

Tosoh Corporation

General Presentation

Delivering on our promise of quality products

through *The Chemistry of Innovation*.



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At A Glance



Since 1935, Tosoh Corporation has built a resilient global enterprise whose products and services are woven into the fabric of modern life.

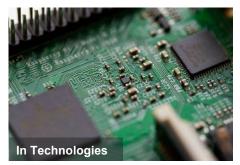
Values based on *monozukuri*, a craftsman-like approach to product detail and quality, have shaped Tosoh's growth for more than 80 years.





Tosoh All Around You









Tosoh furnishes the raw materials for a wide array of products that help make modern life all that it is and all that it can be.

It is almost impossible to find a manufactured item that does not include something from Tosoh.

And we continually strive to offer products that contribute to improving the quality of people's lives.







History

Started from humble beginnings as a soda plant and grew to become one of the largest independent fully-integrated comprehensive chemical manufacturers in Japan.

1935

Founding of Toyo Soda Manufacturing Co., Ltd. 1970s

Expanded to become a fully integrated chemical manufacturer through a series of mergers in Japan

1990s

Expanded bases in Japan and abroad to grow businesses

Further strengthen and stabilize business operations through leveraging commodity and specialty business pillars



Established its first chemical plant producing soda ash and caustic soda in Shunan, Yamaguchi (Nanyo Complex) 1960s

Entered petrochemical industry to expand core competencies



Started operations at its second manufacturing complex in Yokkaichi, Mie in 1971 (Yokkaichi Complex) 1975: Merged with Tekkosha Co., Ltd. 1980s

Changed official company name

to Tosoh Corporation in 1987

Focused on growth of its three main businesses: commodity, petrochemical and specialty operations



1990: Merged with Shin-Daikyowa (petrochemical company) 2000s

Prioritized businesses for stable growth, solid financial foundation and safe operations

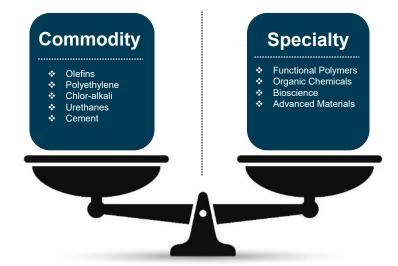
2014: Merged with Nippon Polyurethane Industry Co., Ltd.



Two Business Pillars

Tosoh balances petrochemicals, urethanes and isocyanates, and one of the largest chlor-alkali commodity operations in Asia on the one hand with highly profitable specialty operations on the other hand to build a business portfolio that can withstand changes in the business environment.

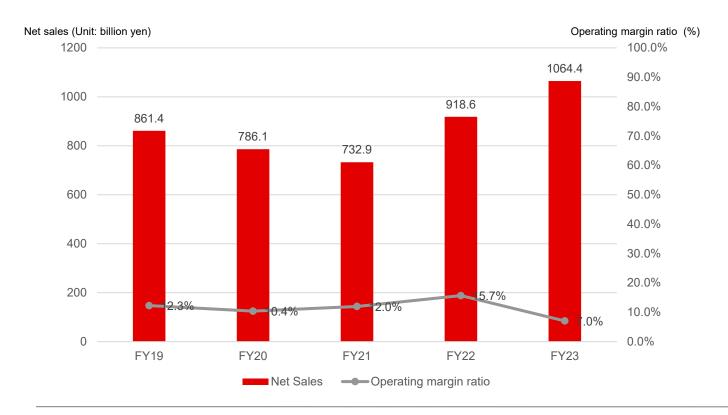
Tosoh's Commodity businesses ensure basic cash flow and business profitability, and fuel Tosoh products with highly competitive utilities and basic raw materials.



Tosoh's Specialty businesses reduce the company's exposure to risk from fluctuations in the Commodity pillar by generating stable and high profit margins through the sales of highperformance products developed through rigorous research and development with our customers.



Financials





Culture of Safety

Strong commitment to promoting and ensuring safety throughout all levels of the organization

Tosoh Corporation ensures the safe handling, transport and storage of our products as well as safe operation of our plants through the implementation of a comprehensive and stringent set of safety strategies that are designed to minimize safety hazards and optimize production efficiencies. We also work closely with suppliers and group companies to promote safety through a proactive coordination of business activities.

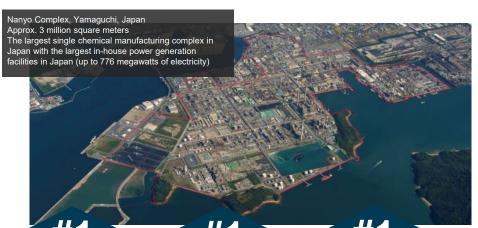








Trusted Global Brand



#1

World's leading supplier of chlorosulfonated polyethylene, a superior general-purpose synthetic rubber used in a myriad of applications. #1

World's largest supplier of zirconia powder that is widely used in a wide range of applications.

#1

Japan's leading supplier of high-quality and reliable chromatographic columns for separations and purification.

#1

Japan's top supplier of caustic soda, a highly versatile substance used in a variety of manufacturing processes

#1

Japan's top supplier of vinyl chloride monomer, which is an essential ingredient to produce polyvinyl chloride. #1

Japan's sole supplier of bromine, which is essential for the manufacture of flame retardants, dyes, pharmaceuticals, etc.





Business Groups

Petrochemical Group

High-performing specialty products for a wide range of industries

Net sales: US\$1.6 billion Share of net sales: 19.3%

> Olefins Polymers

Chlor-alkali Group

High-quality commodities from one of Asia's largest integrated chemical manufacturers

......

Net sales: US\$3.2 billion Share of net sales: 39.4%

> Chlor-alkali Urethane Cement

Specialty Group

Strongly positioned and highly profitable products in well-established and growing markets

Net sales: US\$2.0 billion Share of net sales: 24.6%

Organic Chemicals
Bioscience
Advanced Materials

EngineeringGroup

Environmental-related services, including water treatment, soil purification and remediation, and construction

Net sales: US\$1.0 billion Share of net sales: 12.7%

> Water Treatment Construction

Ancillary

Services for Tosoh Group companies, that enhance operational efficiency and performance

Net sales: US\$331.9 million Share of net sales: 4.1%

General Services Information Technology Logistics



Petrochemical Group



Providing a variety of high-quality petrochemical products from our very own naphtha cracker

Tosoh furnishes an array of petrochemicals that contribute heavily to the electronics, automobile and other industries. Ethylene, one of Tosoh's core products, is a basic feedstock for a vast array of other products that go into such uses as films in packaging, flexible water pipes, coating cables, cosmetics etc.



Petrochemical Group

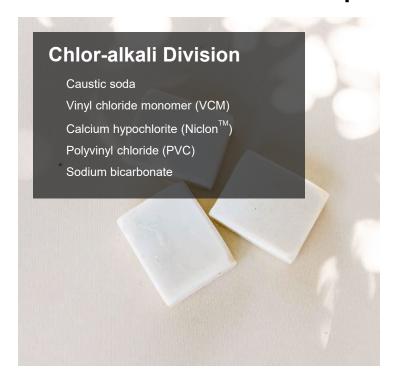


Offering a balanced mix of commodity and specialty polymer products that furnishes the world we live in

Tosoh's polyvinyl chloride products are in your home's easy-to-clean wallpaper, on the outside in durable siding, and even in your car's underbody.



Chlor-alkali Group

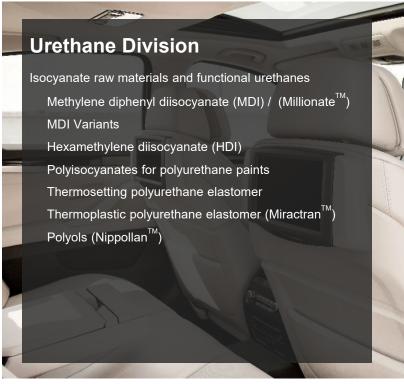


Supplying the world with the materials that help make modern life comfortable

Tosoh supplies essential products that go into plastics, glass, pulp and paper, aluminum, and soaps and detergents. Our resins are used in almost everything from refrigerators to mixing bowls and utensils; our caustic soda keeps clothes clean; and our Niclon calcium hypochlorite makes drinking water potable and swimming pools safe for swimming.



Chlor-alkali Group

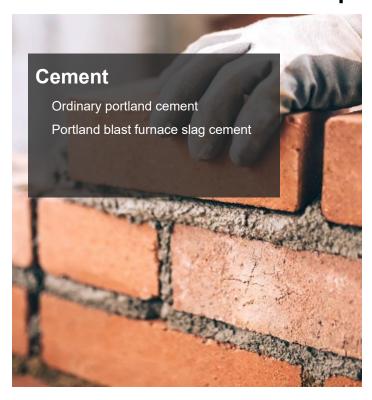


Offering a broad range of polyurethane products that present limitless possibilities of applications in today's society

Tosoh's polyurethane products contribute to the manufacture of essential products such as car seats to keep your children safe on the road as well as refrigeration insulation to keep your food fresh.



Chlor-alkali Group



Contributing to the building of sustainable cities and communities

Tosoh cement goes into buildings, bridges, and highways. And the recycling capacity of our cement plant helps significantly reduce the waste produced by Tosoh and communities surrounding the plant.



Specialty Group



Producing a wide array of essential building block chemicals to make the products that support modern living

Tosoh's chelating agents help to remove harmful heavy metals from the environment while our ethyleneamines are ubiquitous and found in myriad applications from pharmaceutical to agricultural. Tosoh's low-emission producing polyurethane catalyst RZETA also contributes to keeping your children safe on the road.



Specialty Group

Bioscience Division Automated immunoassay analyzers (AIATM, AIA-CL series) Reagents (AIA-PACKTM, CL AIA-PACKTM) Automated glycohemoglobin (GHb) analyzers (HLCTM series) Real-time fluorescence monitoring systems (TRC[™] series) High-performance liquid chromatography (HPLC) columns (TSKgel[™] series) Separation media for bio-pharmaceutical purification (TOYOPEAR™, Ca++Pure-HA[™]) High-performance gel permeation chromatography (GPC) Systems (EcoSEC[™] Elite series) Multi-Angle Light Scattering (MALS) detector (LenS3[™] series) SkillPak[™] pre-packed chromatography columns Octave multi-column chromatography systems

Supporting society's health and well-being with a broad range of advanced life science products

Tosoh Bioscience produces a range of scientific and clinical diagnostics products for multiple health concerns and life-threatening diseases, including the support of the various R&D and production activities to combat the new Corona Virus.



Specialty Group

Advanced Materials Division

Yttria-stabilized zirconia powders & compounds

(TZ and Zpex[™] , Zgaia[™] series)

Grinding media (YTZ[™])

Zirconia fine beads

Electrolytic manganese dioxide (EMD)

Synthetic zeolites for molecular sieves

(Zeolum[™])

High-silica zeolites for catalysts (HSZ[™] series)

Silica glass raw materials

Fabricated quartzware

Machined quartzware

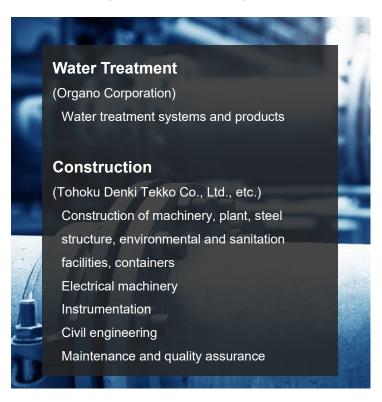
Sputtering targets for thin-film deposition

Manufacturing highprecision and advanced materials for technologies that help shape and move tomorrow's world

Tosoh's quartzware and sputtering targets are on the cuttingedge in helping the world's leading semiconductor manufacturers succeed in advancing our way of life. Our "ceramic steel" zirconia plays a role in dental and decorative applications. And our battery materials keep our devices and vehicles powered to take us to the next level.



Engineering Group



Sustaining today's society with solutions for clean water and safe structures

Tosoh subsidiary Organo Corporation, since 1946, supplies water treatment systems that support waterworks, sewage treatment pharmaceuticals and even information technology and electronics sectors.



* A registered trademark of Organo Corporation



Research & Development

,100 researchers21.4 billion yen invested

R&D Themes

Life Science

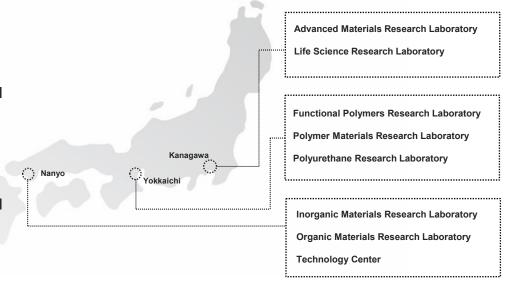
Develop products and technologies to expand separations and diagnostics businesses.

Electronic Materials

Generate new electronic materials that take full advantage of organic compounds and polymer design technologies, and acquire advanced and performance measurement technologies through group companies, industry, academia and government collaboration.

Environment & Energy

Develop innovative products and technologies toward achieving a low-carbon society and generate new materials to powder metallurgy technologies and organometallic complexes.





Sustainability

Making Sustainability and Corporate Social Responsibility a Part of Our **Business Foundation**

Tosoh Corporation recognizes the role chemical companies play in solving societal issues and realizing a sustainable society. We are committed to improving the quality of life through environmental preservation, to ensuring the safety and health of employees and society, and to achieving economic progress.

We pledge to continue to make our presence known as a chemical company that is actively doing its part to support the sustainable growth of society.

Customers

We ensure stringent safety standards and quality management systems so our customers can always rely on us to provide products and services that meet customer and regulatory requirements

Employees

We promote measures to ensure a conducive and safe workplace environment where our diverse personnel will enjoy working.

Corporate

Philosophy

Contribute to

society through the

chemistry of

innovation

Community

We contribute to the development of local communities through business activities. environmental preservation efforts and participation in community events

Government

We practice strict regulatory compliance above all else and will continue to work to meet and improve upon the values set forth in regulations and agreements.

Future Generations

We conduct R&D activities focused on the development of products and technologies that are aligned with the SDGs*

Business Partners |

We continue to be a reliable partner by acting with transparency and integrity in all that we

Society

We undertake Responsible Care® initiatives aimed at preserving the environment and ensuring a safe society to live in.

Shareholders & Investors

We continue to strive to boost long-term corporate value while balancing shareholders' interests for a sustainable business

*The Sustainable Development Goals (SDG) are a collection of 17 global goals set by the United Nations General Assembly in 2015. They are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice.



Global Presence

North America

- ▲ Tosoh America Inc.
- Tosoh Bioscience, Inc.
- Tosoh Bioscience LLC
- Tosoh Quartz, Inc.
- Tosoh SMD, Inc.
- Tosoh Specialty Chemicals USA, Inc.
- ▲ Tosoh USA, Inc.
- Organo USA, Inc.

South America

Chlor-alkali

Bioscience

Engineering Ancillary / Holding /

Petrochemical

Advanced Materials

Organic Chemicals

Trading Companies

▲ Oriental Marine Corporation

Asia

India

Europe

▲ Tosoh Europe N.V.

Tosoh Bioscience S.A.

Tosoh Bioscience Ltd.

Tosoh Bioscience S.r.I.

Tosoh Europe B.V. (SMD)

Tosoh Hellas Single Member S.A.

Tosoh International N.V.

(incl. Dubai branch)

▲ Tosoh Europe B.V.

Tosoh Quartz (UK)

o Delamine B.V.

Tosoh Bioscience GmbH

▲ Tosoh India Pvt. Ltd.

Indonesia

- PT Lautan Organo Water
- P.T. Standard Toyo Polymer

Korea

- Tosoh Namhae Silica Corporation
- Tosoh Quartz Korea Co. Ltd.
- Tosoh SMD Korea, Ltd.

- Tosoh Advanced Materials Sdn. Bhd.
- Organo (Asia) Sdn. Bhd.

China/Taiwan

- ▲ Tosoh China Holdings Co., Ltd. ▲ Tosoh (Shanghai) Co., Ltd.
- Tosoh (Shanghai) Polyurethane Co., Ltd.
- Tosoh Bioscience (Shanghai) Co., Ltd.
- Tosoh SMD (Shanghai) Co., Ltd.
- Tosoh (Rujan) Polyurethane Co., Ltd.
- Tosoh (Guangzhou) Chemical Industries, Inc.
- ▲ Tosoh Logistics Warehouse Co., Ltd.
- Organo (Suzhou) Water Treatment Co., Ltd.
- Organo Technology Co., Ltd. (Taiwan)
- Tosoh Quartz Co., Ltd. (Taiwan)
- Tosoh SMD Taiwan, Ltd.

Philippines

- Tosoh Polyvin Corporation
- Mabuhay Vinyl Corporation
- ▲ MVC Properties, Inc.
- Philippine Resins Industries, Inc.
- ▲ Philrex Properties, Inc.
- ▲ PRII Properties, Inc.

▲ Singapore

Tosoh Asia Pte. Ltd.

■ Thailand Organo (Thailand) Co., Ltd.

■ Vietnam

Organo (Vietnam) Co., Ltd.

Japan

- Asia Industry Co., Ltd.
- Ace Pack Co., Ltd.
- ▲ Hivoshi Chemical Industries Co., Ltd.
- ▶ Hokuetsu Kasei Co., Ltd.
- ▲ Hosojima Port Cargo Co., Ltd.
- ▲ Hyuga Unyu Co., Ltd. Izumi Sangvo Co., Ltd.
- ▲ Kansai Shipping Co., Ltd.
- Tosoh Kasumi Engi, Inc.
- ▲ Kasumi Kyodo Jigyo Co., Ltd.
- ▲ Keiyo Koun Co., Ltd.
- ▲ Koun Marine Co., Ltd.
- ▲ Koun Industry Co., Ltd. Lonseal Corporation
- MANAC Chemical Partners Co., Ltd.
- Minami Kyushu Chemical Industry Co., Ltd.
- ▲ Nihon Kaisui Chemical Co., Ltd.
- Nippon Miractran Co., Ltd.
- Organo Corporation Organo Acty Corporation
- Organo Eco Tech Corporation Organo Food Tech Corporation
- Organo Plant Service Corporation Plas-Tech Corporation
- Rensol Co. Ltd.
- Rinkagaku Kogyo Co., Ltd.
- Sankyo Kasei Industry Corporation
- Sanwa Construction Co. Ltd.
- Seiwakoki Co. Ltd.
- ► Shinomura Chemical Industry Corporation

- Taihei Chemicals Limited
- Taivo Vinvl Corporation
- ▲Toho Acetylene Co., Ltd.
- ▲Toho Unyu Co., Ltd.
- ▲ Tohoku Denki Tekko Co. Ltd.
- Tohoku Tosoh Chemical Co. Ltd.
- ▲ Tohoku Maintenance Co. Ltd.
- Tokuvama Sekisui Co., Ltd.
- Tosoh AIA. Inc.
- ▲Tosoh Analysis and Research Center Co., Ltd.
- Tosoh Ceramics Co., Ltd.
- O Tosoh Finechem Corporation
- ▲ Tosoh General Services Co., Ltd.
- Tosoh Hi-Tec. Inc.
- Tosoh Hyuga Corporation
- ▲ Tosoh Information Systems Co., Ltd. ▲ Tosoh Logistics Corporation
- ▲ Tosoh Nikkemi Corporation
- Tosoh Quartz Corporation
- Tosoh SGM Corporation Tosoh Silica Corporation
- Tosoh Speciality Materials Corporation
- Tosoh Techno-System, Inc.
- Tosoh Zeolum, Inc.
- N Toyo Polymer Co., Ltd.
- ▲ Yamaguchi Koun Corporation ▲ Yokkaichi Koun Corporation
- Yokkaichi Oxyton Co., Ltd.
- Yorin Construction Co., Ltd.



Global Sales and Marketing Offices





Our Promise



Our ability to continuously supply sustainable, precise and quality solutions allows us to be the business partner who can consistently help our customers succeed.

We challenge ourselves constantly to better harmonize our activities with the environment and with our stakeholders in society so that we may become better at fulfilling our role as a global corporate citizen.





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Additional Information



Vinyl Isocyanate Chain

The vinyl isocyanate chain is a fully integrated sequence of manufacturing operations that produce several key chemicals from the vinyl and isocyanate chains respectively.

Vinyl Chain

The vinyl chain starts with salt and naphtha. Salt is electrolyzed to yield chlorine, caustic soda and hydrogen. The naphtha steam cracking process yields ethylene, carbon monoxide and benzene. Chlorine is reacted with ethylene and hydrogen chloride (a by-product of MDI production) to produce ethylene dichloride (EDC), and the balance is used to manufacture other chlorine derivatives. Tosoh then converts EDC—which can also be combined with caustic soda to produce ethyleneamines, another major Tosoh product—to vinyl chloride monomer (VCM), which is converted into various polyvinyl chloride (PVC) resins.

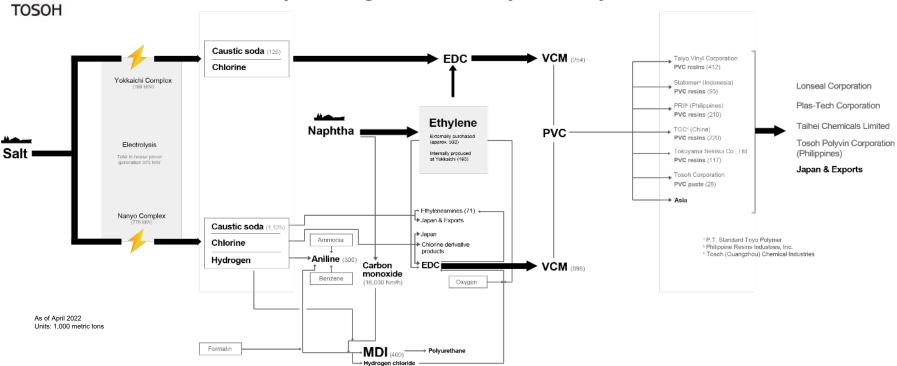
Isocyanate Chain

The naphtha-derived benzene, together with hydrogen and ammonia yields aniline, which, combined with formalin, and the vinyl chain's chlorine and carbon monoxide leads to methylene diphenyl diisocyanate (MDI), an essential raw material for polyurethanes.



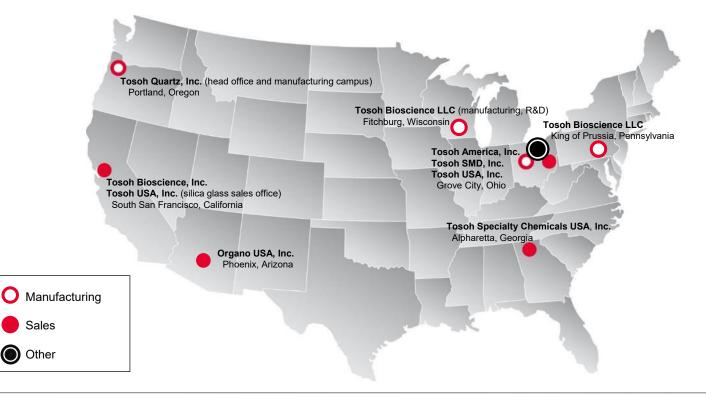


Tosoh Fully Integrated Vinyl Isocyanate Chain



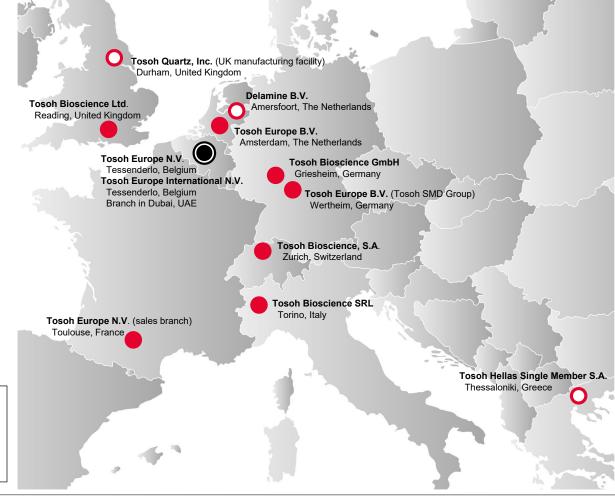


North America





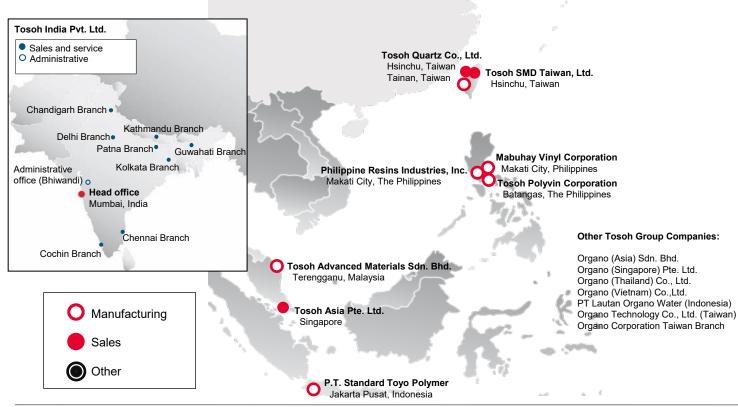
Europe



ManufacturingSalesOther









China



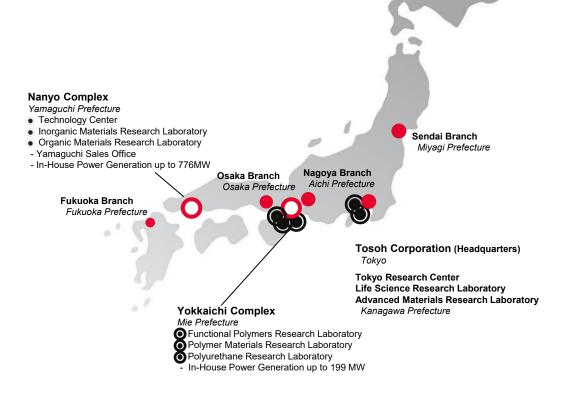


Japan

Manufacturing

Sales

Other



^{*} Only includes Tosoh Corporation's headquarters, sales offices, manufacturing and research facilities



Organization

