals Sector, Sumitomo Chemical has been selling resorcinol and dyes, and in 2013, it completed a DPF (diesel particulate filter) plant in Poland. As new and stricter vehicle emission regulations are enacted in Europe, the Sumitomo Chemical Group will actively market DPF, targeting it to be one of the core businesses in the future.

Concerning the Petrochemicals & Plastics Sector, in 2007, plants to produce polypropylene compounds for automobiles and home electrical appliances were acquired in the United Kingdom and France, contributing to business development.

In the IT-related Chemicals Sector, the focus is on expanding the sales of high-performance polymers. In the fields of advanced materials, Cambridge Display Technology, Ltd. in the United Kingdom, a pioneer in polymer organic light emitting diode (PLED) technology, was made a wholly-owned subsidiary in 2007, promoting the development of materials and devices for PLED display and lighting.

The Health & Crop Sciences Sector established subsidiaries for development and sales in the main markets in Europe of France, Spain, Italy and the United Kingdom, as well as in South Africa, to drive the market-based sales and promotion of the products. Through this sales network, Sumitomo Chemical sells not only its own agrochemicals but also the products of Nufarm Ltd., an Australian company in which Sumitomo Chemical’s ownership is 23%. Sumitomo Chemical engages also in expanding sales of methionine, a feed additive.

For Europe and Turkey, Sumitomo Chemical Europe S.A./N.V. was designated Regional Headquarters in January 2014.

Report from New York by Sumitomo Chemical America, Inc.

Major Group Companies in North America

Sector	Company name	Number of employees*	Founded	Business description
Petrochemicals & Plastics Sector	Sumika Polymer Compounds America, Inc.	48	August 2007	Manufacturing and sales of polypropylene compounds
	Sumika Polymers North America Inc.	16	November 2011	Sales of polypropylene compounds
IT-related Chemicals Sector	Sumika Electronic Materials, Inc.	55	January 2003	Manufacturing and sales of MOEPI wafers and other IT-related materials
Health & Crop Sciences Sector	Valent U.S.A. Corp.	242	April 1988	Development and sales of crop protection chemicals
	Valent BioSciences Corp.	137	January 2000	Development, sales and manufacturing of crop protection chemicals and biorationals
	McLaughlin Gormley King Company	108	April 1908	Development and sales of household insecticides
Corporate	Sumitomo Chemical America, Inc.	28	May 1976	Regional Headquarters for North America Sales of chemical products
	Sumitomo Chemical Capital America, Inc.	0	April 1997	Financing

* The numbers of employees above are as of March 2014 not including dispatched or part-time personnel.

Valent BioSciences Corp. (VBC)

VBC Research Center

Sumitomo Chemical America, Inc.

Consolidated Net Sales by Sector in North America (FY 2013)

(Unit: Billions of yen)

Sector	Net sales
Basic Chemicals Sector	2.1
Petrochemicals & Plastics Sector	11.8
IT-related Chemicals Sector	2.4
Health & Crop Sciences Sector	77.4

The figure for Basic Chemicals Sector includes the net sales of the Basic Chemicals Sector of Sumitomo Chemical America, Inc.

Medium-term Economic Forecast and Activities of Group Companies: North America

Following the 2008 Lehman Brothers financial crisis, the real GDP of the United States went into negative growth in 2008 and 2009. In 2010, it recovered to 2% growth. Low growth, however, continued, with real GDP of only 2.2% in 2012. Factors behind this sluggish growth included the European debt crisis, US financial problems, delays of improvement in housing and labor markets, and weak growth in personal income and consumption. According to corporate economic forecasts (Blue Chip survey in March), growth will be 1.9% in 2013 and 2.7% in 2014, with a sluggish economy continuing in 2013 but some improvement the following year.

Medium-term to long-term growth is forecast to be driven by (1) abundant agricultural resources, (2) natural energy resources, such as shale gas, (3) a steady growth in population (1% a year, for an increase of three million a year), (4) excellent research institutes to accelerate innovations, and (5) proximity to South America, a growing market. Since the late 1990s, in particular, progress in excavation technology has meant a rapid increase in shale gas production that could make the United States a leading exporter of natural gas. This should improve employment opportunities and play a part in boosting real GDP.

The Sumitomo Chemical Group puts its highest level of priority on the US market due to the size of its market and potential for growth in the medium to long term. All Business Sectors are taking strong initiatives.

In the Health & Crop Sciences Sector, Sumitomo Chemical established Valent U.S.A. Corp. in 1988 to commence agrochemical development and sales, which enabled Sumitomo Chemical to make a full-scale entry into the US market. After that, strategic mergers and acquisitions were made to enter biological pesticide and post-harvest processing businesses as the agriculture-related markets were expected to grow. In the field of household insecticides, in 2012, Sumitomo Chemical acquired a majority shareholding in the sales affiliate to strengthen its business foundation in the United States.

Concerning the Petrochemicals & Plastics Sector, Sumitomo Chemical has focused on the businesses of polypropylene compounds and TPE, high-performance materials, used in automobile parts as demand for them is expected to grow in the United States. Sumitomo Chemical has manufacturing bases in the United States and will expand the production capacity to meet increased demand.

In the IT-related Chemicals Sector, Sumitomo Chemical affiliates in the United States are manufacturing and selling materials used to make semiconductors and electronic components for smartphones and tablet computers.

In 1976, Sumitomo Chemical America, Inc. (SCAI) was founded in New York to represent the Sumitomo Chemical Group companies in the United States. SCAI collects and dispatches information on economic and political trends, studies and analyzes trends in technology, and builds and maintains relationships with international organizations, such as the United Nations. In January 2014, SCAI became Regional Headquarters for North America.

The Sumitomo Spirit and Sumitomo Chemical's Business Philosophy

The Sumitomo Spirit

Sumitomo's Business Principles

1. Sumitomo shall achieve prosperity based on solid foundation by placing prime importance on integrity and sound management in the conduct of its business.

2. Sumitomo's business interest must always be in harmony with public interest; Sumitomo shall adapt to good times and bad times but will not pursue immoral business.

Sumitomo Chemical's Business Philosophy

1. We commit ourselves to creating new value by building on innovation.

2. We work to contribute to society through our business activities.

3. We develop a vibrant corporate culture and continue to be a company that society can trust.

Sumitomo Chemical's Business Philosophy is embodied in these three sentences.
Such management principles as "placing prime importance on integrity and sound management" and "adapting to good times and bad times and not pursuing immoral business" were first seen in the "Rules Governing the Sumitomo family" enacted in 1882.
Other business teachings that Sumitomo passed from one generation to the next include "giving back to the state and society" and "mutual prosperity, respect for the public good."
Sumitomo Chemical took a fresh look at its fundamental business principles, mission and values, and committed them to writing.

Recent Sales and Profits

(Unit : Billions of yen)

	2010/3 Actual	2011/3 Actual	2012/3 Actual	2013/3 Actual	2014/3 Actual
Net sales*					
Basic Chemicals	¥ 203.3	¥ 248.5	¥ 284.3	¥ 263.5	¥ 286.9
Petrochemicals & Plastics	481.5	649.9	672.4	693.9	792.0
Fine Chemicals	86.7	88.9	-	-	-
IT-related Chemicals	265.2	322.3	293.1	300.0	362.3
Agricultural Chemicals (Health & Crop Sciences)	211.5	215.8	264.1	262.6	327.0
Pharmaceuticals	267.5	365.9	380.5	378.6	418.8
Others	105.1	91.2	53.4	54.0	56.8
Total	1,620.9	1,982.4	1,947.9	1,952.5	2,243.8
Operating income (loss)*					
Basic Chemicals	1.3	21.3	9.3	(6.4)	(10.9)
Petrochemicals & Plastics	(0.2)	11.1	6.2	(3.2)	4.9
Fine Chemicals	3.6	0.1	-	-	-
IT-related Chemicals	6.3	26.1	11.0	11.7	34.9
Agricultural Chemicals (Health & Crop Sciences)	29.3	22.4	26.5	26.3	38.2
Pharmaceuticals	29.9	26.9	20.9	30.9	47.1
Others	6.7	5.8	7.7	8.0	8.4
Elimination	(25.4)	(25.8)	(20.9)	(22.2)	(21.8)
Total	51.5	88.0	60.7	45.0	100.8
Ordinary income	35.0	84.1	50.7	50.3	111.1
Net income (loss)	14.7	24.4	5.6	(51.1)	37.0
Assets	2,383.9	2,367.3	2,337.0	2,472.1	2,788.5
Shareholders' equity/Net assets	821.4	758.9	720.9	747.5	934.5
Interest-bearing debt	997.9	1,040.3	1,053.0	1,060.6	1,074.6
D/E ratio (times)	1.2	1.4	1.5	1.4	1.1
Shareholders' equity to total assets (%)	24.1	22.1	20.8	20.1	23.1
Net income (loss) per share (yen)	8.92	14.86	3.42	(31.25)	22.62
Dividend per share (yen)	6.00	9.00	9.00	6.00	9.00
Capital expenditures	103.2	98.7	155.1	116.1	143.4
Depreciation and amortization	116.1	147.0	114.9	115.5	115.7
R&D expenses	117.3	138.1	122.3	125.0	141.3
ROE (%)	2.6	4.5	1.1	(10.4)	6.5
ROA (%)	0.7	1.0	0.2	(2.1)	1.4
Employees	27,828	29,382	29,839	30,396	30,745
Consolidated subsidiaries	143	146	145	162	164

* As of April 1, 2011, Fine Chemicals segment was eliminated and reorganized. The business in this segment was transferred to Basic Chemicals segment or Agricultural Chemicals segment. Following this change Agricultural Chemicals segment changed its name to "Health & Crop Sciences" segment.

Sumitomo Chemical Locations in Japan

(as of Jul. 1, 2014)

Major Companies of Sumitomo Chemical Group: Japan (as of Jul. 1, 2014)

Basic Chemicals Sector

Taoka Chemical Co., Ltd.
Sumika Bayer Urethane Co., Ltd.
Sumika Acryl Co., Ltd.
Sumika Chemtex Co., Ltd.
EGS Co., Ltd.
Sumika Alchem Co., Ltd.
Asahi Chemical Co., Ltd.
Ceratec Co., Ltd.
Niihama Coal Center Co., Ltd.
Nihon Methacryl Monomer Co., Ltd.
Sumika High-Purity Gas Company
Nihon Ammonia Terminal Co., Ltd.

Petrochemicals & Plastics Sector

Japan-Singapore Petrochemicals Co., Ltd.
Nihon Singapore Polyolefin Co., Ltd.
Nippon A&L Inc.
Nihon Oxirane Co., Ltd.
Sumika Styron Polycarbonate Limited
Keiyo Ethylene Co., Ltd.
Tobu Butadiene Co., Ltd.
Nihon Isobutylene Co., Ltd.
Evolue Japan Co., Ltd.
Sumika-Kakoushi Co., Ltd.
Thermo Co., Ltd.
Sumika Middle East Co., Ltd.
Sumika Rabigh Industrial Park Development Co., Ltd.
Sumika Color Co., Ltd.
Sumika Plastech Co., Ltd.
Chiba General Service Co., Ltd.

IT-related Chemicals Sector

O.L.S. Co., Ltd.
Sumika-Radel Company Ltd.
Sumika Assembly Techno Co., Ltd.

Health & Crop Sciences Sector

Koei Chemical Co., Ltd.
Sumika Technoservice Corporation
SC Environmental Science Co., Ltd.
Sumika Agro Manufacturing Co., Ltd.
Sumika Green Corporation
Sumika Agrotech Co., Ltd.
SanTerra Co., Ltd.
Sumitomo Chemical Garden Products Inc.
Nihon Ecoagro Co., Ltd.
Rainbow Chemical Co., Ltd.
Sumika Fukuei Agro K.K.
TS Agro K.K.
SUMIKA FARM Nagano Co., Ltd.
SUMIKA FARM Oita Co., Ltd.
SUMIKA FARM Yamagata Co., Ltd.
SUMIKA FARM Mie Co., Ltd.
SUMIKA FARM Ibaraki Co., Ltd.
Oita General Service Co., Ltd.

Pharmaceuticals Sector

Sumitomo Dainippon Pharma Co., Ltd.
Nihon Medi-Physics Co., Ltd.

Others

Sumika Logistics Co., Ltd.
Sumitomo Chemical Engineerig Co., Ltd.
Ciatec, Ltd.
Sumitomo Bakelite Co., Ltd.
Sumitomo Seika Chemicals Co., Ltd.
Shinto Paint Co., Ltd.
Sumitomo Joint Electric Power Co., Ltd.
Sumika Finance Co., Ltd.
Sumika Chemical Analysis Service, Ltd.
Sumika Real Estate Co., Ltd.
Career Support Co., Ltd.
Sumika Human Support Co., Ltd.
Sumika Technical Information Service, Inc.
Osaka General Service Co., Ltd.
Sumitomo Chemical Systems Service Co., Ltd.
CO_2 M-Tech Co., Ltd.
Sunrise farm Saijo Co., Ltd.
Sunrise Saijo Processing Center Co., Ltd.
Sunrise farm Toyota Co., Ltd.

Major Companies of Sumitomo Chemical Group: International (as of Jul. 1, 2014)

Basic Chemicals Sector

Sumika Ceramics Poland Sp. zo.o. 31
Sumitomo Chemical Singapore Pte Ltd 20
Singapore Methyl Methacrylate Pte. Ltd. 20
Sumipex (Thailand) Co., Ltd. 22
Bara Chemical Co., Ltd. 22
Sumipex TechSheet Co., Ltd. 17
LG MMA Corp. 12
New Zealand Aluminium Smelters Ltd. 27

Petrochemicals & Plastics Sector

Sumika Polymers North America Inc. 44
Sumika Polymer Compounds America, Inc. 44
Sumika Polymer Compounds Europe Ltd. 37
Rabigh Refining and Petrochemical Company 24
Rabigh Conversion Industry Management Services Company 25
Sumitomo Chemical Asia Pte. Ltd. 20
Petrochemical Corporation of Singapore (Pte.) Ltd. 20
The Polyolefin Company (Singapore) Pte. Ltd. 20
Sumika Polymer Compounds (Thailand) Co., Ltd. 22
Jilin Dongcheng Sumika Polymer Compounds Co., Ltd. 4
Zhuhai Sumika Polymer Compounds Co., Ltd. 8
Sumika Polymer Compounds Dalian Co., Ltd. 3
NOC Asia Limited 11
Sumitomo Chemical Polymer Compounds Saudi Arabia Company Ltd. 24
Sumika Polymer Compounds (UK) Ltd 37
Sumika Polymer Compounds (France) SA 34

IT-related Chemicals Sector

Sumika Electronic Materials, Inc. 48
Sumika Electronic Materials (Wuxi) Co., Ltd. 2
Sumika Huabei Electronic Materials (Beijing) Co., Ltd. 1
Sumika Electronic Materials (Hefei) Co., Ltd. 5
Sumika Electronic Materials (Shanghai) Co., Ltd. 6
Sumika Electronic Materials (Shanghai) Corporation 6
Sumika Electronic Materials (Shenzhen) Co., Ltd. 7
Sumika Technology Co., Ltd. 16
SSLM Co., Ltd. 14
Dongwoo Fine-Chem Co., Ltd. 13
Sumika Electronic Materials (Xi'an) Co., Ltd. 10

Health & Crop Sciences Sector

Valent U.S.A. Corp. 47
Valent BioSciences Corp. 45
Pace International, LLC 49
Sumitomo Chemical do Brasil Representações Limitada 52
Valent de Mexico S.A. de C.V. 50
Valent BioSciences de Chile S.A. 51
Kenogard S.A. 35
Sumitomo Chemical (U.K.) plc 38
Philagro France S.A.S 36
Sumitomo Chemical Agro Europe S.A.S. 36
Philagro Holding S.A. 36
Sumitomo Chemical Italia S.r.l. 33
Philagro South Africa (Pty) Ltd. 30
Vector Health International Ltd. 29
Sumitomo Chemical East Africa Limited 29
Sumitomo Chemical India Private Limited 25
Sumitomo Chemical Enviro-Agro Asia Pacific Sdn. Bhd. 21
Sumitomo Chemical (Thailand), Co., Ltd. 22
Sumitomo Chemical Philippines Inc. 18
Sumitomo Chemical Vietnam Co., Ltd. 19
Sumitomo Chemical Australia Pty Ltd 26
Dalian Sumika Jingang Chemicals Co., Ltd. 3
Dalian Sumika Chemphy Chemical Co., Ltd. 3
Sumitomo Chemical Shanghai Co., Ltd. 6
Shanghai Lifetech Household Products Co., Ltd. 6
Sumitomo Chemical Taiwan Co., Ltd. 15
Sumitomo Chemical Agro Seoul, Ltd. 12
McLaughlin Gormley King Company 46

Pharmaceuticals Sector

Sunovion Pharmaceuticals Inc. 41
Dainippon Sumitomo Pharma America Holdings, Inc. 41
Sumitomo Pharmaceuticals(Suzhou) Co., Ltd. 9
Boston Biomedical, Inc. 40

Others

Sumitomo Chemical America, Inc. 42
Sumitomo Chemical Capital America, Inc. 43
Sumitomo Chemical Europe S.A./N.V. 32
Cambridge Display Technology Ltd. 39
S.C.C. Insurance Pte. Ltd. 20
Sumitomo Chemical (China) Co., Ltd. 1
Sumitomo Chemical (Asia Pacific) Pte Ltd 20
Sumika Jingang Trading (Dalian) Co., Ltd. 3
Sumika Business Service (Dalian) Co., Ltd. 3
Sumitomo Chemical Turkey A.S. 28

Chronology of Sumitomo Chemical

Year	Month	
1590		Riemon Soga, who married the elder sister of Masatomo Sumitomo, begins a copper refining and smithing business in Kyoto.
c. 1600		Riemon Soga develops a technique (*nanban-buki*) for separating silver from crude copper.
c. 1630		Masatomo Sumitomo takes a Buddhist name, Monjuin Kakyu, and begins a shop to deal in books and medicine in Kyoto.
1630		Tomomochi Sumitomo (eldest son of Riemon and son-in-law of Masatomo) relocates copper refining operations to Osaka.
1690		Tomoyoshi Sumitomo, the fourth generation in the family business, discovers copper in Besshi and opens the Besshi Copper Mine in 1691.
1891	Oct.	The House of Sumitomo changes its governing rules and establishes its "Business Principles."
1893	Sep.	Gas emissions containing sulfur dioxide from the smelting plant causes damage to locally grown crops, and the local people petition the prefectural government (beginning of the gas emission pollution problem).
1905	Jan.	The smelting plant is moved to Shisaka Island, but the pollution worsens.
1911	Autumn	To rid of the polluting gas emissions, the decision is made to collect the sulfur dioxide and transform it into sulfuric acid, and use it to make calcium superphosphate (fertilizer).
1913	Sep.	Sumitomo Fertilizer Works is formed in Niihama in Ehime Prefecture as a business directly operated by Sumitomo General Head Office.
1915	Oct.	Sumitomo Fertilizer Works, predecessor of Sumitomo Chemical and present-day Ehime Works, commences business (calcium superphosphate is shipped for the first time).
1925	Jun.	The Sumitomo Fertilizer Works, Ltd. is established as an independent company.
1931	Apr.	Full-scale production of ammonia and ammonium sulfate begins.
1934	Feb.	Company name is changed to Sumitomo Chemical Co., Ltd.
1934	Jun.	Sumitomo Aluminium Smelting Co., Ltd. is established.
1938	Apr.	Full-scale production of methanol and formalin begins.
1944	Jul.	Merger with Japan Dyestuff Manufacturing Company takes Sumitomo Chemical into dyestuffs and pharmaceuticals (present-day Osaka Works and Oita Works).
1946	Feb.	Name is changed to Nisshin Chemical Co., Ltd.
1949	Nov.	All facilities of Sumitomo Aluminium Smelting Co., Ltd. are taken over.
1952	Aug.	Name is changed back to Sumitomo Chemical Co., Ltd.
1958	May	Full-scale production of ethylene and its derivatives (low-density polyethylene) begins in Ehime, and Sumitomo Chemical enters the petrochemical business.
1962	Apr.	Sumitomo Chemical develops and begins sales of Sumithion, an organophosphorus insecticide for agricultural use.
1965	Nov.	Central Research Laboratory is established (subsequently renamed as Takatsuki Research Laboratory; closed in March 2003).
1965	Nov.	Sumitomo Chiba Chemical Co., Ltd. is established (merges with Sumitomo Chemical in Jan. 1975; present-day Chiba Works).
1970	Jan.	Sumitomo Chiba Chemical Co., Ltd. completes ethylene production facilities with annual capacity of 300,000 tons.
1971	Jul.	Takarazuka Research Laboratory is established, strengthening research capabilities for pharmaceuticals and agrochemicals.
1976	Jul.	Sumitomo Aluminium Smelting Co., Ltd, is established (Sumitomo Chemical transfers aluminum business to the company; the company is liquidated in 1986).
1977	Aug.	Petrochemical Corporation of Singapore (Pte.) Ltd. (PCS) is established.
1978	Jan.	Pyrethroid household insecticide production capabilities are strengthened when Misawa Works begins operations.
1980	May	The Polyolefin Company (Singapore) Pte. Ltd. (TPC) is established.
1982	Feb.	PT Indonesia Asahan Aluminium (INALUM) begins operations.
1983	Jan.	Ehime Works ethylene plant and derivative manufacturing plants are closed, and production is concentrated in Chiba Works.
1984	Feb.	Sumitomo Chemical and Inabata & Co., Ltd. jointly establish Sumitomo Pharmaceuticals Co., Ltd. (Sales begin in Oct. 1984.)
1984	Feb.	The Singapore Petrochemical Complex begins operations.
1985	Nov.	Ammonia production facilities discontinue operations (completely disengage from ammonia production) at Ehime Works.
1988	Apr.	Valent U.S.A. Corp. is established to develop and sell agrochemicals in the United States (becomes 100% subsidiary in Sept. 1991).
1989	Mar.	Tsukuba Research Laboratory is established.

Year	Month	
1994	Apr.	The business of Sumitomo Chemical is reorganized into four sectors: Basic Chemicals, Petrochemicals & Plastics, Fine Chemicals and Agricultural Chemicals. The functions of manufacturing, sales & marketing, research & development and planning & coordination are reorganized and integrated under each sector.
1994	Jul.	Sumitomo Chemical Agro Europe S.A.S. takes over agrochemical operations of Sumitomo Chemical France and Sumitomo Chemical UK, and makes a start as the European base for agrochemical production, sales, and research & development.
1995	Dec.	All Sumitomo Chemical plants in Japan obtain ISO9002 certification.
1996	Jul.	Sumitomo Chemical Singapore Pte. Ltd. is established.
1997	Apr.	The second phase of the Singapore Petrochemical Complex begins operations. Combined with the first phase, annual capacity for ethylene production reaches approximately 1 million tons.
1998	Oct.	Facilities for MMA monomer & polymer and acrylic acid in Singapore are completed.
1999	Mar.	All Sumitomo Chemical plants in Japan obtain international environmental management systems standards certification, ISO14001.
2000	Jan.	Biological pesticide business of Abbott Laboratories is acquired, and Valent BioSciences Corp. is established.
2000	Nov.	Announcement is made of planned comprehensive merger with Mitsui Chemicals, Inc. in 2003.
2001	May	Household insecticide business is acquired from Aventis Crop Science S.A.
2001	Oct.	The IT-related Chemicals Sector is established, and Sumitomo Chemical begins a six-sector organization: Basic Chemicals, Petrochemicals & Plastics, Fine Chemicals, IT-related Chemicals, Agricultural Chemicals, and Pharmaceuticals.
2001	Oct.	Olyset Net receives the world's first recommendation from WHO as a long-lasting insecticidal anti-malaria mosquito net.
2002	Nov.	Sumitomo Chemical's joint venture Sumitomo Chemical Takeda Agro Co., Ltd. takes over the agrochemical business of Takeda Pharmaceutical Co., Ltd. (JV partner) and begins business (JV becomes wholly owned in Nov. 2007).
2003	Mar.	Merger with Mitsui Chemicals, Inc. is cancelled.
2003	Apr.	Dongwoo STI, a Korean subsidiary (established in April 2002; present-day Dongwoo Fine-Chem Co., Ltd.), begins operation of large-scale production facilities for color filters for LCD panels.
2003	Jul.	Sumitomo Chemical Charter for Business Conduct is established.
2003	Sep.	Dongwoo Optical Films, a Korean subsidiary (established in Oct. 2002; present-day Dongwoo Fine-Chem Co., Ltd.), begins operation of comprehensive production facilities for LCD polarizing films.
2004	Apr.	Subsidiary Sumika Technology Co., Ltd. (established in June 2001) in Taiwan begins operation of comprehensive production facilities for LCD polarizing films.
2004	Jul.	Sumika Fine Chemicals Co., Ltd. merges with Sumitomo Chemical.
2004	Jul.	Sumika Electronic Materials (Wuxi) Co., Ltd. is established in Wuxi City in China as a production base for IT-related materials.
2005	Sep.	Rabigh Refining and Petrochemical Company (Petro Rabigh) is established as a fifty-fifty joint venture between Sumitomo Chemical and Saudi Aramco.
2005	Oct.	Sumitomo Pharmaceuticals Co., Ltd. and Dainippon Pharmaceutical Co., Ltd. merge to become Dainippon Sumitomo Pharma Co., Ltd.
2008	Jan.	Petro Rabigh is listed on the Saudi Arabian stock market.
2008	Mar.	Corporate Slogan and Corporate Statement are established.
2009	Jan.	Sumitomo Chemical's Business Philosophy is established.
2009	Apr.	The ethane cracker facilities, the main plant of the Petro Rabigh refining and petrochemical complex, begin operations.
2009	Oct.	Dainippon Sumitomo Pharma Co., Ltd. acquires US pharmaceutical company Sepracor, Inc. (present-day Sunovion Pharmaceuticals, Inc.)
2010	Apr.	Sumitomo Chemical purchases 20% of stock in Nufarm Limited of Australia.
2011	Feb.	Sunovion Pharmaceuticals, Inc., affiliate of Dainippon Sumitomo Pharma Co., Ltd., launches Latuda, a medication for schizophrenia, in the United States.
2011	Apr.	The Fine Chemicals Sector is discontinued. The business of Sumitomo Chemical is reorganized into five sectors: Basic Chemicals, Petrochemicals & Plastics, IT-related Chemicals, Health & Crop Sciences, and Pharmaceuticals.
2012	May	Plant to mass-produce touch sensor panels at Dongwoo Fine-Chem Co., Ltd. begins operations.
2012	May	Decision is made to proceed with Rabigh Phase II Project.
2013	Feb.	Discontinuation by Sept. 2015 of Chiba Works ethylene production facilities is announced.

SUMITOMO CHEMICAL COMPANY, LIMITED