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2023.6.1500



NIPPON SHOKUBAI CO.,LTD.

COMPANY PROFILE

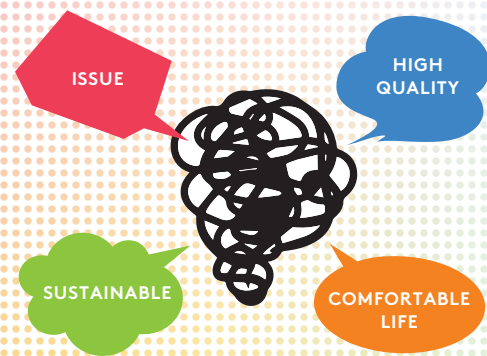
Let's Ask Nippon Shokubai!

When you wish to add comfort to your daily life or prosperity to society,
remember us, Nippon Shokubai.

Let us know your thoughts and concerns.

We enhance product performance and quality and commercialize
ambitious ideas through continued dialogue and proposals regarding challenges.

We continually push the boundaries of chemistry,
bolstering our ability to deliver solutions,
so do not hesitate to get in touch.





01

For the Challenge

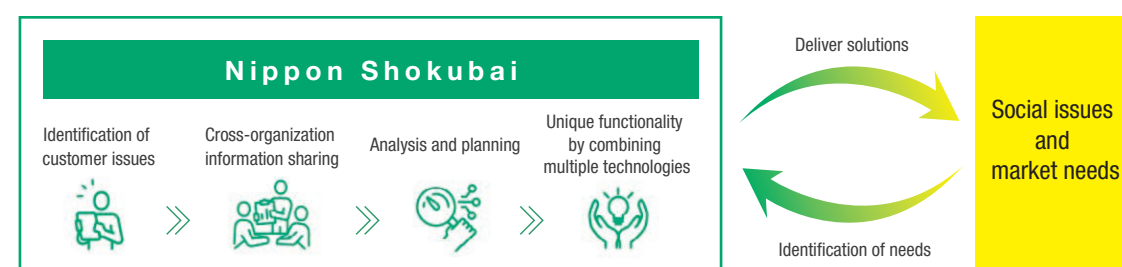
(Issue Identification + R&D Capabilities)

Issue identification to quickly grasp customers' issues and market needs.

Research and development, including corporate research to develop new technologies and create next-gen materials, and business division research to quickly and accurately address customer requirements.

These two strengths are the cornerstones of our ability to deliver solutions.

Optimal solutions through accurate identification and analysis of customer and market issues



One in Four Employees is a Researcher

Our 600 researchers, one in four employees, coordinate with other divisions to deliver various solutions and create new materials. We have combined and enhanced our three core technologies – Inorganic Catalyst, Organic Synthesis, Polymer – to deliver value-added solutions to global issues. We will continue to solve customers' issues with our world-class R&D capabilities.



Using Data Science to Accelerate R&D

We promote data-driven material and process development and address quickly to customer requirements by combining IT with chemical expertise. Hence, we are developing researchers skilled in experiments and data analysis and are building a centralized infrastructure to manage experiment data. We are also innovating new systems to match customer requirements with our solutions to enhance our ability to deliver solutions.



Open Innovation to Promote Business Creation

We foster open innovation through partnerships with Japanese and international universities, research institutes, and startups, aiming to secure unique technologies for accelerated commercialization and a competitive edge. The establishment of Nippon Shokubai Research Alliance Laboratories within Osaka University graduate school of engineering is a flagship initiative. We aim to foster new technologies, businesses, and talent by combining Osaka University's medical-engineering prowess with our technology.





02

For Stable, High-Quality Manufacturing

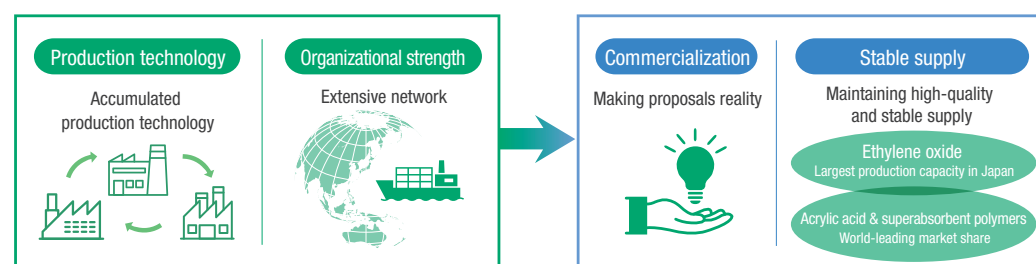
(Production Technology + Organizational Strength)

Our production technology and organizational strength enable us to actualize proposals and maintain a stable supply for our customers.

The technological capability to safely and stably produce high-quality products accumulated through the operation of plants designed in-house, supported by extensive and close-knit global networks.

Production technology and organizational strength bolster our vision-driven production.

Strength of providing a stable supply of high-quality products



Production Technology

Involvement in Plant Construction from the Design Stage

We do not make compromises in the design and construction of our plants. Our engineers are actively involved in the design, procurement of building materials and equipment, and construction management, typically outsourced to outside contractors, enabling us to accumulate production technology and engineering expertise. This involvement enables enhanced quality, production capacity, and unimpeded improvements and upgrades after the plant is up and running. We have also achieved seamless completion and production startup in construction overseas.



Scale-Up Experiments Based on Research-Production Collaboration

We have extensive knowledge in process design for the safe and stable mass production of chemical materials with high performance and quality produced in our laboratories. We search for the safest and most efficient production processes by repeating scale-up experiments conducted in close cooperation between research and production divisions.



Integrated Production Using Our Own Facilities

We conduct integrated production of high-quality chemical materials from raw materials at our own facilities, centered on one of our main products, superabsorbent polymers. Our integrated production enables a swift response to demand shifts from societal changes, ensuring stable product supply.



Organizational Strength

A Network that Enables World-Class Production Volume and Stable Supply

Our expansive network of plants in six global locations facilitates world-class production and a stable supply of superabsorbent polymers and their raw material, acrylic acid. Beyond stable facility operations, we flexibly meet global demand by ensuring supply from multiple locations. Our logistical capabilities also contribute to the stable supply of products.





03

For Sustainability

The future challenges we need to address are increasingly diverse. We work hard to balance environmental conservation and improving daily life. We do this through conversion of raw materials into biomass and materials that help to create a hydrogen-based society.



04

For Comfortable Living

Chemicals are an indispensable part of our lives. They are closely related to our daily lives, used in a variety of products such as electronic devices, cosmetics, disposable diapers for child and nursing care. At Nippon Shokubai, we continue to produce products that support various aspects of life and make our lives more prosperous and comfortable.



Building a Safe Future by Improving the Strength and Durability of Buildings

Our materials enhance concrete strength and exterior wall durability, helping to prevent building deterioration and fostering disaster-resilient cities. They support social infrastructure and are used widely in modern construction, such as for large trestles and houses.



Actively Promoting Conversion of Raw Materials into Biomass

We are promoting the shift to biomass in our core products, such as acrylic acid and ethylene oxide, to reduce environmental impact. We are developing a new manufacturing process for acrylic acid using catalyst design and mass production technology, aiming for commercialization by 2030.



Solving the Challenges of a Hydrogen Society Driving the Expansion of Clean Energy Usage

We address issues in the practical use of hydrogen energy by creating materials for green hydrogen production and catalysts for utilizing ammonia, a hydrogen carrier. We are driving down CO₂ emissions by expanding the use of clean energy.



Supporting Comfortable Lifestyles with World-Leading Production Volume

We are a world-leading producer of acrylic acid, widely used as a raw material for superabsorbent polymers, paints, adhesives, detergents, and other products. In particular, our production of superabsorbent polymers ranks the world's largest, according to our research. Thanks to superior water absorption, our polymers are used in many products, including disposable diapers, coolants, and body warmers, enhancing everyday comfort.



Promoting Development in Electronics with Materials Developed Using Proprietary Technology

Our products are also used in electronics-related materials such as optical films, color filters, sealing materials, and lighting. We leverage our unique, long-standing technology to support the fast-paced electronics industry and realize a comfortable digital society.



Fostering Life Science Business to Contribute to Health and Beauty

We also actively adopt new technologies through open innovation. We amalgamate these with our technologies to acquire and market new technologies like contract manufacturing of middle-molecular drugs, drug development support, and next-generation cosmetic ingredient development.



Products Created by Taking on Customer and Global Issues.

In addressing our customers' issues, we have achieved multiple Japan and world firsts through consistent efforts to understand market needs and integrate and evolve our solution delivery, production technology, and organizational strength.

Since our success in Japan's first commercial production of phthalic anhydride in 1941, we have proactively solved customer issues and persistently created high-value-added products.



1941



First Commercial Production of Phthalic Anhydride

Developing a proprietary method to oxidize naphthalene using a vanadium catalyst, we were the first in Japan to commercially produce phthalic anhydride. Initially, demand for this product increased as a raw material for aircraft paints and plastics. Later, this key plasticizer for vinyl chloride resin contributed to the growth of the vinyl chloride industry. Home-grown technology underpins our operations as a chemical manufacturing company.



1970



A New Acrylic Acid Production Process

We were the first in the world to commercialize acrylic acid through direct oxidation of propylene. This enabled low-cost, high-volume acrylic acid production and derivative products, including paint raw materials, adhesive raw materials, and superabsorbent polymers. Leading acrylic acid manufacturers worldwide have adopted our production technology and catalysts.



2006



ACRYVIEWA™ Commercial Production

We used new polymer design technology to successfully commercialize ACRYVIEWA™, unique acrylic resins for optical film with outstanding transparency, optical properties, and heat resistance. ACRYVIEWA™ enables larger, thinner liquid crystal displays for televisions, smartphones, tablets, and other devices.

1940

Base technology
Phthalic anhydride

1950

Maleic anhydride

1960

Ethylene oxide

1970

Acrylic acid

1980

Methacrylic acid

1990

Wastewater treatment catalysts for catalytic wet air oxidation

2000

N-Vinyl pyrrolidone

2010

Electrolyte for lithium-ion batteries: LIFSI (IONEL™)

2020

Cosmetic ingredients

Contract manufacturing of oligonucleotides

Cyclopolymerization monomer (AOMA™)



2013

IONEL™ Mass-Production Technology

Applying a unique manufacturing method, we established proprietary mass-production technologies that are the first of their kind worldwide for IONEL™, which is high-purity LIFSI used as an electrolyte for lithium-ion batteries. IONEL™ is effective over a wide temperature range in improving battery life, input/output performance, capacity retention after storage, and suppression of battery swelling.



Solving EV Issues and Accelerating Adoption



IONEL™ is also being used in EVs, for which demand is growing rapidly. Adopting a local production for local consumption strategy for IONEL™, we are swiftly establishing production and sales infrastructure in key EV markets like China and Europe to speed up global growth.

Successful Mass-Production of Superabsorbent Polymers

We began mass-producing AQUALIC™ CA, known as superabsorbent polymers, in 1985 using acrylic acid as a raw material, and we continue to be the global technology and production leader in this market. Our superabsorbent polymers have excellent water absorption and retention of 100 to 1,000 grams of water per gram of polymer. Mainly used in disposable diapers, our superabsorbents improve quality of life and have also served to prevent desertification.

1985



Successful Ethylene Oxide Production

While many Japanese petrochemical companies in the 1950s relied on imported technologies, we used our own catalytic oxidation technology to successfully commercialize ethylene oxide for the first time in Japan. This contributed significantly to the development of Japan's petrochemical industry, with ethylene oxide used widely today as a raw material in polyester, detergent, construction materials, and more.

1959



Environment & Energy

We aim to realize a sustainable society by reducing environmental impact and addressing energy issues with our unique technologies and development capabilities.



Water

Solving Global Water Issues

We respond to increasingly challenging effluent regulations and water shortages with efficient wastewater treatment technology and next-generation seawater desalination technology. We are contributing to solving global water issues.

EPOMIN™ and HIDST™

Utilizing their abilities to bind with metal ions in water, they are used to remove harmful heavy metals, recycle rare metals, and maintain the cleaning power of surfactants.



AQUALIC™ L

This agent prevents scale (deposits of insoluble salts in water), which can cause failures, and prevents piping blockages in boilers and cooling towers and reductions in equipment efficiency.



Environmental Purification

Highly Efficient, Low-Cost, Eco-Friendly Purification Treatment

Stricter environmental regulations, particularly in Europe, have led to growing interest in the review of exhaust gas and wastewater treatment methods and in the reuse of treated water. At Nippon Shokubai, we contribute to environmental purification through our catalytic technologies.



Wastewater Treatment Catalysts

(Wastewater treatment catalysts for catalytic wet air oxidation)

Using a proprietary solid catalyst, the catalysts efficiently oxidize and decompose toxic substances in wastewater. The heat generated during decomposition effectively reduces CO₂ emissions compared to incineration treatment.



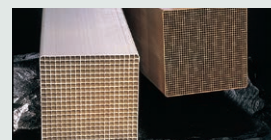
Automotive Catalysts

Automotive catalysts, which we began producing in 1974, are installed in mufflers to remove toxic substances from exhaust gas.



Exhaust Gas Treatment Catalysts

The catalysts efficiently decompose toxic and odor-causing substances contained in exhaust gas from thermal power plants, incinerators, and various factories over a long period of time.



Batteries

A Brighter Future with Improved Battery Performance

With the expansion of new energy markets, we are globally developing several products, including lithium-ion batteries and solid oxide fuel cells (SOFC).



IONEL™

IONEL™, our lithium-ion battery electrolyte, solves issues with lithium batteries, which are prone to degradation at high temperatures and poor performance at low temperatures. It enables stable quality over a wide temperature range, longer battery life, and higher performance.



Electrolyte Sheet for SOFC

Solid oxide fuel cells (SOFC) are expected to be spread rapidly as a next-generation distributed clean energy system due to their high power generation efficiency. We have achieved mass production of zirconia sheets, a key component in SOFC, gaining acclaim from SOFC manufacturers worldwide.



Hydrogen



Promoting the Use of Green Hydrogen

Hydrogen is being considered for use as a fuel for automobiles, households, and even for aircraft as it emits no CO₂ when used. In particular, "green hydrogen," produced using renewable energy, is expected to be a sustainable clean energy source.



SOLUTION for LIFE

Ammonia Cracking Catalysts

Ammonia, which can be decomposed to extract hydrogen, is an excellent hydrogen carrier due to its ease of liquefaction, storage, transport, and cost-effectiveness. We are advancing the commercialization of ammonia cracking catalysts, vital for hydrogen extraction.



Separators for Alkaline Water Electrolysis

Separators for alkaline water electrolysis are materials used in alkaline water electrolysis, which is gaining attention as a method of producing green hydrogen using renewable energy. Our proprietary organic-inorganic composite and sheet molding technologies help reduce the cost of green hydrogen.



Chemistry to Drive Reform

Electronics & Imaging

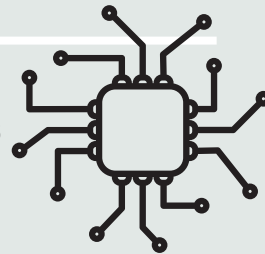
We address customer requirements, which are becoming more sophisticated with the advancement of digital technology, with highly functional materials.



Semiconductors & Communications

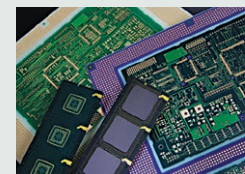
Establishment of Mass-Production Technology for New Materials

The digitalization of society has led to dramatic growth in semiconductors and telecommunications markets that underpin digitalization. We support the development of electronic devices through the establishment of mass-production technology for new materials required for semiconductors.



ACRYCURE™ HD

ACRYCURE™ HD provides flexibility to heat-dissipation sheets that dissipate heat from electronic devices. Its siloxane-free design eliminates the risk of conductivity problems in electronic circuits.



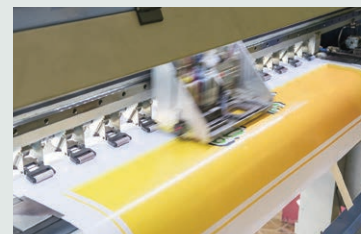
SEAHOSTAR™

SEAHOSTAR™ provides high-quality and reliability as a filler in technologically innovative fields due to its fine silica particle distribution and purity.

Packaging & Printing

Increased Demand in the West Driven by Stricter Environmental Regulations

The UV inkjet market is growing steadily due to the spread of digital printing and stricter volatile organic compounds (VOC) regulations. Our eco-friendly, solvent-free UV ink materials are used in a variety of applications.



VEEA™

VEEA™, with its superb UV curability and low viscosity, is widely used in UV inkjet inks that require delicate printing, such as label and QR code printing.

AOMAT™

Our unique monomer design eliminates the hardness and brittleness of acrylic resins, creating a hard and tough monomer. AOMAT™ is attracting attention as a component of resins, adhesives, and coating materials for 3D printers.



Displays

Enabling High-Performance Electronic Information Materials

Displays are becoming larger, thinner, and more power-efficient, requiring more challenging performance requirements such as high transparency, high resolution, and high durability. We offer materials that solve these issues from a wide range of angles.



ACRYVIEWA™

An acrylic resin for optical films that has high transparency, optical properties, and heat resistance through a new polymer design technology. ACRYVIEWA™ greatly contributes to larger and thinner size of liquid crystal displays for televisions, smartphones, tablet devices, and other devices.



ACRYCURE™

Developed as a pigment dispersion-resistant polymer for high contrast and high color purity. ACRYCURE™ has excellent heat resistance and coloring resistance as well as pigment dispersibility.

Fine Particles

The acrylic-based fine particles EPOSTAR™ have excellent heat resistance, solvent resistance, and dispersibility. We have a variety of proprietary fine-particle materials ranging from nano to micron size. One example is the zirconia nanoparticles, ZIRCOSTAR™, ideal for coating and molding materials that require transparency and a high refractive index.



SOLUTION for LIFE

Challenges for the Future of Displays

While LCD and OLED displays are gaining traction worldwide, development of diverse next-generation displays for automotive, VR, and aerial displays is also underway, requiring a variety of constituent materials. We aim to develop the display market and create a comfortable digital society by offering products that apply and combine functions such as optical, thermal, and dispersion properties.



Chemistry to Support Our Lives

Daily Use

We help make our lives convenient and comfortable by offering products closely related to food, clothing, and housing, including healthcare and cosmetics.



Consumer Products

Providing Prosperity and Comfort to Daily Life

Our eco-friendly products are used in everyday items such as diaper materials, detergents, and paints and support comfortable living as daily necessities.



Superabsorbent Polymers (AQUALIC™ CA) (Disposable diapers)

Global production leader in the superabsorbent polymers market. One gram of superabsorbent polymer can absorb 100 to 1,000 grams of water and is used in disposable diapers, body warmers, air fresheners, and other products.



SOFTANOL™ (Detergent)

Surfactants used in a wide range of fields including laundry and kitchen detergents, textile auxiliaries, and metal cleaners. It is also highly regarded for its excellent biodegradability and eco-friendliness.



Acrylates (Paint)

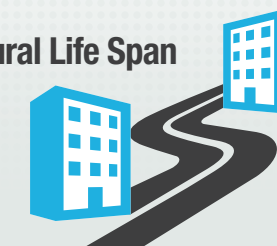
As a top-class manufacturer, we offer global customers a reliable supply of high-quality acrylic esters. It is widely used as a material for paints and adhesives.



Infrastructure & Housing

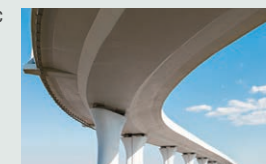
Creating a Recycling-Oriented Society through Extended Structural Life Span

We promote a recycling-oriented society by mitigating degradation and disaster damage to public works and buildings, with our materials to enhance the strength and durability of concrete and ultra weatherability resins for architectural coatings.



AQUALOC™ (Concrete)

Our proprietary polycarboxylic acid-based polymer AQUALOC™ increases the strength and durability of concrete and significantly improves workability.



UWR™ (Resins for architectural coating)

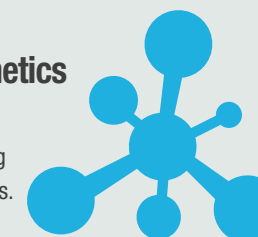
It leverages hindered amine UV stabilizers to achieve unprecedented ultra weatherability. It can be used in various coatings and paints.



Life Science

Making Strides in the Growing Fields of Health, Medical, and Cosmetics

In the health and medical field, we operate businesses that provide contract manufacturing of middle-molecule APIs (oligonucleotides and peptides) and drug development support. We are making progress in fields related to people's health and beauty, such as ingredient development in cosmetics.



Health & Medical

We will support health and medical care by providing APIs and drug development service through contract manufacturing of middle-molecular APIs and development of DDS* technology.



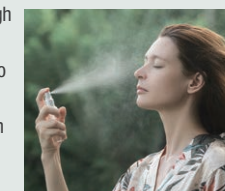
*DDS: Drug delivery systems are technologies for controlling drug release under the right amount, timing, and location.

Contract Manufacturing of Middle-Molecule APIs

We can accommodate a variety of scales from the exploratory research stage (non-GMP) to the clinical stage (GMP). We also support our customers' drug development by developing synthetic methods, scale-up studies, and analytical methods.

Cosmetics

Under "Contributing to the beauty through the power of chemistry," we utilize proprietary materials and technologies to develop next-generation cosmetic ingredients to address beauty and health concerns. Collaborating with cosmetics manufacturers, we aim to provide high-added-value materials and create a "Proposal type cosmetic business."



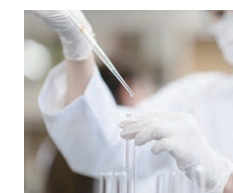
Skin & Hair Care

We develop multifunctional polymers for skin and hair protection, specific polymer to improve hair dyeability, and advanced processing technologies for enhanced skin absorption of active ingredients. We address the needs for cosmetic ingredients such as personal care and multifunctional ingredients in skin care, hair care, and makeup markets.

SOLUTION for LIFE

Heteroduplex Oligonucleotide (HDO)

HDO is an innovative technology that addresses issues of stability and side effects from conventional oligonucleotides. It delivers targeted therapeutic agent delivery to specific disease sites, offering promising solutions. We aim for the early commercialization of HDO together with our Group companies.



The Power of Combining Biology with Chemistry

We combine chemical and natural, and bio-material technologies to develop cosmetic ingredients and technologies that are highly functional and in line with customer needs. We will develop and offer customers unique materials, such as anti-aging plant extracts, bio-materials derived from microorganisms, and fermentation and processing technologies that enhance the functionality of natural materials.

In Japan and overseas.
Our expansive network supports
our ability to deliver solutions.

We encompass companies with expertise in businesses ranging from chemical manufacturing to processing, transport, and trading. We also have a global production and distribution network spanning Europe, America, and Asia. By leveraging synergies within our network, we quickly and accurately address customer requirements.



Himeji Plant

The Himeji Plant occupies a site of 900,000 square meters. As our primary plant, it manufactures many products, including acrylic acid and superabsorbent polymers.



Kawasaki Plant

The Kawasaki Plant comprises the Chidori Plant and the Ukushima Plant. Here, in 1959, we were the first in Japan to commercialize ethylene oxide using Japanese technology, and today this plant is home to one of Japan's largest production facilities for ethylene oxide and its derivative products.

Domestic Subsidiaries & Affiliates

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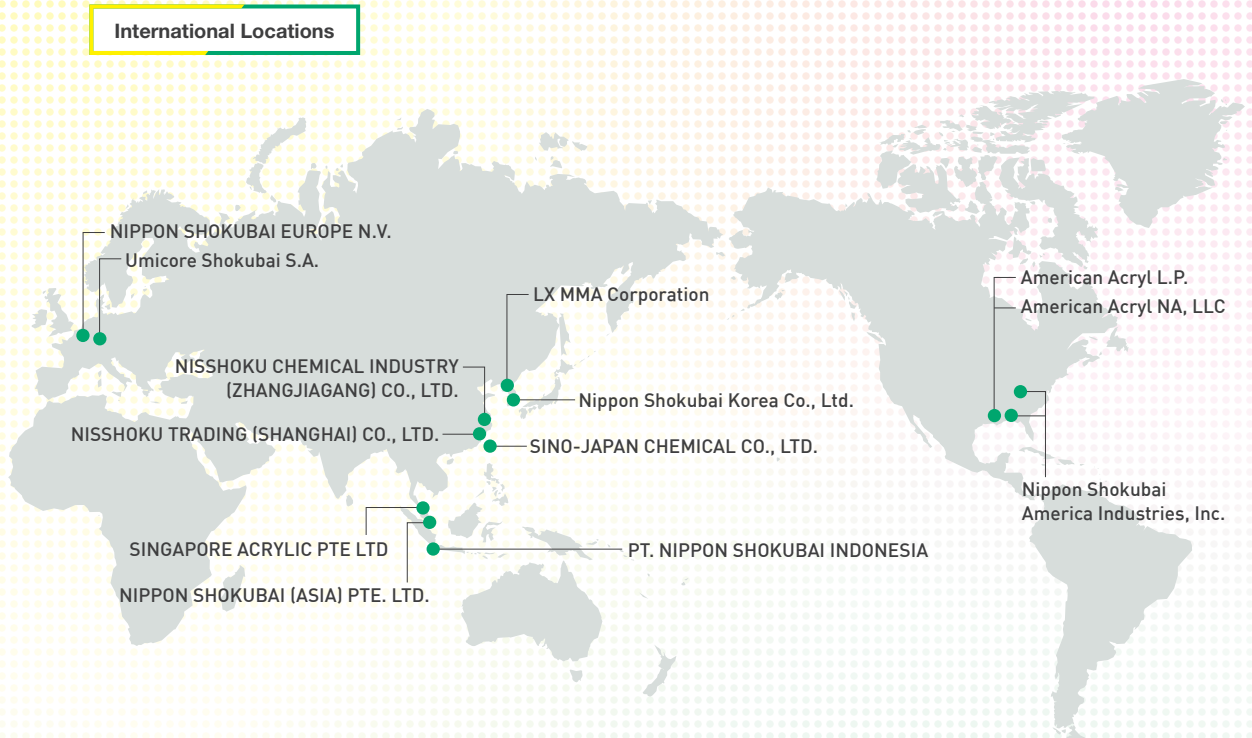
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FAX +81-6-6221-1474

NS Green Co., Ltd.
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FAX +81-79-273-4744

CATOX Co., Ltd.
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Overseas Subsidiaries & Affiliates

U.S.

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American Acryl NA, LLC
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Texas 77507, USA

American Acryl L.P.
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Texas 77507, USA

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NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD. (日触化工(张家港)有限公司)
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SINO-JAPAN CHEMICAL CO., LTD. (中日合成化学股份有限公司)
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FAX +886-2-2341-4628

LX MMA Corporation
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Outline

Company name

NIPPON SHOKUBAI CO., LTD.

Established

August 21, 1941

Share capital (As of March 31, 2023)

25.0 billion yen

Revenue/Net sales (April 2022–March 2023)

419.6 billion yen (Consolidated revenue)

257.0 billion yen (Non-consolidated net sales)

Number of employees (As of March 31, 2023)

4,574 (Consolidated) 2,443 (Non-consolidated)

Locations

Osaka Office

Kogin Bldg., 4-1-1 Koraibashi, Chuo-ku, Osaka

541-0043, Japan

TEL +81-6-6223-9111

Tokyo Office

Hibiya Dai Bldg., 1-2-2 Uchisaiwai-cho, Chiyoda-ku,

Tokyo 100-0011, Japan

TEL +81-3-3506-7475

Kawasaki Plant

(Chidori Plant)

14-1 Chidori-cho, Kawasaki-ku, Kawasaki, Kanagawa

210-0865, Japan

TEL +81-44-288-7366

(Ukishima Plant)

10-12 Ukishima-cho, Kawasaki-ku, Kawasaki,

Kanagawa 210-0862, Japan

TEL +81-44-288-5715

Himeji Plant and Himeji Research Center

992-1 Nishioki, Okinohama, Aboshi-ku, Himeji, Hyogo

671-1282, Japan

TEL +81-79-273-1131 (Plant)

TEL +81-79-273-1145 (Research Center)

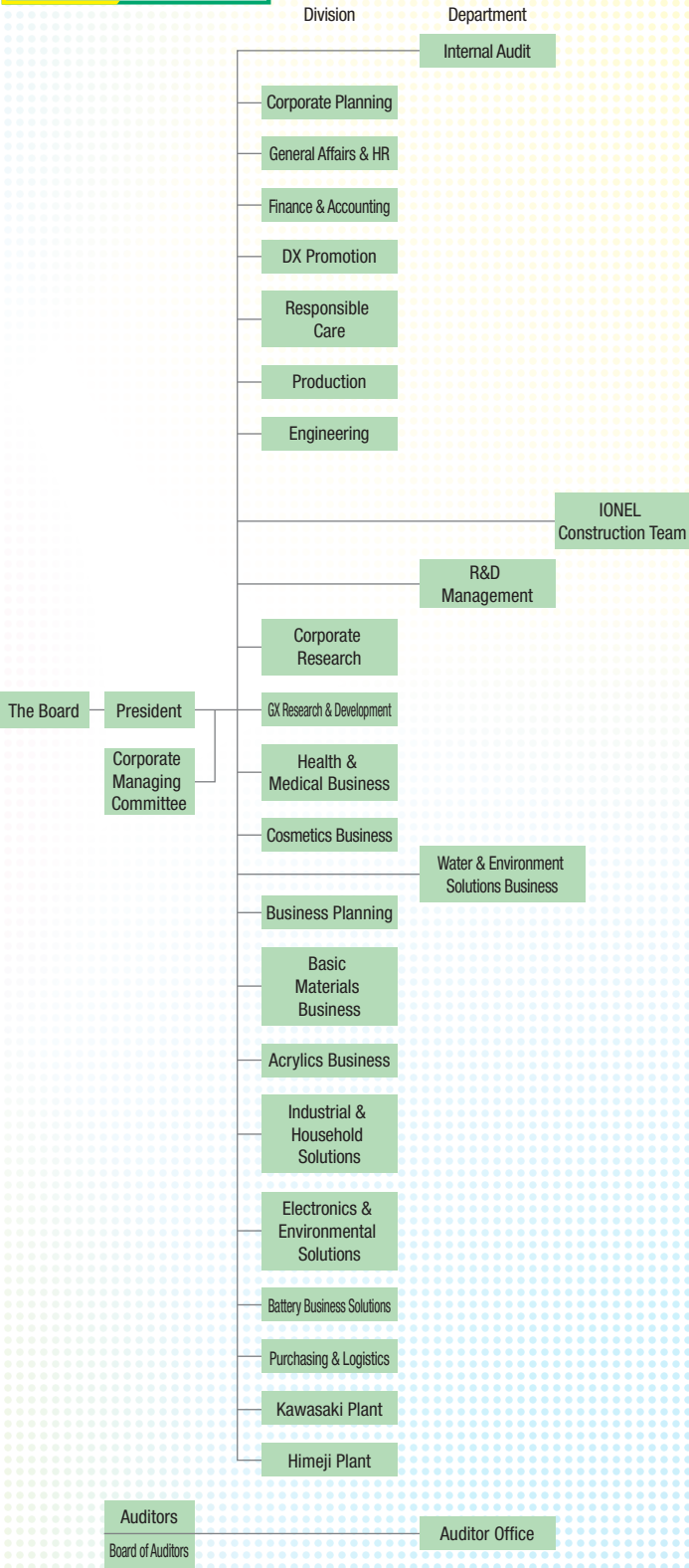
Suita Research Center

5-8 Nishi Otabi-cho, Suita, Osaka 564-0034, Japan

TEL +81-6-6317-2202

Organization Chart

(As of June, 2023)



Nippon Shokubai Group Mission

TechnoAmenity

Providing prosperity and comfort to people
and society with our unique technology

True prosperity and comfort encompass not only economic and material aspects, but also social and mental well-being, including harmony with the global environment, diversity, fairness, safety, and security. By implementing our group mission, "TechnoAmenity," our Group will contribute to realizing a sustainable society and continue to provide prosperity and comfort to people and society.

Values

Respect Diversity

We will create new value by respecting the unique traits of each person.

Pioneer New Possibilities

We will courageously provide solutions to customer challenges and social issues.

Contribute to Global
Environmental Preservation

We will work to ensure a better global environment is passed down to the next generation.

Code of Conduct

Every person working at the Nippon Shokubai Group will carry out business activities with a commitment to the guiding principles below.

01

Realizing a sustainable society

We will contribute to the realization of a sustainable society by putting the Group Mission into practice.

02

Safety first

We will execute our business activities by always ensuring both internal and external safety.

03

Compliance

We will enforce thorough-going compliance in every area.

04

Respect for human rights

We will support international human rights standards and respect the human rights of all people touched by our business activities

05

Fair and honest business dealings

We will engage in fair and sincere business activities with all of our stakeholders.

06

Providing value to our customers

We will provide materials and solutions needed by customers.

07

Preserving the environment

We will help reduce our environmental impact and help tackle environmental issues through technology.

08

Communicating with stakeholders

We will actively disseminate information and dialogue with stakeholders.

09

Promoting active participation
of diverse human resources

We will recognize and respect diversity so that every person and organization reaches their full potential.

10

Contributing to local communities

We will contribute to the development of local communities as a member of those communities.

Safety Philosophy

Safety takes priority over production.

For Further Transformation

Social trends

- Population growth • Aging population
- Development of emerging countries • Diversified needs
- Development of digital technology, etc.

Social issues

- Realization of safe, secure and healthy life
- Response to climate change issues
- New materials to support technological development, etc.

Long-Term Vision

TechnoAmenity for the future

FY2030 Goals

- Provide materials and solutions required by people and society
- Become a chemical company that keeps evolving by identifying social trends
- Develop with various stakeholders inside and outside the company

Three Transformations

We are promoting the following three transformations in pursuit of our goals for FY2030.

1

Business transformation

We will transform the portfolio from existing fields to growth fields. We will drastically reshape the Materials business to strengthen our business foundation while expanding the highly profitable Solutions business.

2

Strategic transformation for environmental initiatives

We will augment our achievement of sustainability toward the realization of carbon neutrality by 2050, for example, by reducing CO₂, recycling, and implementing decarbonization initiatives.

3

Organizational Transformation

We aim to transform into an organization with sustainable growth and a company where diverse human resources are motivated to work. Specifically, we will promote delegation in an effort to expedite decision-making. We will also introduce a human resources management system to appreciate talent who take on challenges.

Become a chemical company that keeps evolving by flexibly responding to social and environmental changes

Materials Business

Provides high-quality materials worldwide through sophisticated production technologies.

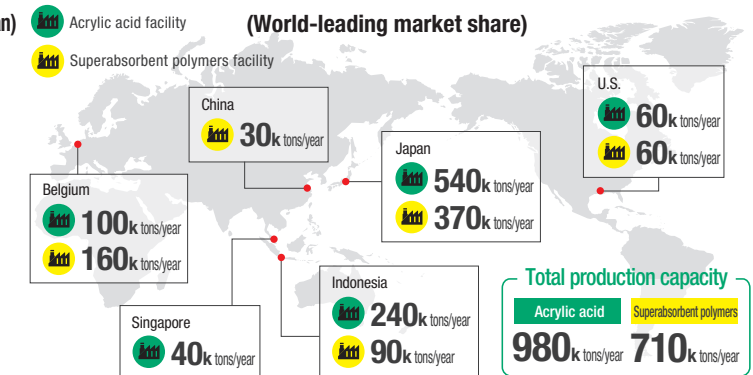
Ethylene oxide

(Largest production capacity in Japan)



Acrylic acid & superabsorbent polymers

(World-leading market share)



Solutions Business

Provides unique functional products that can satisfy customer needs in a wide range of industries by capitalizing on our strengths in developing key materials.

Environment & Energy

Water
Environmental purification
Batteries
Hydrogen

Electronics & Imaging

Semiconductors & Communications
Packaging & Printing
Displays

Daily Use

Consumer products
Infrastructure & Housing
Life science

We believe that promoting sustainability activities is equivalent to practicing the Group Mission.

Sustainability Policy

We conduct business activities with the determination to contribute to society, under the Group Mission of "TechnoAmenity: Providing prosperity and comfort to people and society, with our unique technology." Based on this belief, we take a comprehensive view of our corporate behavior that encompasses the economy, society, and the environment. We, therefore, prioritize corporate governance, compliance, Responsible Care, risk management, human rights and labor, social contribution, and information disclosure. In implementing actions to increase our corporate value, we emphasize dialogue with our customers, business partners, employees, the communities we serve, public administrators, shareholders and investors, and all other stakeholders. We also endeavor to solve social issues through business activities, thereby contributing to the realization of a sustainable society.

Tackling climate change

Of all the environmental issues, climate change is a company-wide issue that extends beyond the manufacturing and research stages. Therefore, it has been decided that the TechnoAmenity Promotion Committee, which determines the core policies and strategies for our company management with regard to sustainability, should examine the issue intensively, and we are accelerating activities toward achieving carbon neutrality in 2050.

Water resources conservation

We believe that ensuring the sustainability of water is an essential prerequisite to the continuity of our business and a mission we should take up for the sake of society. For water resource conservation, we work on efficient use of water and water pollution control, and we also aim to contribute to the resolution of water issues through our products and technologies.

Diversity & Inclusion

We have formulated a D&I Promotion Policy in order to respect the diversity of our employees. We recognize each individual's diverse ability, individuality, and value and unify them to enhance the collective strength of the Nippon Shokubai Group. We are implementing various measures to become an organization in which everyone can flourish in their own way.

Human rights

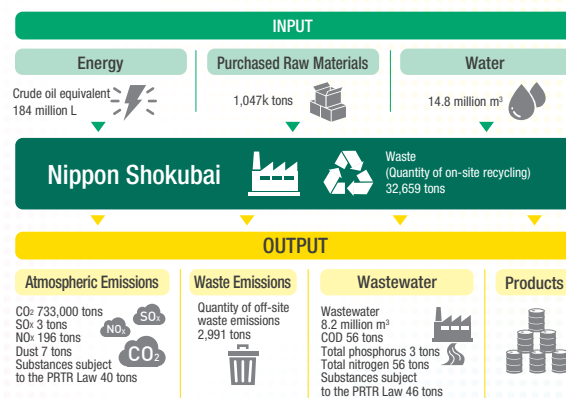
We regard respect for human rights as one of the foundations of our business continuity. The Group promotes initiatives to respect human rights in line with human rights norms such as the Universal Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the United Nations Guiding Principles on Business and Human Rights. In addition, in accordance with the Group's basic policy on human rights, we will strive to promote understanding of respect for human rights throughout our supply chain to ensure that we are not complicit in human rights violations.

Corporate citizenship

In order to contribute to the realization of a sustainable society by putting into practice our corporate philosophy, "TechnoAmenity: Providing prosperity and comfort to people and society, with our unique technology," the Nippon Shokubai Group conducts corporate citizenship activities aiming to resolve social issues that are difficult to solve through business activities alone. We have defined the three key areas of "Community Co-Creation," "Developing the Next Generation," and "Realization of "Leave No One Behind" and are promoting initiatives in these areas.

Governance

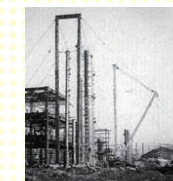
In accordance with the Group's corporate philosophy, we consider viable corporate governance to be essential and have adopted initiatives toward increasing our corporate value and achieving sustainable growth. We ensure the rights and equality of our shareholders and maintain an open dialogue, collaborate with various stakeholders as appropriate, disclose information as appropriate and ensure transparency, ensure that the roles of Board Meeting and management teams relate to the appropriate execution of duties, ensure appropriate supervision of the execution of these duties and strengthen and enhance our internal control systems.



Our history is a course of continuous challenge and innovation.

History

Established as Osame Gosei Kagaku Kogyo Co., Ltd. -1941
Opened Suita Plant -1943
Company renamed Nippon Shokubai Kagaku Kogyo Co., Ltd. -1949
Listed on the first section of the Osaka Securities Exchange -1952



First Ethylene Oxide and Ethylene Glycol Plant under construction (1959)



Himeji Plant (1961)

Established "NA Industries, Inc. (currently Nippon Shokubai America Industries, Inc.) -1988

Company renamed NIPPON SHOKUBAI CO., LTD. -1991

Established "PT. Nisshoku Tripolyta Acrylindo" (currently PT. NIPPON SHOKUBAI INDONESIA) -1996

Established American Acryl NA, LLC and American Acryl L.P. -1997
Established NIPPON SHOKUBAI (ASIA) PTE. LTD. -1998
Established NIPPON SHOKUBAI EUROPE N.V. -1999

Acquired acrylic acid business from Sumitomo Chemical Co., Ltd. -2002
and transferred methyl methacrylate monomer business to Sumitomo
Established NISSHOKU CHEMICAL INDUSTRY (ZHANGJIAGANG) CO., LTD. -2003

Acquired acrylic acid business in Singapore from Sumitomo Chemical Co., Ltd. -2004

Established NISSHOKU TRADING (SHANGHAI) CO., LTD. -2007

Acquired a majority share in NIPPON NYUKAZAI CO., LTD. and SINO-JAPAN CHEMICAL CO., LTD. -2008

Closed Suita Plant and built a R&D center on the property -2015
Established Nippon Shokubai Korea Co., Ltd. -2015

Acquired a majority share in Rena Therapeutics Inc. -2019

History of Technological Innovation

1940

1941- First in Japan to commercially produce phthalic anhydride

1952- Successfully mass-produced maleic anhydride through benzene oxidation
1953- Used proprietary technology to commercially produce unsaturated polyester resin for the first time in Japan
1955- Launched production of fumaric acid

1960

1959- Used proprietary technology to commercially produce ethylene oxide for the first time in Japan
1960- Received the Okochi Memorial Prize for commercializing ethylene oxide and ethylene glycol
1962- Launched production of ethanolamines
1967- Received the Society of Synthetic Organic Chemistry, Japan Award (Technological section) for establishing the production technology for phthalonitrile and benzonitrile using ammoxidation process
1969- Launched production of ethyleneimine
1970- Commercially produced acrylic acid and acrylates by oxidizing propylene for the first time in Japan
1972- Launched production of secondary alcohol ethoxylates
1972- Received the Okochi Memorial Production Prize for acrylic acid and acrylates production technology
1973- Received the Director-General of the Japan Science and Technology Agency Award for acrylic acid production technology
1974- Launched production of automotive catalysts
1976- Received the Japan Petroleum Institute Award for Technological Progress for secondary alcohol ethoxylate production technology
1976- Kawasaki First Factory received an award from the Minister of International Trade and Industry as a good production site for high-pressure gas
1978- Received the Okochi Memorial Production Prize for secondary alcohol ethoxylate production technology
1979- Launched production of spherical fine particles
1979- Himeji Plant received the Director-General of the Agency for Natural Resources and Energy Award as a good production site for heat management
1982- Completed demonstration plant for methacrylic acid and methyl methacrylate
1985- Launched full-scale production of superabsorbent polymers

1980

1987- Launched production of polycarboxylate ether polymers
1987- Received the Japan Petroleum Institute Award for methyl methacrylate production technology
1987- Received the Technological Award from the Catalysis Society of Japan for developing catalysts for methacrylic acid production
1987- Received the Society of Synthetic Organic Chemistry, Japan Award (Technological section) for establishing and commercializing a highly efficient synthesis process for polyfluoro-aromatic compounds

1989- Received the Technological Award from the Catalysis Society of Japan for developing catalysts for ammonia dry-type flue-gas denitration

1992- Received the Chemical Society of Japan Award for Technical Development for developing a new production method for ethyleneimine

1996- Received the Chemical Society of Japan Award for Technical Development for developing and commercializing a new production process for maleimides
1997- Launched production of dioxin decomposition catalysts

2000

2000- Commercialized fuel-cell materials
2002- Launched production of N-Vinyl pyrrolidone

2003- Received the Kirkpatrick Chemical Engineering Achievement Award for N-Vinyl pyrrolidone production technology
2003- Decommissioned and dismantled the phthalic anhydride facility

2006- Launched production of acrylic resins for optical materials
2006- Received three awards in the same year: the Chemical Society of Japan Award for Technical Development; the Society of Chemical Engineers, Japan Award for Outstanding Technological Development; and the Catalysis Society of Japan Award for Technology, for the development of new ethanolamine production technology
2007- Received the Chemical Society of Japan Award for Technical Development for developing a new production method for N-Vinyl-2-pyrrolidone

2009- Received the Okochi Memorial Production Prize for developing new diethanolamine production technology
2014- Received the Chemical Society of Japan Award for Technical Development for developing and commercializing lactone-ring-containing acrylic polymer for optical films
2014- Commercialized electrolyte for rechargeable lithium-ion batteries

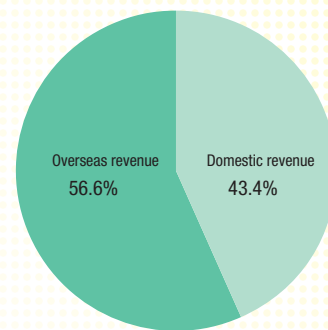
2020

2019- Completed facility for manufacturing middle-molecular drug active pharmaceutical ingredients (APIs)

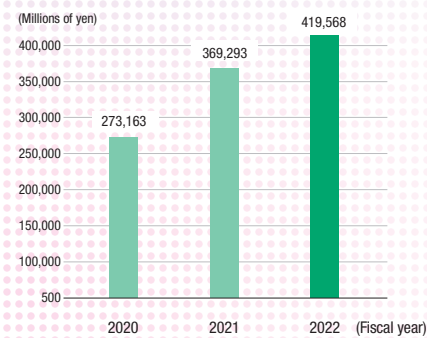
Operating Results and Assets

Item	FY2020 (4.2020-3.2021)	FY2021 (4.2021-3.2022)	FY2022 (4.2022-3.2023)
Revenue (millions of yen)	273,163	369,293	419,568
Profit before income tax (millions of yen)	- 12,926	33,675	26,175
Profit attributable to owners of the parent (millions of yen)	- 10,899	23,720	19,392
Basic earnings per share (yen)	- 273.33	594.86	488.29
Total assets (millions of yen)	471,617	518,151	523,319
Total equity (millions of yen)	323,725	351,123	369,998
Equity attributable to owners of parent per share (yen)	7,959.07	8,624.02	9213.91
ROA (ratio of profit before tax to total assets) (%)	- 2.7	6.8	5.0

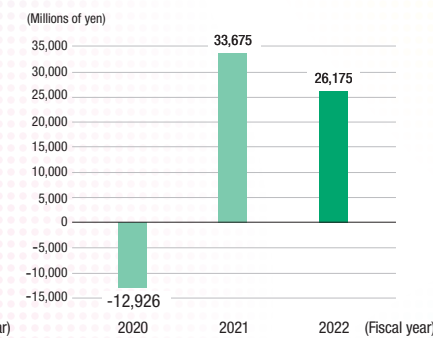
Overseas/Domestic Revenue Ratio (FY2022)



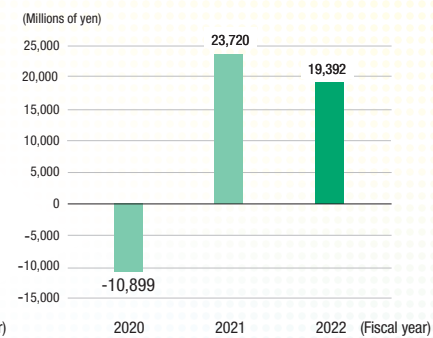
Revenue



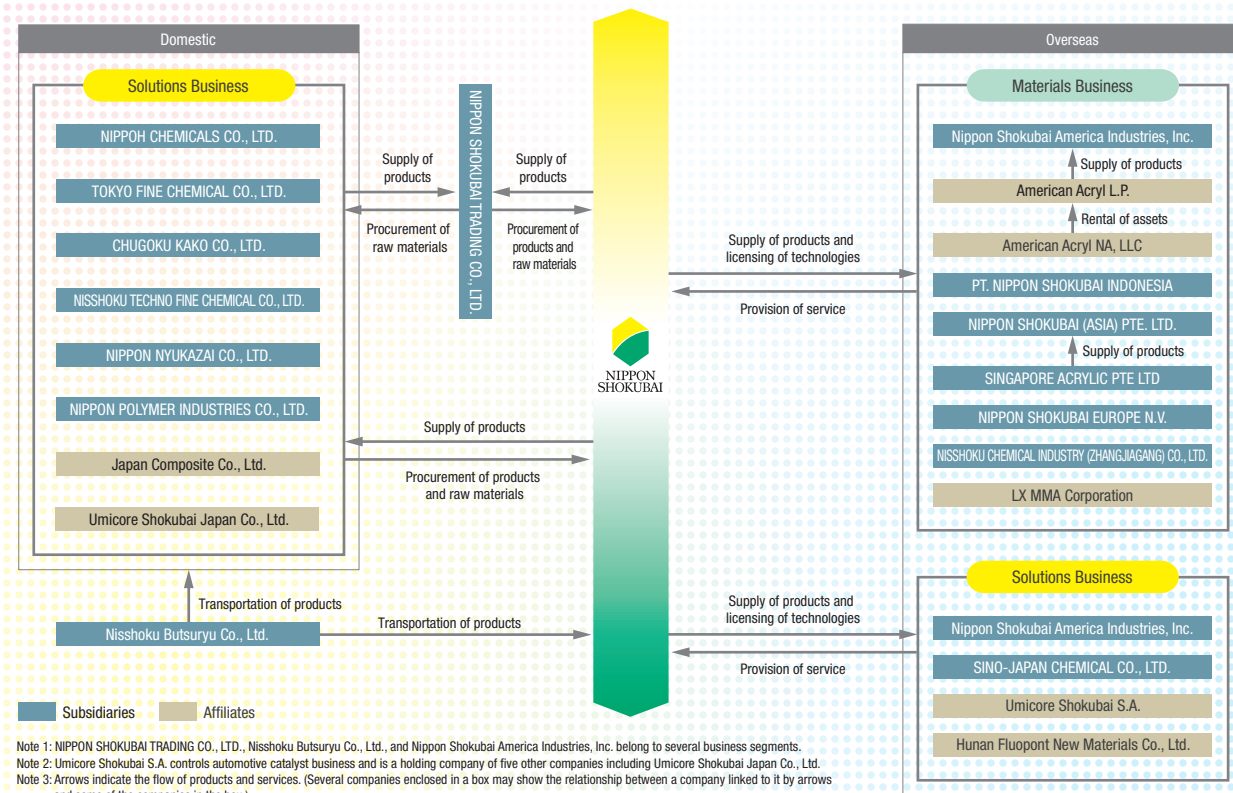
Profit before Tax



Profit Attributable to Owners of Parent



Overview of Consolidated Group (As of March 31, 2023)



Products aligned with the changing times and society.

We continue to create a wide range of higher-added-value products to meet various challenges and demands, becoming more sophisticated and complex with the changing times.

