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<https://www.fusokk.co.jp>

company brochure





Life Science



2030

1957



Electronic Materials



Curiosity, for a bright future

FUSO, listed in "2014 Global Niche Top Companies Selection 100", continues to play an active role in all aspects of people's lives through its unique ideas and technologies.

We have two main products.

One is fruit acids. Fruit acids such as malic acid, citric acid, and gluconic acid and their derivatives contribute to all industries as well as being safe food additives.

The other is our state-of-the-art silica-related product line. Products such as ultra-pure colloidal silica and silica nanopowders are the result of our nanotechnology.

These products will create a synergistic effect that will lead to the development of new products one after another with even more potential.

The story of our company began in 1951 with the curiosity of a young man who landed in Osaka with great ambitions. That curiosity transcends time and national borders, and continues to grow and expand.



Main Products

Food sector

- Fruit acids [for food applications]
- Coated fruit acids
- pH adjuster
- Shelf life improver
- Antioxidant preparations
- Quality improver for noodles
- Quality improver for meat/seafood
- Quality improver for processed foods
- Quality improver for tofu
- High purity Glucosamine
- Powdered and liquid defoamers

Agricultural sector

- Feed additives and mixed feed
- Soil conditioner

Industrial sector

- Fruit acids [for industrial applications]
- Water-soluble reducing agents
- Water-soluble rust proof agents, Water-soluble grinding/cutting coolant
- Processing aids for rubber and resin
- High purity organic acids



Supply delicious and safe food to people around the world.
Pass a better environment to the next generation.



Life Science business is engaged in the production of malic acid, citric acid, and other fruit acids, which have the top market share and quality in the world.

They are used as food additives in a variety of processed foods, contributing to the enhancement of dietary life. And also they help to improve food safety and reduce waste. Our products are also used as raw materials for pharmaceuticals and cosmetics, soil conditioners, feed and cleaners for devices.

We've established an efficient system to develop a wide range of applications that can meet various needs from customers.



SUSTAINABLE DEVELOPMENT GOALS

We support the Sustainable Development Goals (SDGs).

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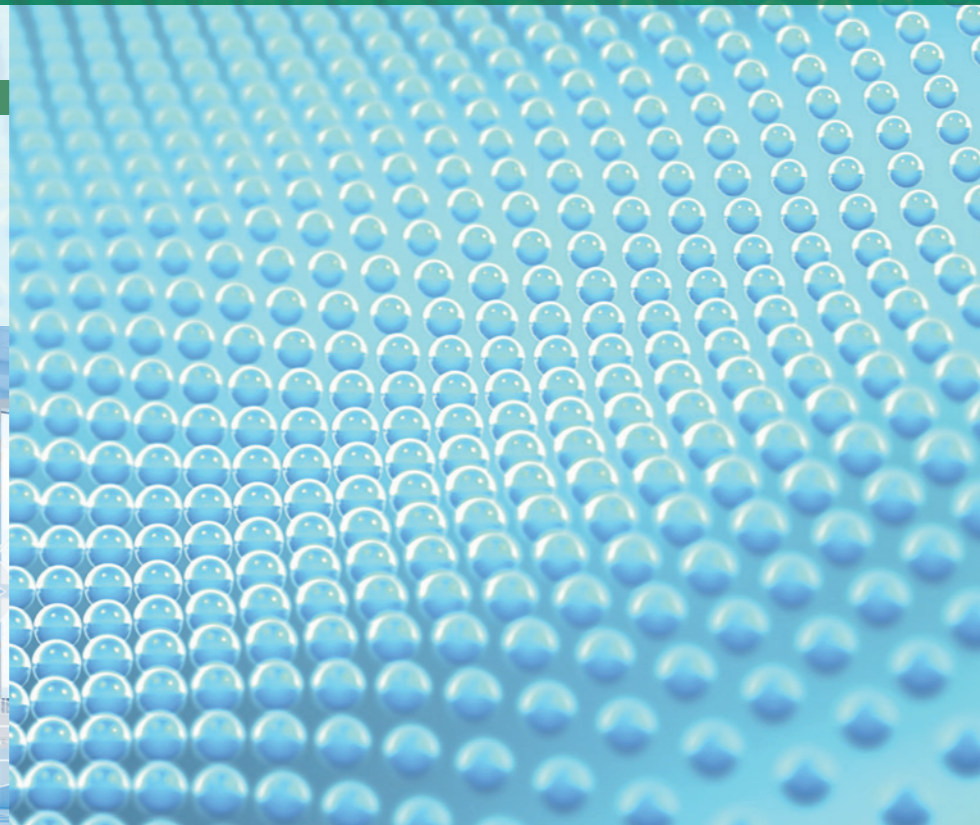
Main products

Electronic Materials

- Ultra High Purity Colloidal Silica

Functional Chemicals

- High purity organosols
- Silica nanopowder
- Silicate



Electronic Materials business is engaged in production of "Ultra High Purity Colloidal Silica". The particle size of "Ultra High Purity Colloidal Silica" is equalized at the nano-level and its purity is 99.9999%. It is used for mirror polishing of silicon wafers that require nano-level planarization and precision. It is also used as an agent for chemical mechanical polishing (CMP), making great contributions to the multilayering and high integration of semiconductors. We also have the technology to control nano-level particles by changing their shape and surface condition. Our advanced technology is utilized in nano-fillers, resin additives, and toner additives for printer inks as well. It is used in products that are all around us, and its applications are expanding.

Scientific know-how for more advanced technology.
Developing the world at the nano-level with our advanced technology.

Malic Acid



Malic acid is an organic acid that was first discovered in apples, and then in a variety of fruits and vegetables. It has a refreshing sour taste and is now mainly used as a food additive to provide safe food to people around the world.

FUSO has been producing and distributing malic acid since 1962. It is the one of the products that established the foundation of our company. So we use it as the motif of our company's symbol. Malic acid is one of our key products, and we have top-class supply volume of malic acid in domestically and overseas.

In Life Science business, we research, develop, manufacture, and sell malic acid.

Use

Malic acid is widely used as an acidifier for soft drinks such as sports drinks and carbonated beverages, sherbets, ice cream, chewing gum, candies, jams, sauces, pickles, and other processed foods. In addition to food applications, it is also used in a variety of other fields, including bathtub detergents, medicated bubble bath powder, deodorants, metal surface treatment, acid cleaners, dyeing agents, water treatment agents, pharmaceutical raw materials, semiconductor cleaners, and fertilizers. It is also added to shampoos for its moisturizing effect that gives hair moisture and luster, used in toothpaste for its whitening effect, and blended into textiles for preventing dry skin and adjusting pH of functional clothing.



History

Production of Malic Acid

1960s

In 1957, Fuso was established by Shozo Akazawa, the founder of the company. Five years later, in 1962, established Kanzakigawa Plant (currently Shin-Osaka Office) and began manufacturing malic acid.

1970s

Expanded sales of malic acid overseas due to its high reputation, and developed malic acid derivatives ("malic acid salt" and "malic acid sodium malate"). Relocated its production base to Sakai Plant (currently Osaka Factory).

1980s~

In 1984, received the award from the Science and Technology Agency for the technology of application development for malic acid derivatives.

In 1986, began refining citric acid.

In 1994, established Qingdao Fuso Refining Co., Ltd in Qingdao, China, and started to produce "refined citric acid (monohydrate)," "refined citric acid (anhydrous)," and "refined sodium citrate."

2020

Completed construction of new malic acid facility in Kashima Plant which produces maleic anhydride as the raw material for malic acid.

Established a production and sales structure as one of the world's leading malic acid manufacturers through integrated production from raw material to malic acid.

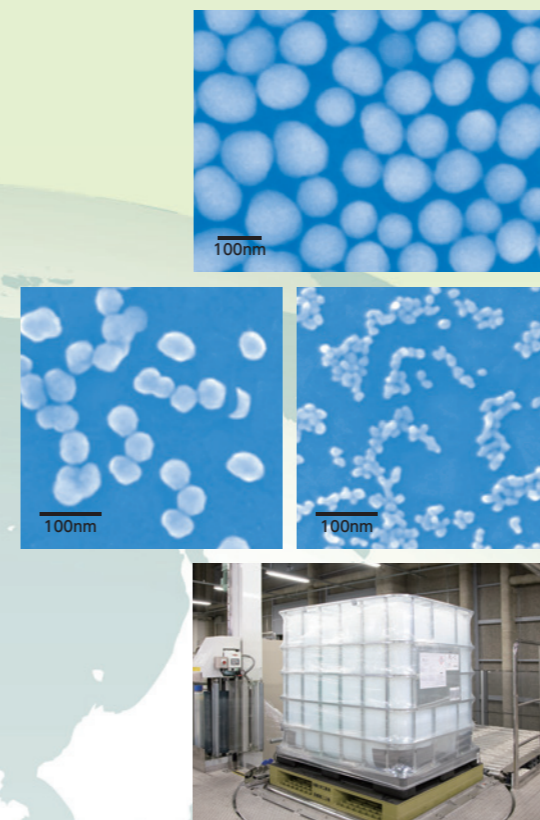


Malic Acid



▲Kashima Plant (malic acid facility)

Ultra High Purity Colloidal Silica



Ultra High Purity Colloidal Silica is the one and only material that is indispensable to all current industries. FUSO is the first company in the world to start mass production of Ultra High Purity Colloidal Silica as the main raw material for semiconductor abrasives, and has been providing a stable supply to the market. We have accumulated experience and technology, so we are able to control the size, the shape, and the surface condition of silica at the nano-level (a nanometer is one billionth of a meter). Our production volume continues to increase especially in the field of CMP (chemical mechanical polishing) which requires high precision at the nano-level. In Electronic Materials business, we research, develop, manufacture, and sell Ultra High Purity Colloidal Silica.

Use

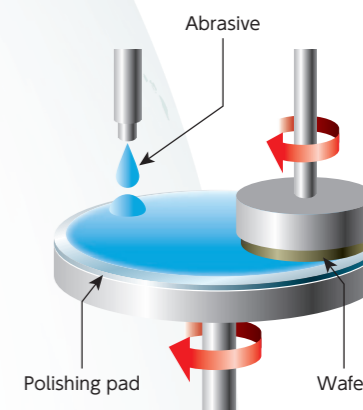
■Mirror polishing of silicon wafers

Mirror polishing is the process of making wafers as flat as possible by removing unevenness on the wafer surface with fine abrasive grains and special pads. Even the slightest stain or scratch is unacceptable. Ultra High Purity Colloidal Silica is often used as the raw material of high-precision polishing slurry.

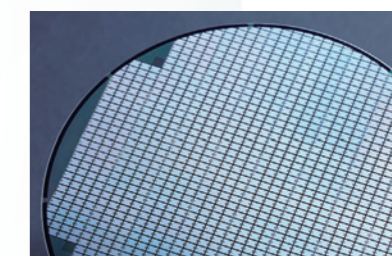
■CMP (chemical mechanical polishing)

CMP is a technology that produces a smooth polished surface at high speed through the relative motion of the abrasive and the object to be polished and it is used extensively in semiconductor manufacturing processes such as integrated circuit wiring. Semiconductors are getting more highly integrated and miniaturized as electronic components are currently getting smaller. In CMP processes, the quality of abrasive particles is very important due to their high effect on the polishing performance. There are only a limited number of suppliers of Ultra High Purity Colloidal Silica as a raw material of polishing slurry for advanced semiconductors. So we are making our position stronger as a supplier.

We will continue to work and take on challenges in order to promptly meet the high level demands of the electronic materials market.



▲Mirror polishing of silicon wafers



■What is a silicon wafer?

A silicon wafer is a disk made of high-purity silicon used as a material for integrated circuits. The wafers are cut into small pieces one by one and assembled into various electronic devices.



▲Ultra High Purity Colloidal Silica is also used in products around us such as toner additives for printer ink.

History

Production of Ultra High Purity Colloidal Silica



▲Kyoto Plant Kyoto Second Factory

1987

Ultra High Purity Colloidal Silica was adopted in the semiconductor industry as the main raw material for silicon wafer final polishing slurry.

1990's~

Expanded main production facilities in Kyoto, Fukuchiyama plants (now Kyoto Plant and Kyoto First Factory) to respond to the increasing demand. In 2007, completed construction of production facilities in Kyoto Second Factory and continuing expansion of production facilities.

2018

Completed construction of the latest line expansion of Ultra High Purity Colloidal Silica production facilities in Kyoto First and Second Factories.





Kashima Plant▶



▲PMP Fermentation Products, Inc.



▲FUSO(THAILAND)CO., LTD.



▲Qingdao Fuso Refining & Processing Co., Ltd.



▲Shin-Osaka Office



▲Osaka Factory

🍏 Projecting FUSO power further, onto the global stage.

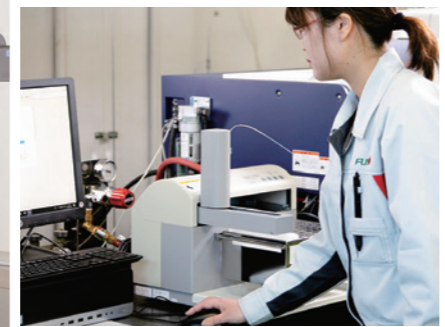
In 2017, we celebrated the 60th Anniversary of our founding, and thus shouldered more than a half century of company's history. This achievement is a testament to our dependability, but also a weighty burden. For one of our main products, malic acid, we are the only manufacturer in Japan, and our ultra-high-purity colloidal silica has established a position as an essential material

in precision manufacturing throughout the world. This know-how has been solidly etched into the DNA of each and every employee of FUSO, so that our customers can state with confidence that they use FUSO products. We always maintain the intense concentration of runners in a relay of responsibility where we must never betray the customer, or lose the trust built up by our

predecessors, or drop the baton without passing it on to the next generation. FUSO does not just compete on the company scale. We have our sights set on "gold medal" products which are No. 1 in their market. Blind pursuit of quality can lead to high prices and delivery delays... Products like that will never win the gold medal. To create gold medal products, we must strive to achieve a masterful balance of speed, cost and quality... However, when we do create a new gold medal product, we win even greater trust and obtain extremely valuable information, and that becomes a new strength for the winning of the next gold medal. That is the FUSO our predecessors have passed down to us, and the raison d'etre of FUSO we must

continue to protect in the future. Therefore, we endeavor to always do our best, and never settle for the status quo. Through our more than 60 years of history, FUSO's manufacturing and sales activities have steadily expanded onto the global stage. However, the world is still a big place, and there are an endless number of fields yet to be discovered. We at FUSO will never stay stuck in the present. We will strive for further development and continue to project FUSO power to the world.

▼Kyoto Plant Kyoto First Factory



▲Tokyo R&D



▲Kyoto Plant Kyoto Second Factory

