

Possibility of chemistry

The possibilities of chemistry benefiting the world. Denka is committed to creating new technologies needed by society and providing a stable supply of products to make the world a better place through the power of chemistry.

In 2023, Denka formulated a vision and the management plan "Mission 2030" for the eight-year period leading up to 2030, taking a new step forward.

Our mission states that "By 2030, we will increase the value of our human resources and management, and we will focus on creating business value that combines the three elements of specialty, megatrends, and sustainability." Under this mission, we aim to create value in three areas: business, human resources, and management.

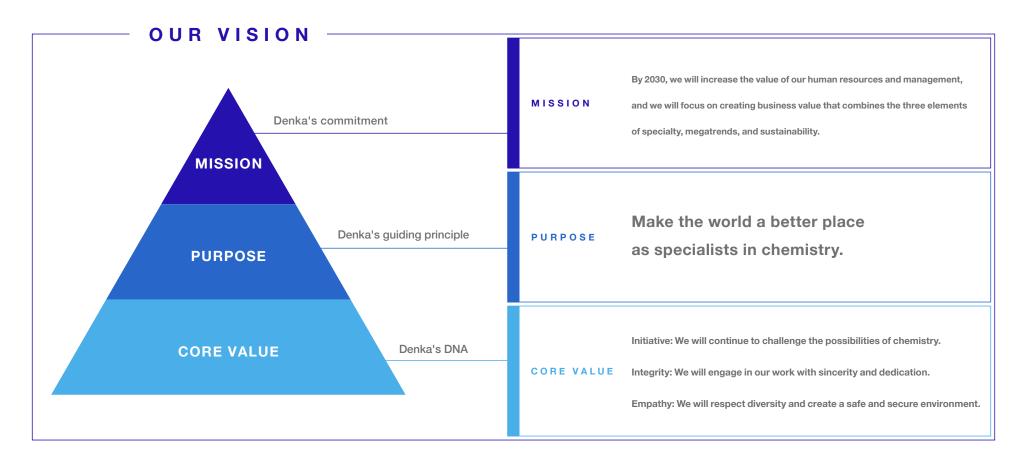
We will enhance Denka's corporate value, clarify our raison d'etre, and create the Denka of tomorrow based on Denka's DNA of Initiative, Integrity, and Empathy.

Denka believes that exploring the unknown possibilities of chemistry will support the security of society and create a prosperous future.

Vision

In formulating "Mission 2030", our eight-year management plan covering the fiscal period from 2023 to 2030, we have established a new vision that has launched in April 2023.

To draw up the vision, we gathered the candid views of our young employees, who will form the core of Denka in the future, while also adding thoughts of our management team. The vision is based on our Core Value, which is Denka's DNA, and overlays our Purpose, which is Denka's guiding principle, and our Mission, which is Denka's responsibility to be achieved by 2030. By structurally visualizing these concepts, we expressed a new vision (future image) for Denka that all employees can identify with. We also created a corporate message to communicate our vision in an easy-to-understand manner both inside and outside the Company.

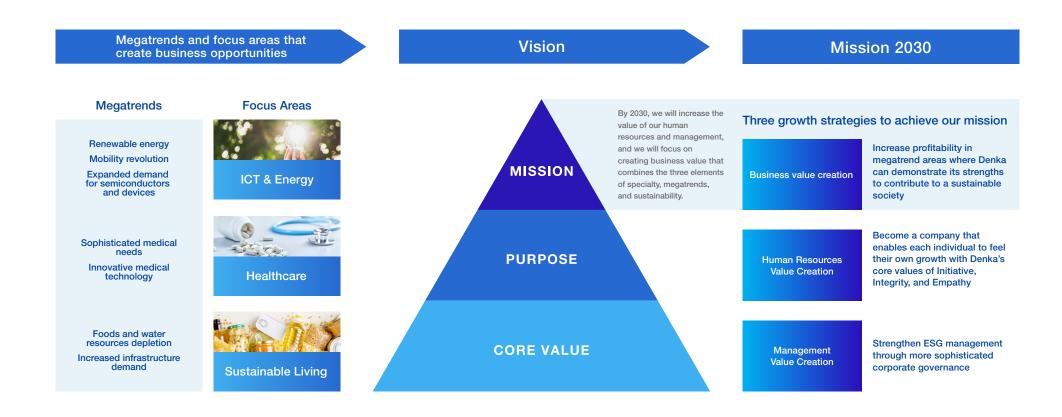


CORPORATE MESSAGE Possibility of chemistry

Toward the realization of the "Mission 2030" management plan

The vision was created based on an analysis of the world we envisage in the future, and the megatrends and focus areas from which new business opportunities will emerge.

To achieve our mission, which is the implementation goal of our vision, we will promote our growth strategies through the creation of three types of value: business value, human resources value, and management value, which will lead to the enhancement of our corporate value.



Denka City

In myriad scenarios throughout society, Denka solutions and products are hard at work. From convenience and comfort to peace of mind and environmental considerations, delivering happiness in spades is the driving force of our efforts to take on challenges, and what brings joy to each and every one of us.

- Electronics & Innovative Products
- Life Innovation
- Elastomers & Infrastructure Solutions
- Polymer Solutions



Heat dissipation filler Denka Spherical Alumina Denka Spherical Magnesia



VINI-TAPE



Gripping materials for emission gas purification units DENKA ALCEN



Special rubbers



High thermal conductivity and high toughness ceramic base plates



Home electronics, office equipment, flat panel displays, miscellaneous goods, etc. MS resin, MBS resin



LCD TVs, PC monitors,

ALONBRIGHT



Wigs and hair pieces for fashion



Skin-care products



Label film for PET bottles. CLEAREN



Drive inverters

Denka SN Plate



POCT test reagent



Lithium-ion batteries DENKA BLACK



DENKA CHLOROPRENE Plastic drainage pipes



Automotive interiors

spray concrete Denka NATOMIC



acid fertilizer facilitates the health growth of crops and reduces the stress on



Influenza HA vaccine



Functional ceramics (Spherical Alumina)

Spherical alumina (high thermal filler), developed using Denka's proprietary high-temperature melting spheroidizing technology, can be used to fill various resins and rubbers with a high filler loading capability. Due to advances in higher definition catering to each application, spherical alumina is used as a high thermal filler function to deal with heat production in a wide range of fields including automotive and electronics, and it has the No. 1 market share for these uses globally. Denka will expand the production from current Omuta Plant, and Singapore as well, in order to meet the demand for megatrends such as various electric vehicles (xEVs) and 5G communications. We have also added spherical magnesia filler, which features 1.5 times the thermal conductivity of spherical alumina, to our product range to enhance our lineup of high thermal fillers.

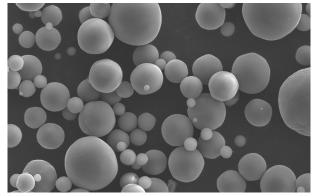


Image of spherical alumina under an electron microscope

Conductive agents for lithium-ion batteries (Acetylene black)

Acetylene black is used in lithium-ion secondary batteries, an essential component to electric vehicles, due to its high purity and excellent electrical conductivity. A lithium-ion secondary battery is a battery in which lithium ions move between the cathode and anode, allowing it to be charged and discharged repeatedly. Denka maintains a leading global market share of acetylene black, which is used as a conductive material for these batteries.



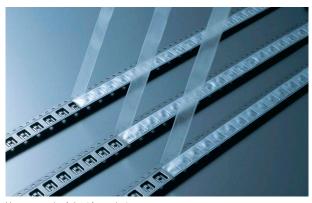
Acetylene black: DENKA BLACK



Use in high voltage power cable sheathing materials

Sheets and tapes for transporting semiconductors and electronic components (sheets for carrier tape, cover tape)

As integrated semiconductor circuit components are protected with carrier tape and top cover tape during shipment, if components stick to the cover tape due to static electricity, foreign matter could get in due to faulty mounting of components to the circuit board, affecting the performance of the components. Denka makes products that lead to a stable supply of semiconductor components by utilizing its strength in taking an integrated approach, from raw material compounding and sheet and film development to mass production.



Usage example of sheet for carrier tape



Cover tape (Denka Thermofilm ALS)



Vaccines

Prevention

To protect people from infectious disease, Denka operates as a major domestic vaccine manufacturer to develop and manufacture vaccines for influenza and other diseases, with a focus on safety and effectiveness. Influenza vaccines are effective in providing a measure of protection against the onset of influenza, and in preventing it from becoming more severe after its onset

Denka is also collaborating with VLP Therapeutics Japan, Inc. (VLPT Japan) and the Research Foundation for Microbial Diseases of Osaka University (BIKEN Foundation) to develop a seasonal influenza vaccine using self-amplifying "replicon" RNA technology.



Influenza HA vaccine

POCT diagnostic reagents

Diagnosis

Denka supplies a wide range of testing reagents in Japan and overseas. They are used in medical checkups and to diagnose infectious disease and various other illnesses. Quick NaviTM-Flu2 is the top-selling rapid test kit for influenza, and is able to determine the presence of antigens in a short period of time. Denka used this technology to develop COVID-19 rapid antigen test kits. As a new business, Denka has been working to develop a gene detection system (comprising equipment and reagents) that is able to simultaneously measure the presence of multiple viruses associated with respiratory tract infections, including COVID-19. Through these businesses, Denka will help improve quality of life for people around the world.



COVID-19 rapid antigen test kit



Rapid Influenza Type A-B antigen detection & differentiation

G47∆ oncolytic virus for treating cancer treatment

Treatment

Denka manufactures the G47 Δ , the first oncolytic virus for treating cancer in Japan. This product is formulated from live viruses by genetically modifying wild-type herpes simplex virus type 1 (HSV-1) so that they achieve replications through cancer cells alone. It is expected to potentially revolutionize cancer treatment. Its production requires large-scale virus cultivation technology and special testing techniques. Denka has demonstrated the technologies and expertise it has acquired over many years through the development and production of vaccines and reagents for virus testing.



Elastomers & Infrastructure Solutions

Utilizing the carbide chain that has been in place since our founding, the Division has been supporting safe and secure lives with a wide range of organic and inorganic technologies, including functional elastomers, special admixtures needed for infrastructure toughening, and corrugated pipes and fertilizers for agriculture.



Chloroprene Rubber (DENKA CHLOROPRENE)

Chloroprene rubber is the first special synthetic rubber successfully commercialized in Japan with the use of proprietary technologies. Denka maintains the largest production capacity for chloroprene rubber in the world. As chloroprene rubber features an excellent balance of properties including heat resistance, ozone resistance and oil resistance, it is used in a wide range of applications from automotive to industrial components, adhesives, wet suits and medical gloves. Denka has developed new grades of chloroprene rubber meeting various needs.

Special acrylic elastomer (DENKA ER)

DENKA ER is a copolymer of ethylene, vinyl acetate and acrylic acid ester independently developed by Denka as a special rubber with excellent heat and oil resistance. In terms of performance, it lies between acrylic and fluorine rubber. DENKA ER offers excellent protection against cumulative degradation caused by heat and oil in particular, and is used in applications requiring high performance and high heat resistance including automotive components and machinery components.

Shotcrete Accelerator (Denka NATOMIC)

Denka NATOMIC is a shotcrete accelerator mixed with concrete to obtain quick hardening property that hardens concrete in several seconds to prevent the collapse of bedrock at tunnel excavation construction sites. Denka NATOMIC takes an important role to keep tunnel construction sites and workers in safe, and has been applied for Shinkansen bullet train tunnels and road tunnels all across Japan. Denka has the top share of shotcrete accelerator market in Japan.

Underground Drainpipes (Corrugated Toyo Drain, RaRaSui)

Denka started manufacturing plastic drainage pipes in 1963, and has been contributing to the modernization of civil engineering ever since, from underground drainpipes for agriculture to tunnel and road construction. RaRaSui is an underground irrigation system that integrates water locks, drainage outlets, water supply basins and Toyo Drain underground drainpipes. By optimizing water management, RaRaSui enables the conversion of paddy fields to crop fields, generalization and direct sowing cultivation to achieve low-cost farming. It also supports the high quality and stable high yield of crops.



DENKA CHLOROPRENE



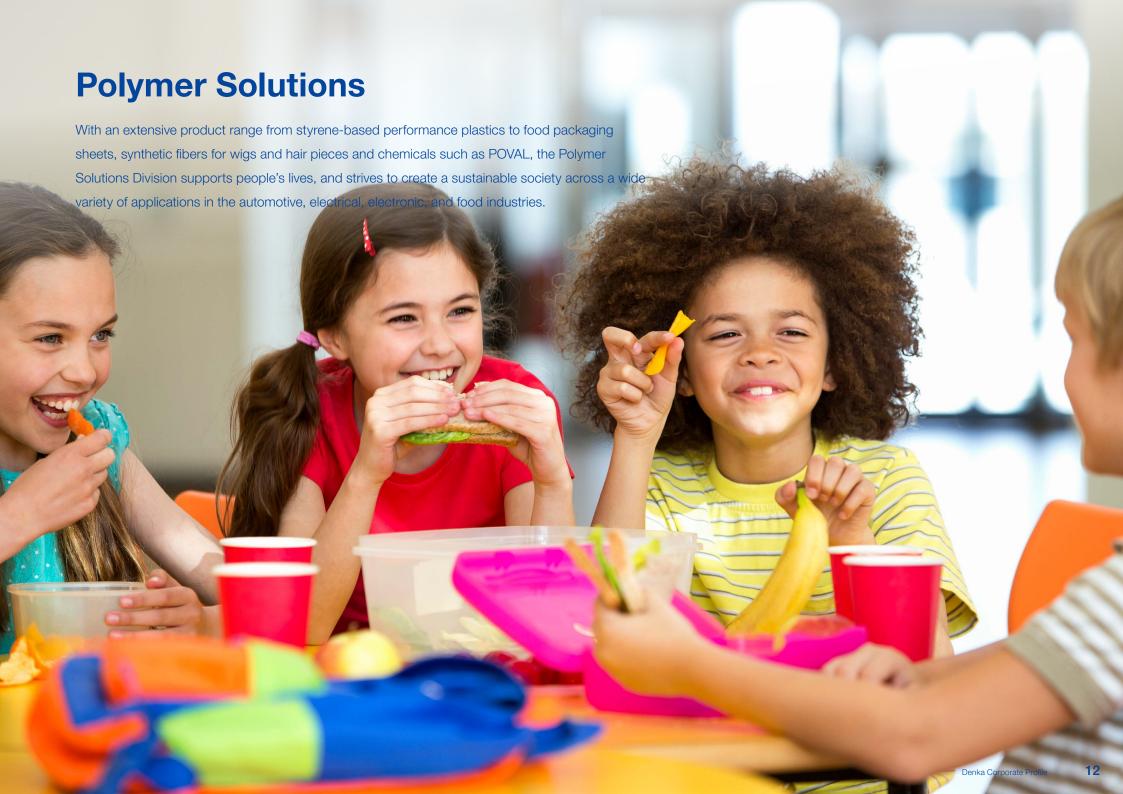
Automotive components using DENKA ER



Tunnel spraying work using Denka NATOMIC



Tovo Drain



High transparency resin (CLEAREN)

CLEAREN is used in a wide range of applications including beverage bottles, shrink wrap for toiletry products, good packaging containers, caps for cosmetic products and toys. It is a transparent resin with excellent impact resistance, and has various properties including special heat shrinkage behavior, high fitting and hinge (flex fatigue properties, and surfaces that do not easily become sharp when fractured. Denka also proposes solutions for reducing environmental impact such as promoting the sorting of used PET bottles and utilizing recycled materials.

MS resin (DENKA TX Polymer)

DENKA TX Polymer is used in a wide range of applications, from the light guide plates used in LCD TVs and monitors to cosmetics containers and high-end goods. It boasts superior dimensional stability to acrylic and high light transmittance on par with acrylic, making it a transparent resin that is ideal for optical applications and products with strong design qualities. It also requires less electricity than acrylic during the molding process, and can help lighten products due to its lower weight.

Heat-resisting additive (DENKA IP)

DENKA IP is used for automotive interior and exterior components as well as home appliances as a heat-resisting additive for ABS resins. When added, DENKA IP increases the heat resistance temperature of ABS resin, preventing components from deforming due to heat, and contributing to improved safety. It also helps reduce our environmental impact by making automotive components lighter and paint-free, by improving cabin environments by reducing VOC usage, and by producing heat-resistance ABS using recycled ABS materials for reuse in automotive applications.

Food packaging material (Thermosheet BOPS)

Thermosheet BOPS are mainly used for food containers. In addition to their conventional use for supermarket food packs and convenience store boxed meal container lids, in recent years demand has increased in the areas of takeout and home delivery. The excellent transparency and anti-fogging properties of Thermosheet BOPS can enhance the marketability of the contents. The sheets can be made even thinner through Denka's proprietary molding process, which helps reduce container weight, cut CO2 emissions and decrease waste.







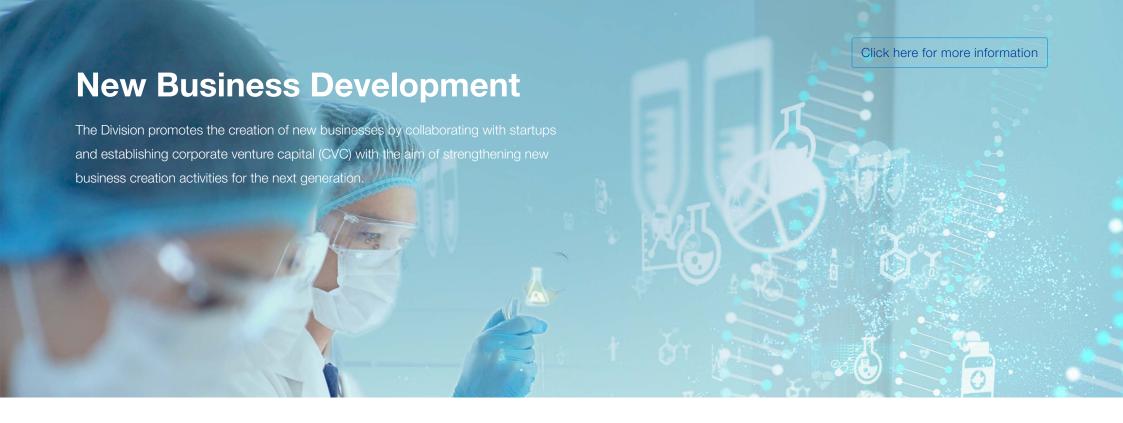
Cosmetic containers using DENKA TX Polymer



Example of automotive interior use



Food container usage examples



Establishment of CVC (Corporate Venture Capital) fund

Denka established a CVC (Corporate Venture Capital) fund with Pegasus Tech Ventures with the aim of creating new businesses and acquiring new technologies. By forming this CVC, we aim to strengthen and expand existing businesses and accelerate the creation of new businesses through investments in and business alliances with entrepreneurial ventures that possess cutting-edge technologies, products, business models, and business ideas. By combining the technologies and businesses owned by promising entrepreneurial ventures in Japan and overseas with Denka's unique technologies and other management capital, striving to create businesses that help solve social issues.



Signing ceremony held on January 16, 2023

Development of "PLATIECO®," an eco-friendly sustainable plastic

Denka has developed the "PLATIECO®" eco-friendly sustainable plastic made from a natural material, eggshells and polystyrene resin, a type of plastic. PLATIECO® is praised as a product contributing to the reduction of plastic use and greenhouse gas emissions, and it has been used in a series of plastic GUNDAM models, commonly called "GUNPLA." Based on the concept of reducing the use of plastics and utilizing organic waste, eggshells which are normally incinerated and disposed of as a food industrial waste are combined into polystyrene resin to reduce the energy used and contribute to a reduction of environmental burdens.



PLATIECO®

Sustainability and Environmental Policy

Environmental problems are the most critical issues threatening the survival of ecosystems.

Under these circumstances, pursuing sustainability is essential for companies to meet their social responsibilities and continue their business, while at the same time improving the competitiveness of products and creating new business opportunities. Denka is committed to "achieving carbon neutrality by 2050," "environmental conservation and minimization of environmental impact," and "promotion of resource recycling" in order to create sustainable business value as envisioned in the "Mission 2030" management plan. In addition, we will promote "provision of products and technologies that help reduce environmental footprints from the viewpoint of LCA (Life Cycle Assessment)."

Efforts toward carbon neutrality

Denka aims to become carbon neutrality by 2050. In addition, under the "Mission 2030" management plan, we will review the previously announced reductions and aim to achieve a 60% reduction in CO₂ emissions by fiscal 2030 (base year: fiscal 2013). We are currently considering and promoting a number of measures, such as expanding the use of clean energy, studying process conversion to lower environmental impact by introducing new technologies such as low-carbon acetylene chains, converting fuel of in-house thermal power plants, and reviewing our portfolio.



Expansion of the use of clean energy

Denka has been constructing hydroelectric power plants since its founding and currently has 17 such plants with a maximum output of 140,000 kW. All hydroelectric power plants are natural inflow type power generation systems, which use the flow of river water to generate electricity and return the water to the river. These systems have a lower burden on the natural environment than dam type power generation systems. In addition, solar power generation facilities were installed on the premises of the Shibukawa and Isesaki Plants in 2013. We are currently searching for candidate sites for new construction at our plants and Group companies in Japan. Denka will continue to increase its renewable energy ratio and reduce the environmental footprints of its production activities.



Oami Power Plant

Environmental conservation and minimization of environmental footprint

Since COP26, the importance of coexistence with the natural environment has been increasing along with the response to climate change. Denka has set "Reduction of Environmental Impact and Conservation and Protection of Biodiversity" as one of its basic ESG policies, and is committed to understanding the impact of its corporate activities on biodiversity and working to conserve and restore it. Regarding biodiversity, in fiscal 2022 we started a survey to identify points of contact between corporate activities and biodiversity. Based on this survey, we have identified and evaluated the risks and opportunities posed by our corporate activities on nature and have begun to consider countermeasures. We plan to complete the survey and evaluation of business sites directly under our control in Japan within three years, and then gradually move forward with measures for conservation and restoration.



Initiatives to address plastic issues

In March 2024, Denka and Toyo Styrene, an equity-method affiliate, completed a chemical recycling plant for used polystyrene within the Denka Chiba Plant. Plastics are an irreplaceable part of our lives. However, their effects on the environment, including plastic leaking into the ocean, are becoming an issue. By promoting the chemical recycling of polystyrene, the Denka Group is committed to recycling plastic resources and environmental considerations.



Social Contributions and Health Management

Naming rights for Denka Big Swan Stadium

Denka has held the naming rights to Denka Big Swan Stadium (Niigata Stadium) since 2014. This is part of the Denka Group's social contribution policy, and while respecting the cultures and customs of countries around the world, we aim to contribute to their development through our activities rooted in local communities. Niigata Prefecture is home to Denka's Omi Plant (in Itoigawa-shi), its main manufacturing site, and Niigata and Kagamida Plants (in Gosen-shi), where we produce vaccines and test reagents, making it a region that we have had close ties with for many years.



Uniform partner for Albirex Niigata

Denka is the uniform partner of Albirex Niigata, a Japan Professional Football League (J.League) soccer club that uses Denka Big Swan Stadium in Niigata Prefecture as its home stadium. Denka's ESG policy aims to contribute to people's lives and society through the promotion of health and welfare, sports promotion, and community contributions, and to enhance our corporate value.



© ALBIREX NIIGATA

Diversity, equity & inclusion

Amidst major changes in society, people's environments and lifestyles are also changing dramatically. Denka promotes diversity, equity & inclusion (a culture that mutually recognizes diversity, creates fair opportunities for all, and an organization where everyone is welcome and valued). We are working to foster a workplace environment, system, and culture where employees with diverse views can play an active role. As part of this effort, we continue to challenge ourselves to achieve higher corporate goals, aiming to increase the ratios of managerial positions held by women, experienced employees, and foreign nationals.



Safety measures

Denka strives to ensure employee safety measures throughout the Denka Group. We are promoting the development of rules and the creation of a workplace environment that is intrinsically safe, and we are visualizing the sources of danger in the workplace, inspecting equipment, and strictly enforcing work process rules from a third-party perspective in order to achieve zero serious accidents and disasters. We are also strengthening our employee training system and building an environment that can better support smooth communication in the workplace.



tumugu sake made to support reconstruction efforts

As part of its support for the reconstruction effort following the Great East Japan Earthquake, Denka is making "tumugu" sake with the cooperation of a sake brewer. Since the disaster struck in 2011, Denka has been involved in volunteer activities to remove rubble and debris in Minamisanriku and other areas, and has started this initiative by supporting the restoration of farmland and stabilization of production in this area, where rice paddies were devastated by the tsunami. The name of the reconstruction support sake, "tumugu," was chosen by the employees who participated in the volunteer activities, with the hope that the sake will spin the thoughts of those who wish for the recovery of the Tohoku region and connect them to the future. Denka's fertiliizers and agricultural materials are used in the cultivation of Hitomebore sake rice.



Health management and workstyle reforms

An indispensable asset for a company is its people. Denka regards its employees as "human assets." In order to ensure that every employee can spend a comfortable and motivating working day, we are promoting system reforms to create "a workplace where people look forward to coming back the next day." We will continue our efforts to improve employee engagement by promoting workstyle reforms aimed at health management.

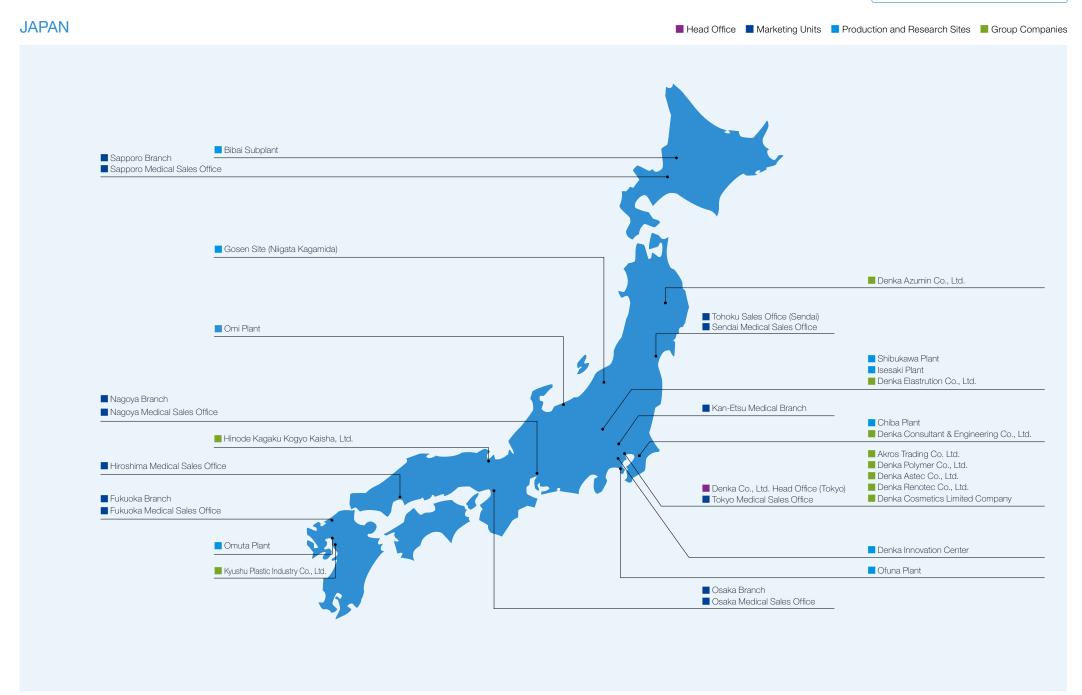


Denka History

_				_			
1915 (\mathbf{c}	Founding period	1985	Q	Expansion into functional chemicals	2009	Launched sales of sialon phosphor ALONBRIGHT
		Dedication to the corporatization of calcium cyanamide			Deep cultivation of Denka's original management resources	2012	Denka Singapore Pte. Ltd. launched production of DENKA IP heat-resistant resin
						2013	Denka Advantech Pte. Ltd. launched production of TOYOKALON
						•	Established Denka Inorganic Materials (Tianjin) Co., Ltd.
		Hokkai Carbide Plant Acetylene lamp Dr. Tsuneichi Fujiyama, the pioneer of the			Series of hermal running series of the sun, which sericonductor such as wirrous substrates and heat encapsulants materials	2014	Established Denka Innovation Center
1916		carbide industry in Japan Omuta Plant launched production of carbide and	1985		substrates and heat dissipation sheets Shibukawa Plant launched production of HITTPLATE, a high	2015	Acquired the chloroprene business from DuPont
1910		calcium cyanamide	1303	Ĭ	heat-dissipation electronic circuit board	2020	Merged with Denka Seiken Co., Ltd.
1921		Omi Plant launched production of carbide	1987	•	Chiba Plant completed production facilities for MALECCA, a styrene-based heat-resistant resin	2020 🔷	Taking on the challenge of COVID-19
1942		Omuta Plant launched production of acetylene black	1989	•	Established Denka Advantech Pte. Ltd. in Singapore (fused silica production)		Becoming a company that is truly needed by society
1945		Entry into the field of organic synthesis Organic development of the chemicals business	1990	0	Business restructuring Specialization in core businesses		
						2000	COVID-19 New Hirnekawa rapid antigen test kit No. 6 Power Plant
		Fused carbide Chloroprene plant			Shipping facilities Constructed jointly with plant of the joint venture Denka Singapore	2020	Obtained approval to manufacture and market a COVID-19 rapid antigen test kit in Japan
		from electric furnace (Omi Plant)			Sumitomo Osaka Cement Co., Ltd. Toyo Styrene Co., Ltd.	2021	Launched production of DELYTACT® injection, a G47Δ oncolytic
1949		Listed on the stock exchanges of Tokyo, Osaka, and Nagoya	1992	•	Shipping facilities constructed jointly with Sumitomo Osaka Cement Co., Ltd.		virus for cancer treatment, at Denka's Gosen Plant on consignment from Daiichi Sankyo Co., Ltd. * "DELYTACT" is a registered trademark of Daiichi Sankyo Co., Ltd.
1955		Capital participation in TOYO KAGAKU Co., Ltd.	1996		Vinyl chloride business transferred to TAIYO VINYL CORPORATION, a joint venture with Tosoh Corporation and Mitsui Chemicals, Inc.	•	Obtained approval to manufacture and market a rapid antigen test kit for simultaneous diagnosis of COVID-19 and influenza
1958		Established Gunma Kagaku Co., Ltd. (currently Denka's Shibukawa Plant)	1998	•	Polystyrene business integrated with Nippon Steel Chemical		virus in Japan
1962 (\mathbf{c}	Expansion into petrochemicals Development			Co., Ltd. and Daicel Chemical Industries, Ltd. to establish Toyo Styrene Co., Ltd.	2022	New Himekawa No. 6 Power Plant, Denka's 17th hydroelectric power plant, launched operation
		of the styrene business		•	Formed business alliance with Sumitomo Osaka Cement Co., Ltd. in the cement business	•	Decided to withdraw completely from the cement business
			2002	•	TOYO KAGAKU Co., Ltd. becomes a wholly owned subsidiary through share exchange	•	Signed an agreement with SCG Chemicals Public Company Limited of Thailand to establish a joint venture company to manufacture and sell acetylene black
		Chiba Plant at the time of Katori Plant of	2004	•	Established Denka Chemicals Shanghai Co., Ltd.		Announced a new vision and the "Mission 2030" management
		Chica Plant at the time of katron Plant of the establishment (1960s) Denka Polymer	2006	•	Denka Singapore Pte. Ltd. added manufacturing facilities for		plan from fiscal 2023
1962		Opened Central Research Institute (currently Denka Innovation Center)			polystyrene, CLEAREN, and clear resin	2023	Toward the future
1969		Opening of Isezaki Plant	2014	Q	Second founding period A new starting line for		Denka's goal for the new future
		(former Fuji Chemical Engineering)			the next 100 years		Started a new vision and the "Mission 2030" management plan
1979		Acquired shares in Toshiba Kagaku Kogyo Co., Ltd. (formerly Denka SEIKEN Co., Ltd.) from Tokyo Shibaura Electric Co., Ltd.				2024	* Please refer to pages 3 and 4 for details.
1980		Established Denka Singapore Pte. Ltd.					
		(acetylene black production)			Denka Sialon phosphor Innovation Center ALONBRIGHT		

The Denka Group's Network of Operating and Production Sites Spanning the World

Click here for more information



The Denka Group's Network of Operating and Production Sites Spanning the World

Click here for more information

GLOBAL



Denka Company Limited

Denka Company Limited

1-1, Nihonbashi-Muromachi 2-chome, Chuo-ku, Tokyo 103-8338, Japan

Established:May 1,1915

Paid-in Capital:¥36,998 million (as of March 31, 2023)

Consolidated Number of Employees: 6,406;

Non-consolidated Number of Employees: 4,198 (as of March 31, 2023)



Publication: 2024