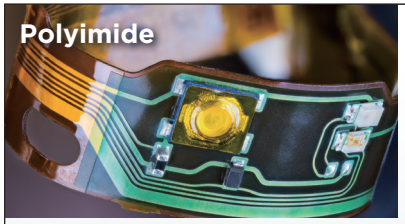
Growth Strategies for Specialty Businesses

Offering numerous products with unique strengths, the UBE Group continues to provide social value that meets the needs of the times.

Polyimide



A plastic offering outstanding strength and heat resistance. UBE is the only manufacturer in the world which engages in the integrated production of polyimide, from the raw material that is biphenyl tetracarboxylic dianhydride (BPDA), to solutions (varnishes), films, and powders. We will maintain and expand our high market share for LCD and flexible OLED (for smartphones, etc.) substrates.

Main applications

Chip-on-film (COF) for large displays
Flexible printed circuit (FPC) boards
Substrates for flexible OLEDs (for smartphones, etc.)

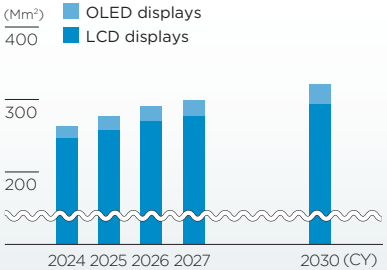
Opportunities

- Further evolution of displays (design, performance, larger sizes)
- 5G smartphone proliferation and vehicle electrification
- Higher capacity of lithium-ion batteries for mobile devices and automobiles
- Acceleration of the shift away from organic solvents due to increasing environmental awareness

Risks

- Replacement with other materials
- Further rise of Chinese manufacturers and price competition

Display market (screen area) growth outlook



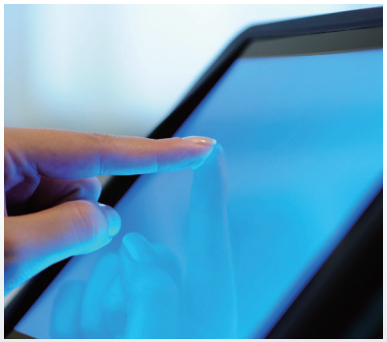
Note: Estimates by UBE based on various data

Business strategy → See p. 41 for details

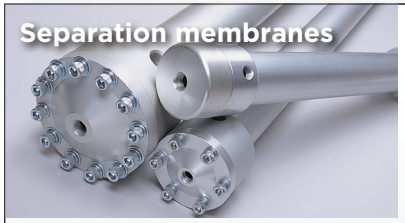
- Capturing investment returns from new facilities
  Establishing stable production systems and expanding sales through new facilities for BPDA and films
- Developing new products that meet new market requirements
  Promoting the development of next-generation display materials, new materials for uses other than displays such as mobility and semiconductors, and environmentally friendly products

Value creation

- Contributing to electronics technology advances



Separation membranes



UBE's separation membranes efficiently separate specific gases from a gas mixture. Our proprietary polyimide technology boasts excellent durability as well as gas permeability and separation performance. We will expand business in the environmental and energy fields with a focus on CO_2 separation membranes for biomethane production.

Main applications

Production of renewable energy such as biomethane
Explosion protection for oil and gas, etc., on-board inert gas generation system (OBIGGS) explosion protection for aircraft
Pneumatic equipment for railroad and machine tools

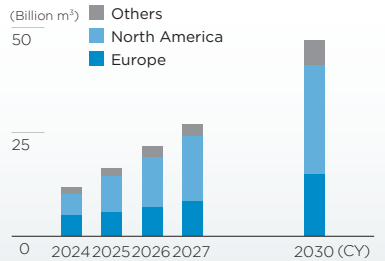
Opportunities

- Expansion of market for environmental products beyond Europe and North America into Asia and South America
- Continued use of renewable energy

Risks

- Policy changes or revisions due to changes in government or international conflicts
- Rapid fluctuations in exchange rates
- Production capacity expansion by competitors and price competition

Biomethane production outlook



Note: Estimates by UBE based on various data

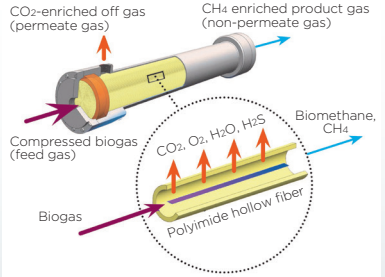
Business strategy → See p. 42 for details

- Expanding business scale centered on CO_2 separation membranes for biomethane production
  Expanding market share in Europe and North America; developing markets in Asia and South America
  Launching a new manufacturing facility for polyimide hollow fiber and for separation membrane modules
- Developing products that contribute to a sustainable future and exploring markets
  Developing durable long-life products
  Exploring next-generation environmental and energy markets

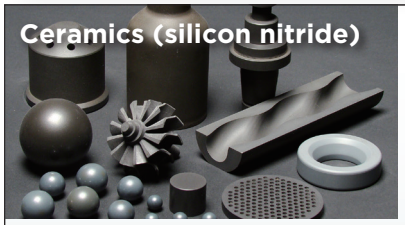
Value creation

- Contributing to renewable energy production
- Contributing to the global environment and GHG reduction

CO_2 separation membranes for biomethane production



Ceramics (silicon nitride)



UBE's silicon nitride powder offers high strength and excellent fracture toughness, wear resistance, and thermal shock resistance. Our proprietary manufacturing process enables uniform particle size, low impurity levels, and a precisely controlled microstructure. UBE's silicon nitride is highly regarded as a global standard, and we will expand sales for xEVs, a market seeing growing demand.

Main applications

Bearings for xEV motors
Insulating heat dissipation substrates for power semiconductor modules for xEVs

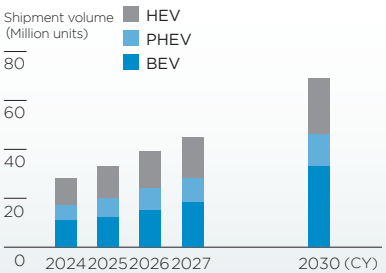
Opportunities

- Expansion of the xEV market
- Increased adoption of silicon nitride bearings due to higher voltages and output
- Increased demand for heat-dissipating substrates due to higher operating temperatures of power semiconductors

Risks

- Greater competition due to new market entrants
- Stagnation of global EV market growth
- Increased presence of Chinese companies in the supply chain

xEV passenger car sales forecast by type



Note: Estimates by UBE based on various data

Business strategy → See p. 43 for details

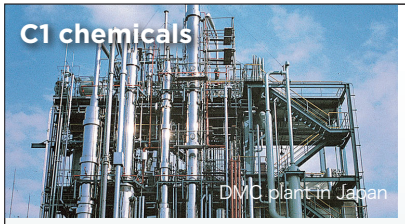
- Expanding business through increased sales in bearings and substrates
  Growth in high-end fields, such as maintaining the world's top share in bearing balls
  Building a production system that meets growing demand by increasing capacity
- Developing new products and grades, exploring new markets
  Developing new products and grades leveraging characteristics derived from our proprietary manufacturing method
  Expanding into new markets other than bearings and substrates

Value creation

- Contributing to the expansion of environmentally friendly vehicles

Growth Strategies for Specialty Businesses

C1 chemicals



Our main C1 chemicals are high-purity DMC and EMC, which are key components of electrolyte solvents for lithium-ion batteries. UBE's proprietary process, using CO and methanol as the main raw materials, produces high-purity products suitable for electrolyte and semiconductor applications, and is cost competitive.

Main applications

Raw materials for lithium-ion battery electrolytes
Raw materials for semiconductor photoresist developer solution

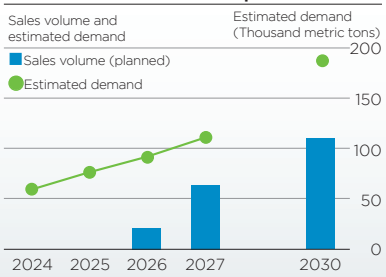
Opportunities

- Expansion of the xEV market
- Expanded use of energy storage systems (ESSs)
- Return of the supply chain to the domestic market in the U.S.

Risks

- Greater than expected slowdown in the xEV market

DMC and EMC demand outlook in the U.S. and sales volume of the UBE Group's U.S. locations



Note: Estimates by UBE based on various data

Business strategy → See p. 45 for details

- Steadily launching a new plant in the U.S. (in the second half of fiscal 2026) to make it a major global base in addition to Spain and Thailand
  Currently, the U.S. depends on imports from China or the UBE Group for all of its DMC and EMC demand— the new plant will enable us to respond to our customers' demand for a stronger supply chain as the only supplier in the U.S., and to achieve stable production and stable supply

Value creation

- Expansion of the xEVs
- Contributing to the global environment

Urethane systems

One of our core businesses is prepolymers for thermosetting urethane elastomers, which are used in a wide range of fields from advanced industries such as semiconductors to industrial machinery and sporting goods. We will achieve profitable growth globally by providing advanced and diverse solutions.

Main applications

Semiconductor manufacturing equipment components
Parts requiring durability such as used in mining equipment, industrial machinery, and pipelines, etc.
Tires, wheels
Sporting goods

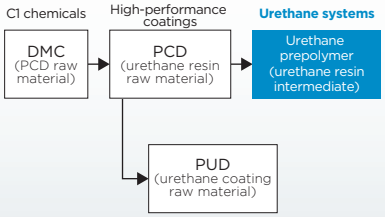
Opportunities

- Expanding demand for semiconductors
- Increasing sophistication of industrial machinery
- Tighter environmental regulations for urethane resins

Risks

- Stagnation of post-merger integration after business acquisition

Synergies with C1 chemicals and high-performance coatings

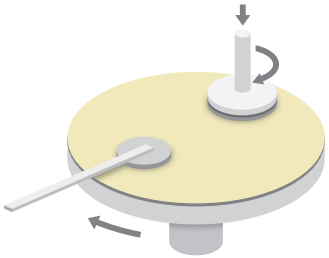


Business strategy → See p. 47 for details

- Steadily executing post-merger integration after business acquisition and achieving further specialization and growth through integration with C1 chemicals and high-performance coatings businesses
- Contributing to global growth by creating synergies across the UBE Group with the U.S. as the central hub

Value creation

- Enhancing functionality and performance in various industrial fields
- Contributing to the environment and reducing customer load through environmentally friendly grades



Example semiconductor manufacturing equipment applications—the UBE Group is contributing to the enhancement of semiconductor performance

Pharmaceuticals

UBE engages in drug discovery research and CDMO operations based on the organic synthesis technologies we have cultivated as a chemical manufacturer. Our strength lies in our high quality API manufacturing capabilities and solution services supported by our drug discovery research expertise spanning many years, diverse facilities and equipment, and advanced quality control systems.

Business

Drug discovery research (small molecule drugs, ADCs,*1 TPD,*2), API and intermediate manufacturing (small molecule drugs, nucleic acid drugs), new life science business
*1 Antibody-drug conjugates
*2 Targeted protein degradation

Opportunities

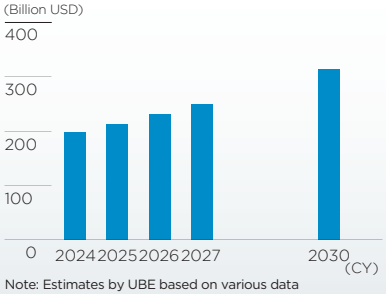
- Growth in advanced and cutting-edge medical needs
- Diversifying treatment methods, including gene therapy and cell therapy
- Increasing demand for high-quality and stable pharmaceutical supply due to growing demand in developing countries

Risks

- Depletion of target molecules in the small molecule pharmaceutical field and increasing difficulty in developing first-in-class*3 drugs
- China's policy for localizing raw material production

*3 Innovative pharmaceuticals with high novelty and usefulness

Global small molecule API market growth outlook



Note: Estimates by UBE based on various data

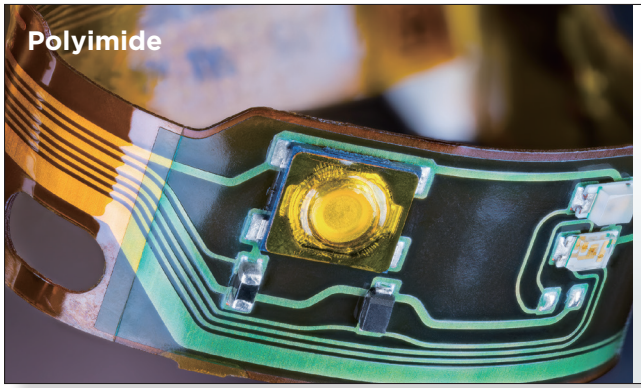
Business strategy → See p. 44 for details

- Exploring the life sciences field and evolving into a life sciences division
  M&A aimed at creating new businesses
  Entering into new business fields, such as utilizing polyimide porous membranes
  Redefining, streamlining, and revitalizing drug discovery research; expanding research areas
  Building a stable business foundation through CDMO

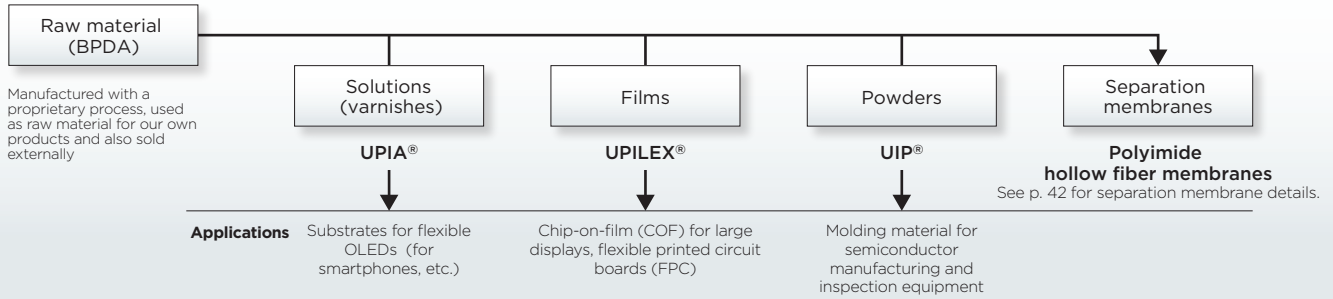
Value creation

- Contributing to the health and prosperity of people around the world through the development and manufacture of new pharmaceutical products

Growth Strategies for Specialty Businesses



Polyimide chain



Social and market analysis

Polyimide resin, with its superior strength and heat resistance, is used in a wide range of fields—from televisions, smartphones, and automobiles, to aerospace. UBE's polyimides have gained high market shares in COF films used in large displays as well as varnishes for flexible OLEDs. In a growing market that is becoming ever more variegated with the shift to OLEDs in PCs and tablets, the diversification of smartphone designs, high-speed communications, higher battery capacities, and semiconductor miniaturization, expectations for UBE's polyimide are high, necessitating the development of products that can meet increasingly sophisticated technological requirements.

New medium-term management plan growth strategies

We will further develop our strengths in the field of display applications. We will maintain our high market share in films for COF and establish a position as the de facto standard in next-generation display materials by developing next-generation varnishes (ultra heat resistant, high strength, high transparency, etc.) that will contribute to higher performance and more diverse designs for smartphones.

We will also continue to expand sales of films for FPCs and promote the adoption of our newly developed low-dielectric films in high-frequency circuit board applications.

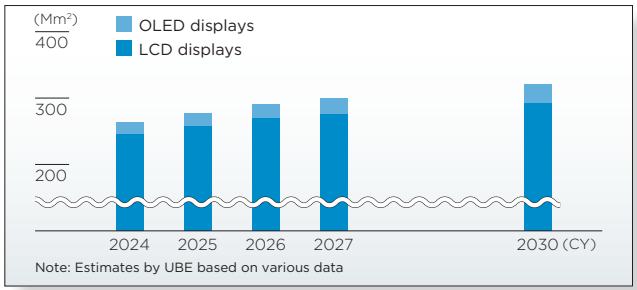
With the expansion of our manufacturing facilities for films and BPDA, a raw material we use in our own products, we have established a supply system that can meet these demands, and we will grow our business through activities to expand sales as well as to develop markets for the results of our R&D.

In addition, we are developing polyimide binders that control the expansion of silicon in silicon negative electrodes to contribute to increased lithium-ion battery capacity, and will promote their adoption for use in mobile devices and xEVs. For semiconductor applications, we are developing new polyimide powders for molded parts used in manufacturing and inspection equipment.

We are also developing environmentally friendly water-based polyimide varnishes that avoid the use organic solvents and are exploring product applications.

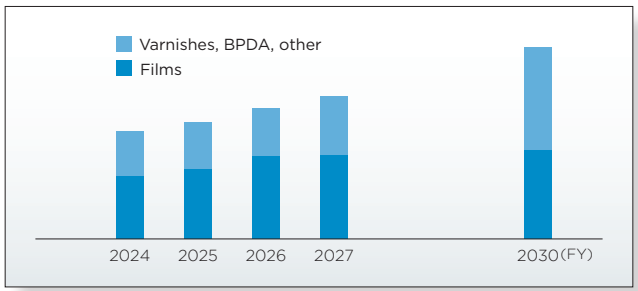
UBE will continue contributing to the realization of a sustainable society through the expansion of its polyimide business.

Display market (screen area) growth outlook



Note: Estimates by UBE based on various data

Polyimide business net sales



Non-financial capital that supports our strategies (sources of competitiveness)

Technological capabilities: We are the only manufacturer that engages in integrated polyimide production spanning BPDA for our own raw material use to varnishes, films, and powders, and we possess proprietary molding and processing technologies. In addition to our high technological capabilities, we have earned a reputation in the market for distinctive polyimide products backed by our extensive track record and reliability in display applications.

R&D and intellectual property: We are developing next-generation products to meet the needs of society, such as the increasing sophistication of electronics and growing awareness of the global environment. UBE will further enhance the brand power and competitiveness of its products, backed by its strengths in the development of BPDA-based polyimide products and its extensive intellectual property.

Growth Strategies for Specialty Businesses

Example applications

Environment and energy

- **CO_2**
  Removing CO_2 from mixed CO_2 and CH_4 to obtain pure CH_4
  
  • Separation and removal of CO_2 from biogas generated from livestock excrement and landfills to produce biomethane
- **Hydrogen**
  Obtaining hydrogen and other useful gases from mixed gases
  
  • Hydrogen recovery for use in oil refineries as well as methanol, ammonia, and renewable energy production
  • Production of sustainable aviation fuel (SAF)
- **Organic vapor dehydration**
  Removing water from alcohol and other organic solvents
  
  • Bioethanol refining

Environment and safety

- **Nitrogen**
  Removing oxygen from compressed air to obtain nitrogen
  
  • Explosion protection for oil, gas, coal, and chemical plants, etc.
  • Explosion protection for aircraft (OBIGGS)

- **Dehumidification**
  Removing water vapor from compressed air to obtain dry air
  
  • Pneumatic equipment for railroad and machine tools, etc.
  • Medical equipment • Analytical equipment

Social and market analysis

In response to the volatility of fossil fuel prices against the backdrop of environmental policy and security concerns, the diversification and stable procurement of energy and resources are being promoted. As part of this, initiatives are being conducted to produce biomethane by separating and removing CO_2 contained in biogas generated from livestock waste and landfills, mainly in the United States and Europe. In addition, as governments and companies work toward decarbonization, attention is also being paid to switching to new energy sources such as bioethanol, sustainable fuels, and hydrogen, increasing demand for separation membranes that can contribute to energy-related technology development and solutions and in turn realize a green society.

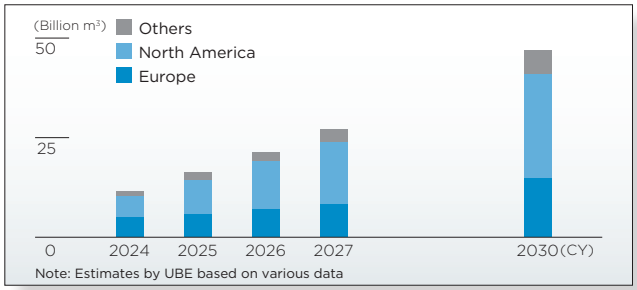
New medium-term management plan growth strategies

As part of the processes involved in separating and concentrating gasses and vapors, methods including distillation, absorption, and adsorption are used. Another, more energy-efficient method, membrane separation, began to be used in the 1980s, and since that time its reliability and recognition have only grown.

Utilizing proprietary polyimide technology, UBE launched separation membranes offering excellent durability as well as gas permeability and separation performance in the 1980s. Since then, we have continued to enhance our product capabilities and engage in challenging R&D to solve global environmental issues. We have increased our presence in the market through the manufacture and supply of superior products, and, as one of our top environmentally friendly products and technologies in the UBE Group, our separation membranes promise to play an active role in the future.

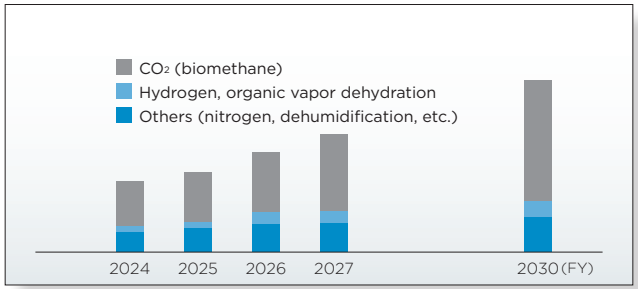
To meet the increasing demand for separation membranes, including in applications in biomethane purification as an alternative to fossil fuels, we are expanding our polyimide hollow fiber production and separation membrane module production facilities. As they come online, we will establish a solid supply system. Together with this, we will further strengthen our product capabilities and marketing activities with a focus on the environmental and energy fields. Through these efforts, we will raise the sales ratio of environmentally friendly products to more than 80% of all separation membrane products by fiscal 2030, and establish a business model that will allow us to grow sustainably.

Biomethane production outlook



Note: Estimates by UBE based on various data

Separation membrane net sales



Non-financial capital that supports our strategies (sources of competitiveness)

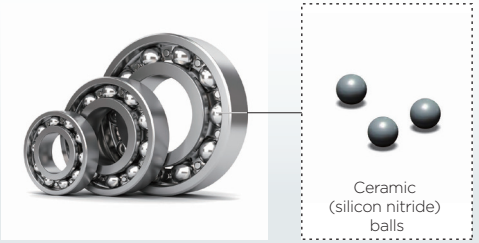
Technological capabilities: UBE's separation membranes, made using raw materials produced in-house, offer excellent gas permeability, separability, and durability. In addition, membrane separation is gaining recognition in recent years because it is energy-saving and maintenance-free.

R&D and intellectual property: Through repeated verification and repetition of molecular, material, strength, and process design of our separation membranes, we have enhanced and advanced the technology and have also accumulated a wealth of big data. Going forward, we will continue to strengthen the competitiveness of our products and engage in research and development to solve global environmental problems.

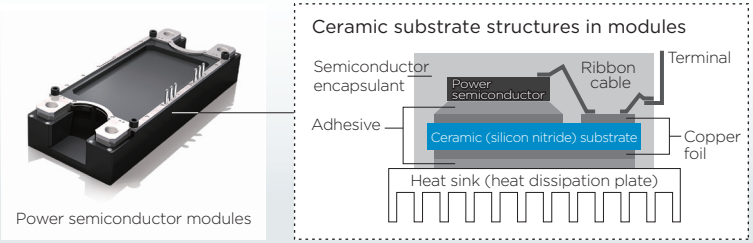
Growth Strategies for Specialty Businesses

Examples applications of ceramics in xEVs

Motor bearings



Insulating heat dissipating substrates for power semiconductor modules



Social and market analysis

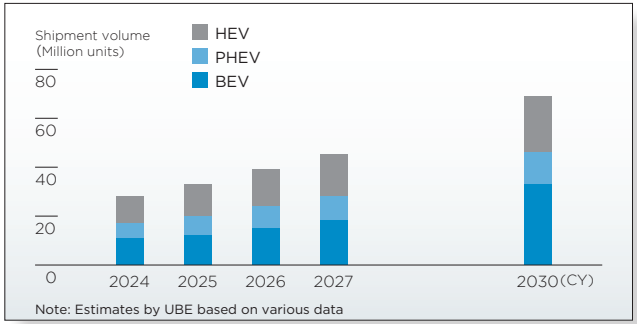
Silicon nitride's wide range of applications includes bearings, substrates, cutting tools, glow plugs, and components for semiconductor manufacturing equipment. Demand in fiscal 2024 was generally firm. xEV market growth is slowing but this market is still expected to continue to grow in the medium to long term, and demand is expected to increase for bearing and substrate applications. In bearing applications, the need for silicon nitride balls, which are lighter and more wear-resistant than steel balls and deliver both durability and reliability, is increasing, especially for high-end vehicles. In substrate applications, silicon nitride's use for power semiconductor substrates is expanding due to its excellent insulation and heat dissipation properties.

New medium-term management plan growth strategies

UBE is expanding its silicon nitride production facilities at its Ube Chemical Factory to meet demand that is expected to continue to grow. Scheduled to come online in 2026, capacity will increase by approximately 50% compared to the current production capability. In bearing applications, demand is rising for use with xEVs, in addition to the existing solid demand for such areas as machine tools. Further, the use of ceramic bearings is expanding not only in luxury cars but also in mass market vehicles. UBE will build a supply system to meet the increasing demand for high-quality silicon nitride powder and maintain a high market share for relevant applications, especially in high-end areas. Meanwhile, for substrate applications, the shift from traditional silicon-insulated gate bipolar transistor modules to silicon carbide modules in power modules, driven by the rising power output of xEVs, is pushing operating temperatures beyond 200˚ C. Silicon nitride excels under these conditions, making it highly reliable for the demanding specifications of automotive applications. UBE anticipates further adoption of its silicon nitride in this field.

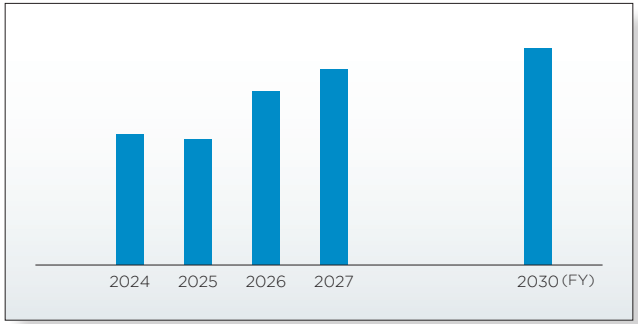
We are also focusing on developing new markets outside of bearings and substrates where the characteristics of silicon nitride can be utilized, and are developing new powder grades and products necessary for this purpose.

xEV passenger car sales forecast by type



Note: Estimates by UBE based on various data

Ceramics net sales



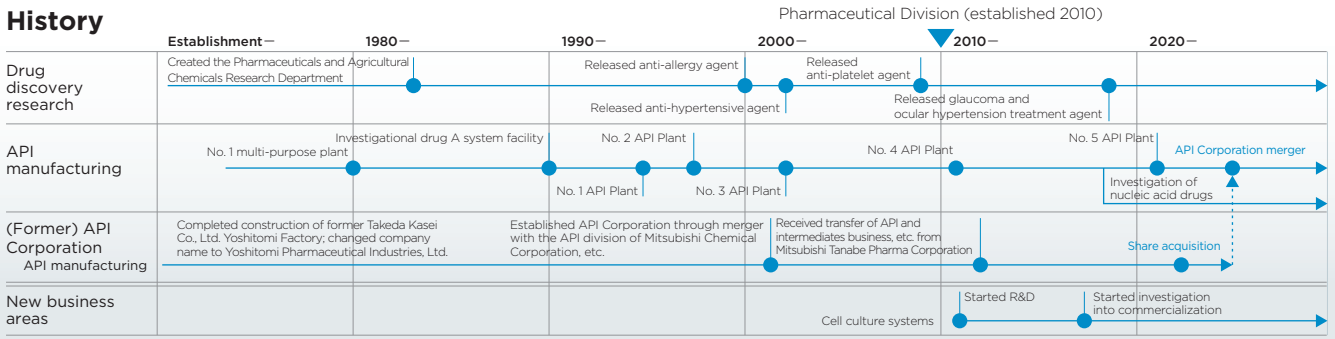
Non-financial capital that supports our strategies (sources of competitiveness)

Technological capabilities: UBE produces high-performance, high-grade silicon nitride powder using a proprietary imide decomposition process. With its high strength, high purity, and high durability, we have established a reputation in the market as the global standard for silicon nitride raw materials and have built an extensive track record in turn.

R&D and intellectual property: We are developing silicon nitride powders for new applications by taking advantage of our ability to produce uniform particle size, low impurity levels, and a precisely controlled microstructure.

Growth Strategies for Specialty Businesses

History



Social and market analysis

The global pharmaceutical market is expected to continue to grow at an annual rate of about 5-8% going forward due to aging populations in developed countries and population growth in developing countries. The role of medicine and pharmaceuticals is also becoming even more important as the development of innovative new treatment methods such as gene therapy and cell therapy are becoming more widespread.

In order to respond to this situation, the rapid supply of pharmaceuticals has shifted from individual countries and companies to a variety of alliances and other international systems of cooperation.

New medium-term management plan growth strategies

Strengthening existing businesses

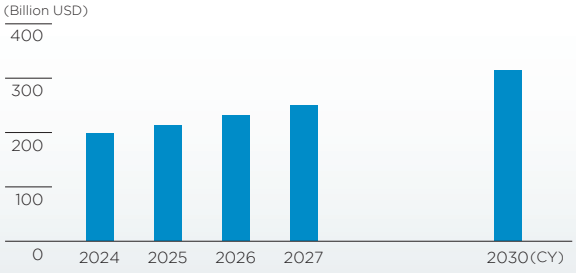
In our CDMO business, we merged with and absorbed API Corporation in fiscal 2024. We will build an optimal production system with two bases in Yamaguchi Prefecture (Ube) and Fukuoka Prefecture (Yoshitomi), maximize capacity, and reduce costs to achieve higher profitability and strengthen competitiveness. In the area of drug discovery research, we will focus not only on conventional small molecule drugs but also on new modalities such as antibody-drug conjugates (ADCs). We will also utilize open innovation and alliances with other companies to speed up and further vitalize our research activities.

Creation of new life science business

We will aim to create a new life science business by combining the organic chemistry and biochemistry technologies and expertise cultivated by our pharmaceutical business to date with new technological resources both internal and external.

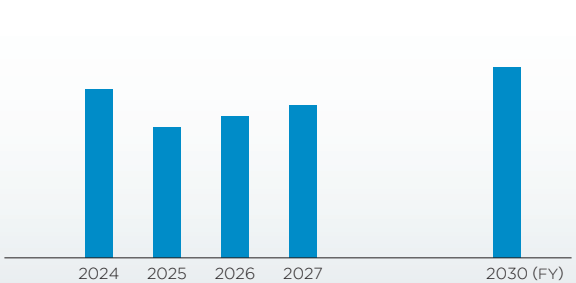
As an example, we will explore commercialization in the areas of drug discovery research support and regenerative medicine with biomimetic systems and cell supernatant production that utilize cell culture systems based on polyimide porous membranes. We are also looking at M&A to accelerate this process.

Global small molecule API market growth outlook



Note: Estimates by UBE based on various data

Pharmaceutical business net sales



Non-financial capital that supports our strategies (sources of competitiveness)

Technological capabilities: In addition to our conventional drug discovery and organic synthesis technologies, we possess a lineup of nucleic acid and enzyme reaction technologies as well as technologies for handling high-potency pharmaceuticals. Further, our strengths include our solution services based on a track record of producing and developing high-quality APIs supported by advanced quality assurance systems to ensure compliance in Japan, the United States, and Europe.

Alliances: Not limiting ourselves to in-house research, we are also promoting efficient R&D by proactively partnering with external organizations, such as investing in the University of Osaka venture Luxna Biotech Co., Ltd., participating in the RNA-targeted drug discovery technology development project conducted by the Japan Agency for Medical Research and Development, and making use of open innovation.