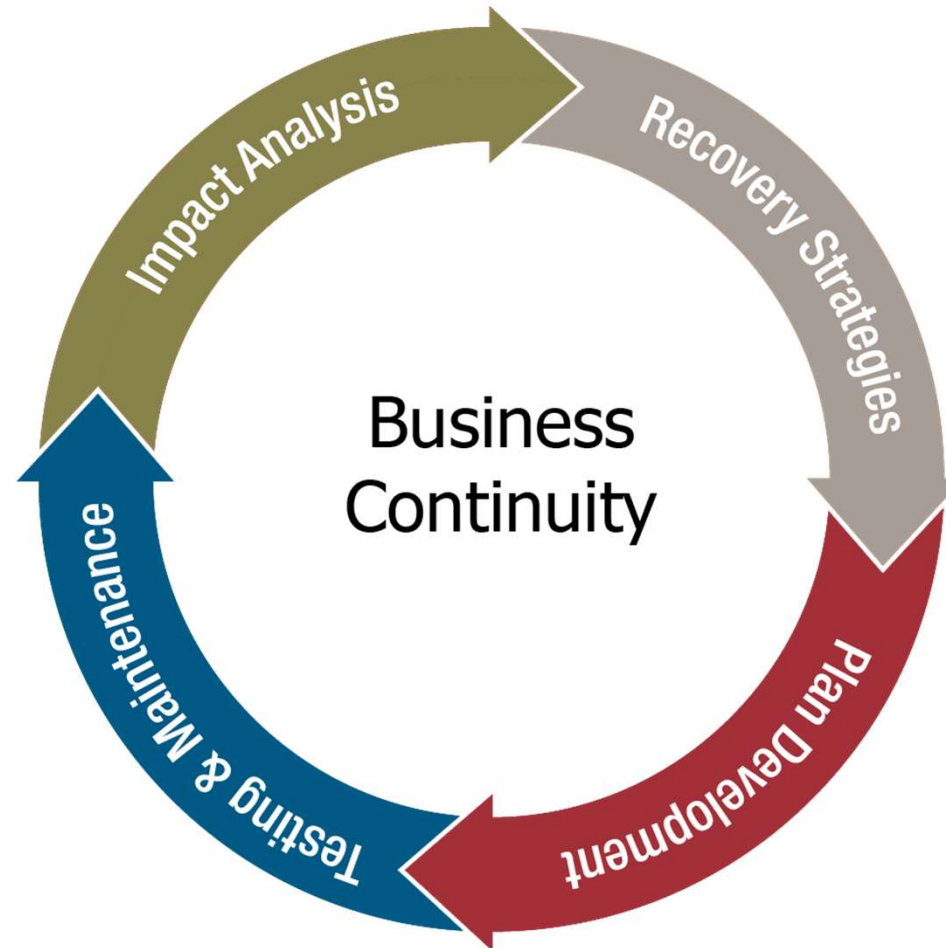




TOYOPEARL[®] and TSKgel[®] Business Continuity Plan



Tosoh Corporation
Bioscience Division



Corporate Philosophy

Mission

Contribute to bettering society through the chemistry of innovation

Corporate Social Responsibility

1. Contribute to the sustainable development of society through our business activities
2. Ensure safe and stable operation
3. Develop and promote a free and open corporate culture
4. Preserve the environment
5. Pursue integrity in corporate activities

Discover more: [Tosoh Report 2021](#)



A 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.





Production and R&D in Japan

R&D global
1,100 researchers
170 million dollars invested

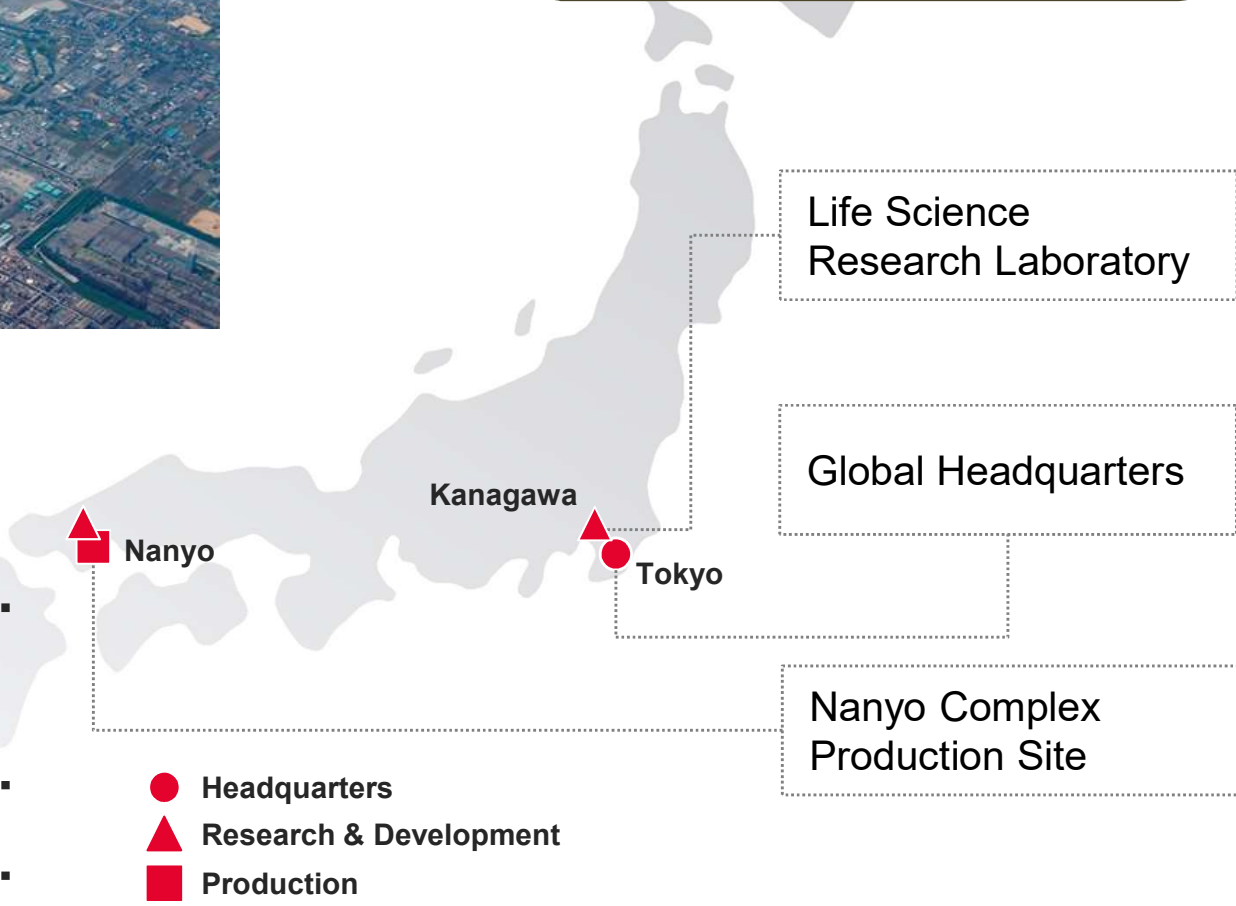


Nanyo Complex

The chromatography products are produced in the Tosoh Nanyo manufacturing complex in Yamaguchi, Japan, a self-contained city with its own power generation plants (675,000 kW!) and port.

Production follows ISO 9001:2015 series international standards in quality assurance for 100% of the products it manufactures and ISO 13485 for medical devices.

3 TOYOPEARL plants (2012: Plant 2, 2019: Plant 3, 2025: Plant 4)





ISO Certification – ISO 9001



- Plants are regularly audited by pharmaceutical customers.
- Tosoh uses customer feedback to continuously improve product quality and processes.

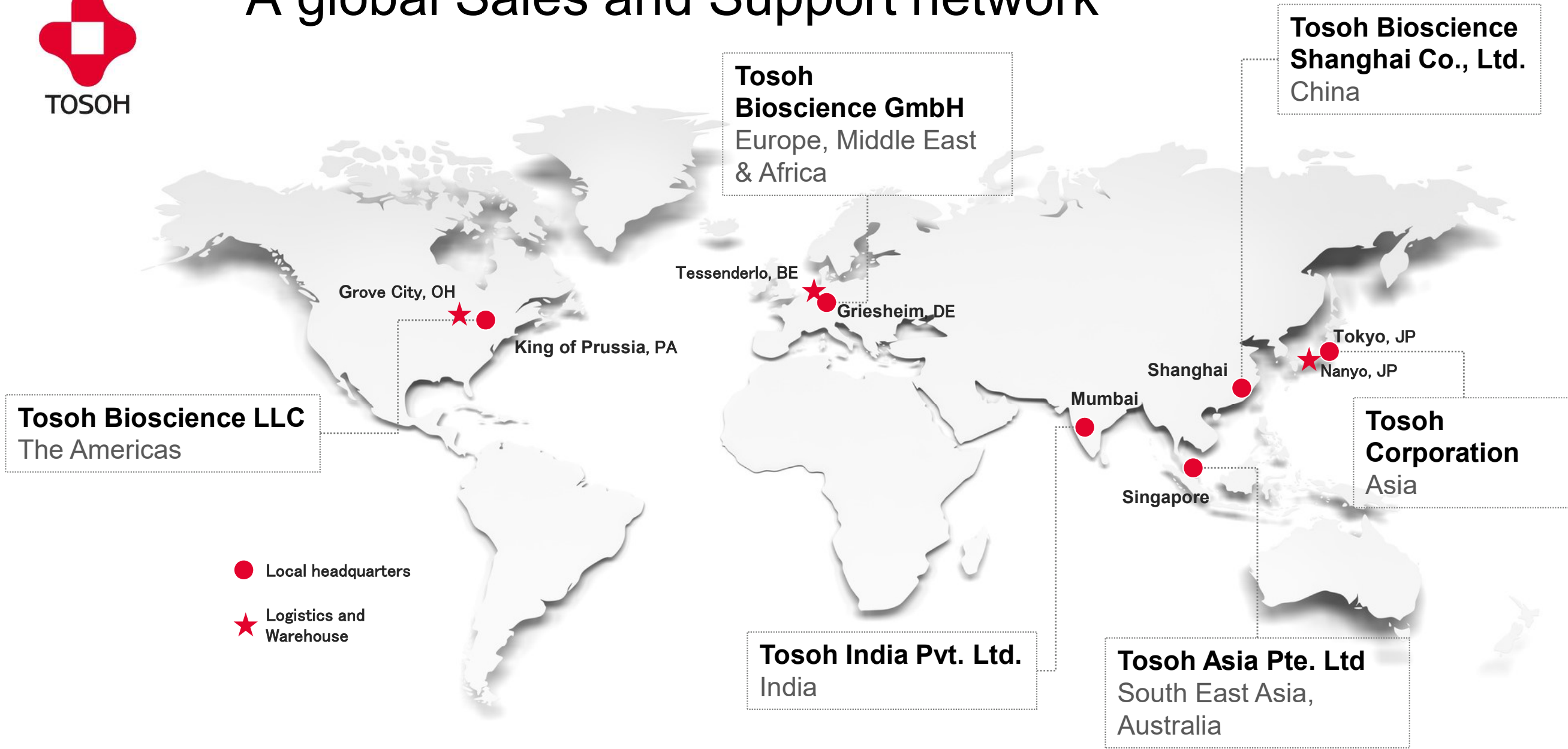


Global R&D and Production activities





A global Sales and Support network





BCP Initiatives

Tosoh's first priority is to ensure the physical safety of employees under circumstances involving widespread contingencies, such as the COVID-19 pandemic.

Due to our global business expansion, there are more opportunities for our employees to travel and be posted overseas.

- This increases the vulnerability of employees to global events such as wars, earthquakes, terrorism, riots, and infectious diseases.
- We are therefore implementing overseas crisis management measures to ensure the safety and well-being of our employees. We do not want employees to travel if they do not feel safe.

To ensure a stable supply of products to our customers, we are optimizing inventory and promoting purchasing from multiple sources and are also reviewing and improving our disaster countermeasure regulations.



Initiatives to Ensure Safety

President's Control Room Visits

- Management input on employees' safety
- Enhancement of employees' motivation for worksite safety
- Education and Training Upgrades
- Disaster Preparedness Training
- Earthquake and Tsunami Countermeasures
- BCP Initiatives
- Accident Case Study Research
- Accident Remembrance

Activation of Digital Transformation

- This ensures plant safety and stable operations
- Preventive Maintenance Efforts
- Safety Technology Initiatives



Joint training with public fire department



On-site indication of flood levels



Response to the COVID-19 Pandemic

The Tosoh Group is promoting the prevention of COVID-19 infections in line with its CSR Basic Policy which holds that the safety and health of people involved in its business activities must be ensured.

To reduce the possibility of employees becoming infected:

- We are promoting telecommuting—approximately 70% during periods of state of emergency—and staggered work hours.
- We are also employing web conferencing in lieu of business trips, meetings, and interviews, and implementing measures such as temperature checks for visitors.
- COVID-19 infection control offices have been established at the Nanyo and Yokkaichi Complexes.
- We are implementing countermeasures using a phased management approach in response to the infection situation.

Workplace vaccination

The Nanyo and Yokkaichi Complexes implemented workplace vaccination programs to reduce the chance of infection among employees and curb the spread of serious diseases.

By conducting vaccination at company workplaces, we contribute to reducing the burden on local governments and accelerating the vaccination rate.



Vaccination in Nanyo plant



Risk Analysis

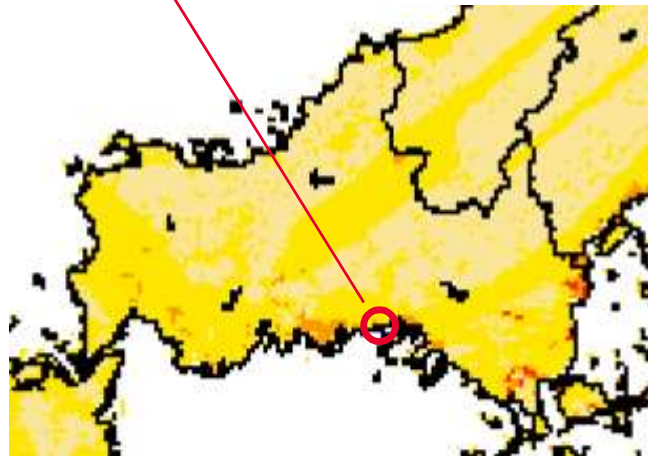


- A risk analysis of the TOYOPEARL/TSKgel plants was performed to determine recovery periods under different circumstances.
- Ascertained that the risk event that would require the longest recovery period was damage to the plants caused by a natural disaster, such as an earthquake or tsunami.
- Natural disaster would not cause damage on the level of total plant destruction.
- However, it must be assumed that instrument and equipment would be ruined.
- After closer investigation, it was decided that the maximum period that could be required to recover operations was six months.



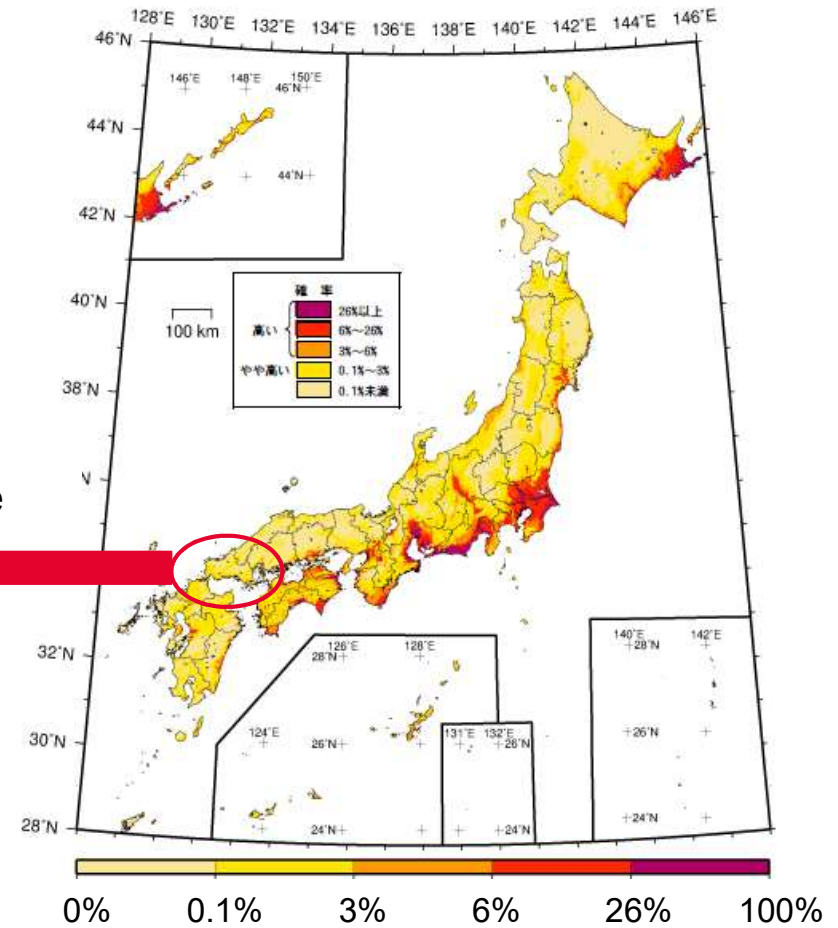
National Seismic Hazard Maps for Japan (2020)

Tosoh Corporation,
Nanyo complex



Probability of being hit by earthquake with a seismic intensity of 6 upper or higher at Tosoh Nanyo complex is once in 500 - 1,000 years.

Yamaguchi Prefecture



Probability of being hit by earthquake with a seismic intensity of 6 upper or higher in 30 years from 2020

National Seismic Hazard Maps for Japan (2020) (March 26, 2021) (The Headquarters for Earthquake Research Promotion)
https://www.jishin.go.jp/evaluation/seismic_hazard_map/shm_report/shm_report_2020/



Earthquake Frequency in Japan Breakdown by Prefecture in last 100 Years (1922.1.1 – 2021.12.31)

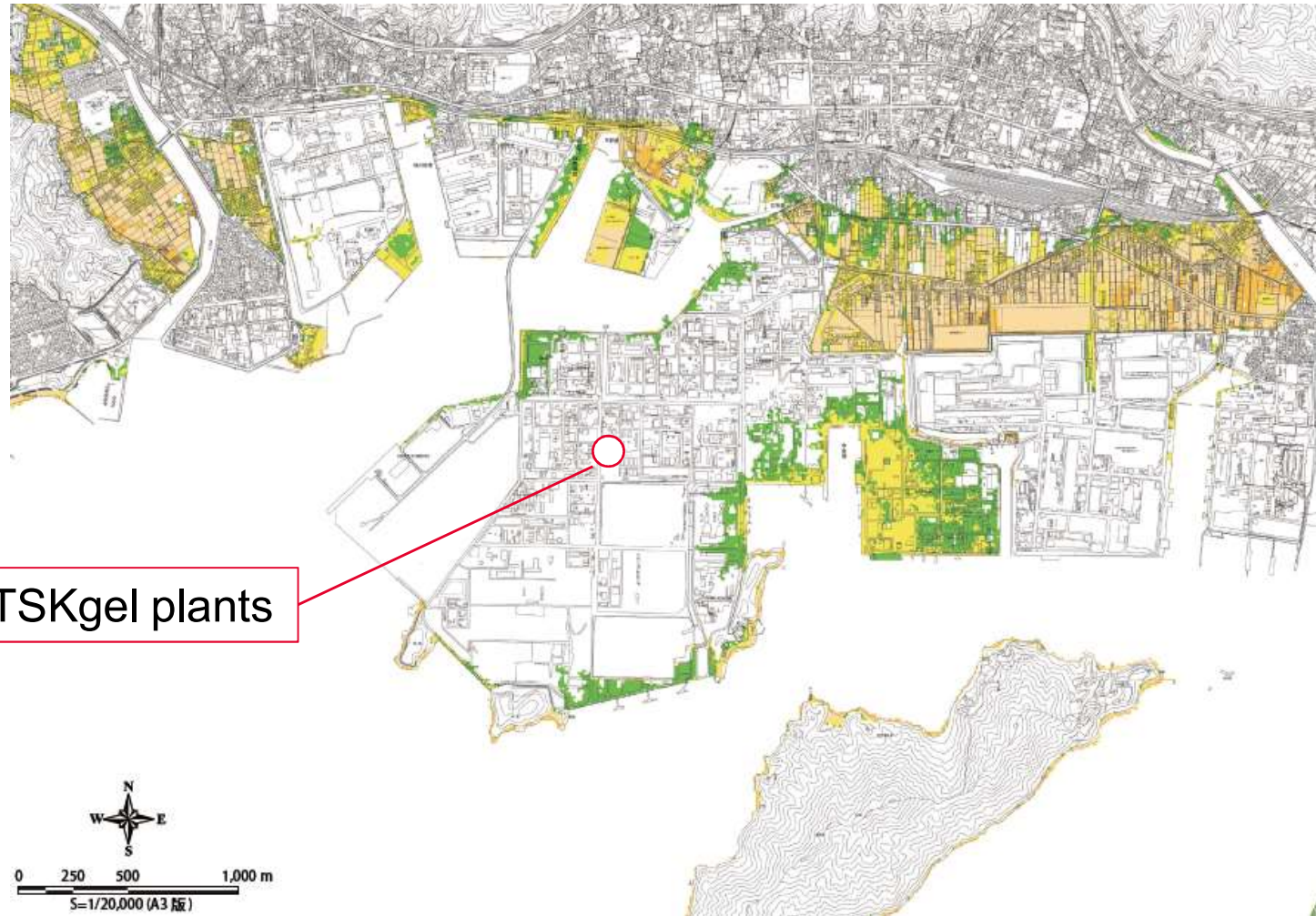
Prefecture list of earthquake frequency

Prefecture	Earthquake frequency by intensity									Total
	1	2	3	4	5 lower	5 upper	6 lower	6 upper	7	
Toyama	339	155	52	11	2	0	0	0	0	559
Saga	469	184	73	10	1	1	1	0	0	739
Yamaguchi	573	235	81	28	6	1	0	0	0	924
Shiga	769	270	91	20	4	0	0	0	0	1,154
Kagawa	756	285	88	23	2	1	0	0	0	1,158
Osaka	929	263	76	22	2	0	1	0	0	1,293
Shimane	851	379	111	24	2	3	0	0	0	1,370
Tokushima	961	348	99	24	4	1	0	0	0	1,437
.....
Ibaraki	11,556	4,764	1,463	332	40	5	3	2	0	18,165
Total	154,888	41,445	11,999	2,699	410	83	51	15	6	212,178

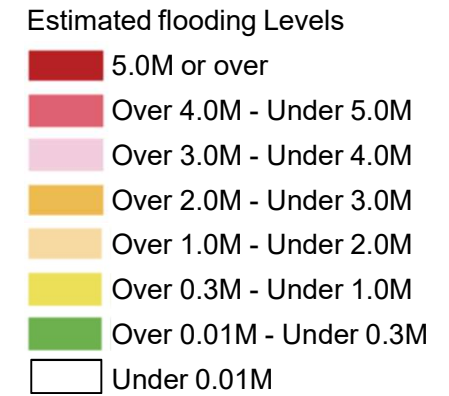
<https://www.data.jma.go.jp/svd/eqdb/data/shindo/index.php>



Estimated Flooding Level after a Mega Earthquake



TOYOPEARL/TSKgel plants



Yamaguchi Prefecture, July 2015

<https://www.pref.yamaguchi.lg.jp/cms/a10900/bousai/tsunami-soutei.html>



TOYOPEARL/TSKgel Business Continuity Plan

Earthquake-Resistant Plant Design

The TOYOPEARL/TSKgel plants are constructed so as to withstand damage from an earthquake intensity of up to 6.

Probability of being hit by earthquake intensity of “6 upper” or higher at Tosoh Nanyo complex is once in 500 - 1,000 years.

Our plants have satisfactory resistance against expected maximum earthquake.





TOYOPEARL/TSKgel Business Continuity Plan

Strategic Product Inventories

- We have separate warehouses in the United States and Belgium, and multiple plants in Japan, offering inventory of a full range of TOYOPEARL/TSKgel products independent from our manufacturing site.
- We are in the process of creating a greater than six-month inventory, which is equivalent to the maximum recovery period from unforeseen event.
- We have manufacturing facilities in two locations outside of Japan for Ca⁺⁺Pure-HA™ media production.
- We have the capabilities to quickly switch production of products to an alternate plant should one of the plants shut down.





TOYOPEARL/TSKgel Business Continuity Plan

Continuity in Raw Material Supply

When selecting a raw material supplier, we require all suppliers to adhere to ISO 9001 or equivalent standards and maintain stable supply. Renewal for ISO 9001 is done every 3 years.

We have designated a minimum of 2 suppliers for more than 90% of our critical and important raw materials.



TOYOPEARL/TSKgel Supply Chain BCP

Our basic policy

We promote measures to reduce logistical problems based on analyses of issues and reduce problems related to route transport.

Protection of Supply Chain

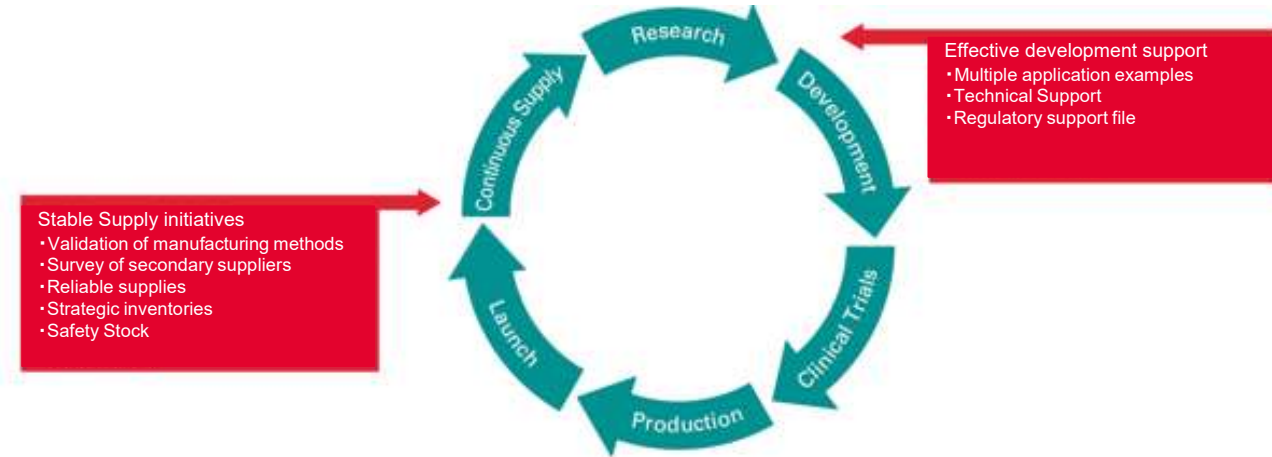
Alternative plans formulation for shipping and delivery

→ Securing the alternative shipping route.

Shipments from production plants utilize the Narita airport, but alternative airports, such as Osaka, Ishikawa and Fukuoka etc., are utilized in the event of an emergency.



Business Continuity



TOSOH assures long-term business continuity with a continuous supply of liquid chromatography packing material

- ✓ TOSOH has a well-prepared business continuity plan (BCP) in addition to disaster prevention measures
- ✓ Earthquake-Resistant Plant Design
- ✓ Strategic Product Inventories
- ✓ Continuity in Raw Material Supply
- ✓ Three TOYOPEARL /TSKgel plants at its facilities in Nanyo
- ✓ 4th plant site is granted and will further increase production capacities (Investment: approx. ¥16 billion, Commercial Operations Launch: March 2025, Capacity: Increase by 70%)
- ✓ TOSOH has a long track record and is a reliable partner for the Pharma-/Biotech Industries since decades for the manufacturing of commercialized drugs authorized by e.g. FDA, EMA, MHRA, PDMA, Health Canada,...



TOSOH CORPORATION

BIOSCIENCE DIVISION

Shiba-Koen First Bldg.
3-8-2 Shiba, Minato-ku, Tokyo 105-8623, Japan
Phone: +81 3 5427 5180 Fax: +81 3 5427 5220
Web site: <https://www.separations.asia.tosohbioscience.com/>

TOSOH BIOSCIENCE LLC

3604 Horizon Drive Suite 100,
King of Prussia, PA 19406, USA
Phone: +1 800 366 4875 Fax: +1 610 272 3028
E-mail: info.tbl@tosoh.com
Web site: <https://www.tosohbioscience.com/>

TOSOH BIOSCIENCE GmbH

Im Leuschnerpark 4, 64347 Griesheim, Germany
Phone: +49 6155 7043700 Fax: +49 6155 8357900
E-mail: info.tb@tosoh.com
Web site: <https://www.tosohbioscience.com/>

TOSOH BIOSCIENCE SHANGHAI CO., LTD.

Room 1001, Innov Tower, Block A, 1801 Hong Mei Road,
Xu Hui District, Shanghai 200233, China
Phone: +86 21 3461 0856 Fax: +86 21 3461 0858
E-mail: info@tosoh.com.cn
Web site: <https://www.separations.asia.tosohbioscience.com/>

TOSOH ASIA PTE. LTD.

9 Battery Road #11-01 MYP Centre Singapore 049910
Phone: +65 6226 5106 Fax: +65 6226 5215
E-mail: info.tsas@tosoh.com
Web site: <https://www.separations.asia.tosohbioscience.com/>

TOSOH INDIA PVT. LTD.

E-302, Lotus Corporate Park, Graham Firth Compound
Western Express Highway, Goregaon (East)
Mumbai - 400 063, India
Phone: +91 22 614 85200
E-mail: contact@tosohindia.com
Web site: <https://www.tosohindia.com/>

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