For People, Society, and the Future

Corporate Profile

Fuji Chemical Industries Co., Ltd.

Fuji Chemical Industries Co., Ltd.

Striving for Better Health around the World

President and CEO
Mitsunori Nishida

Fuji Chemical Industries was founded in 1946 shortly after the Second World War. In those turbulent times we adopted the philosophy of *Keisei Saimin*(経世済民), which means making a better world by helping people in need.

Since then, we have tirelessly worked on researching and developing pharmaceuticals and their raw materials. This is our contribution to better health around the world based on our mission of “Creation and Service,” and we strive to create new products of the highest quality. Even today, after almost 70 years since we started, we continue to be driven by our founding philosophy.

The most important part of our work is our passion for making products that deliver total satisfaction to our customers and help them lead healthy lives.

Providing value to customers through our corporate activities, contributing to local regions and communities, and working toward better future — these are the things that drive each and every one of our employees.

Through our business activities, we will continue fulfilling our corporate social responsibilities and contributing to the betterment of society. All of which are based on our company’s founding philosophy.

To Be No. 1: Pursuing Innovation to Create New Products and Services

Our founders established the policy of
“serving society in a unique way."
Inheriting this spirit, we have grown to become the company we are today.

Through contract manufacturing of pharmaceuticals and pharmaceutical ingredients, we provide high value-added products & services based on the technology such as spray drying and know-how we have built up over many years of research. We now blaze the trail with natural astaxanthin, which is expected to find growing use in preventive medicine in the 21st century.

We will continue looking towards the future and responding to the needs of our customers, while constantly pursuing the innovation to create new things. This is how our business will grow on the world stage.

• Company Overview

Company name	Fuji Chemical Industries Co., Ltd.
Headquarters	55 Yokohoonji, Kamiichi-machi, Nakaniikawa-gun, Toyama 930-0397, Japan
Established	10 October 1946
President and CEO	Mitsunori Nishida
Employees	447　(as of 1 April 2015)
Main businesses	Contract manufacturing of pharmaceutical ingredients, contract spray drying, manufacturing and contract manufacturing of pharmaceuticals, manufacturing and sales of excipients, natural astaxanthin
Sales revenue	11,156 million Japanese yen (March 2015)

The view of Mt. Tsurugi from the headquarters office

Create unique beneficial value and contribute to human health: Our History and Mission

	Domestic	Overseas
1946	Company founded by its first president, Masayoshi Nishida, and managing director, Yasumasa Nishida	
1954	Received permit to manufacture Neusilin® and began mass production	
1957		Filed patent application for Neusilin® in six countries including the USA and UK
1960	Received an award for science and technology from the Science and Technology Agency	
1964	Launched the anticonvulsant Pipethanate	
1965	Completed first spray drier	
1974	Gohkakizawa Plant began operation	
1976	Launched the anticancer drug Neberk Capsule	
1991	Launched Oldamin®, a drug used in sclerotherapy for esophageal variceal	
1994		AstaCarotene AB, (Sweden) (now AstaReal AB, a fully owned subsidiary of Fuji Chemical Industries) successfully cultured Haematococcus algae in an industrial indoor tank(the first in the world)
1998	Began sales of the directly compressible excipient Fujicalin®	
1998	Completed closed spray drier	
2000	Established NATUREAL Corporation (now AstaReal Co., Ltd.)	
2004		Established Fuji Health Science, Inc. (USA) (a fully owned subsidiary of Fuji Chemical Industries)
2005	Began sales of F-MELT®, an excipient for orally disintegrating tablets	
2012	On 1 April, changed company name to AstaReal to unify the branding of the astaxanthin business both in Japan and overseas	Established AstaReal, Inc. (USA) (a fully owned subsidiary of Fuji Health Science, Inc.)
2012		Established a liaison office in Mumbai, India.
2013		Established AstaReal Technologies, Inc. (USA) (a fully owned subsidiary of Fuji Chemical Industries)
2014	Established Astavita,Inc. (USA)	

Expanding the global network: To bring our values to people around the world

Gohkakizawa Plant
(Main factory)

Japan : Toyama
・Headquarters
・Gohkakizawa Plant

・Tokyo Branch Office
・Tokyo Sales Office
・AstaReal Co,. Ltd.

・Osaka Sales Office

USA : New Jersey
・Fuji Health Science, Inc.
・AstaReal, Inc.

Sweden : Gustavsberg
・AstaReal AB

India : Mumbai
・India Liaison Office

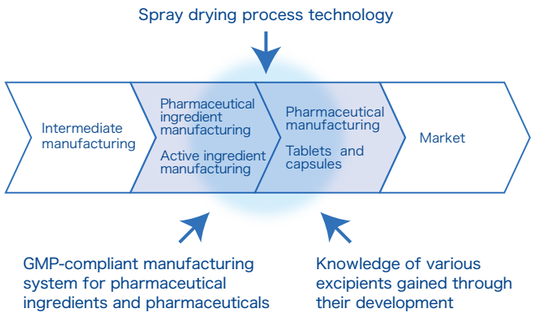
USA : Washington
・AstaReal Technologies, Inc.
・Astavita, Inc.

Contract Pharmaceutical Ingredients

For more than 50 years, we have provided contract manufacturing services for active pharmaceutical ingredients, which are the active components contained in drug products. Our customers are some of the biggest pharmaceutical companies inside and outside of Japan.
We satisfy the diverse needs of our customers, including rapid response from test production to product manufacturing as well as cost savings through process improvements.

Our contract manufacturing services for pharmaceutical ingredients

Fuji Chemical Industries has three strengths that no one else can offer; 1) our spray drying technology, 2) GMP-compliant manufacturing systems for pharmaceutical ingredients and products, and 3) knowledge built up in the development of our excipients. Using these strengths, we manufacture functional pharmaceutical ingredients that meet the needs of our customers and provide more value to our customers' drug products.



Our contract manufacturing solutions for pharmaceutical ingredients

Process development

We provide manufacturing processes that best suit the needs of our customers. We do this by making process improvements such as optimizing reaction parameters and adjusting reagents.

Comprehensive contract manufacturing

We offer total contract manufacturing solutions for all processes from manufacturing of pharmaceutical ingredients to manufacturing of drug products. All our manufacturing use a uniform system that supports global GMP.

Particle design

We design particles according to your needs using various methods including spray drying and pulverization.

Contract Spray Drying Service

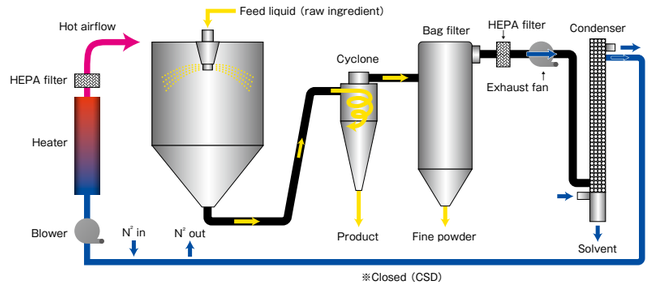
Fuji Chemical Industries has pioneered the use of spray drying in pharmaceutical applications. Drawing on our built-up technology and know-how, we contribute to customers' businesses by providing pharmaceutical ingredients that offer tremendous benefits in terms of both function and cost.
We are expanding our facilities to handle organic solvents, which are rarely used in spray drying, in order to meet the needs of our customers around the world.

What is spray drying?

Spray drying is a granulation method that produces powder by spraying atomized droplets into a hot air flow to instantly vaporize the solvent.
Spray drying offers numerous benefits including well-controlled particle size, grain quality and improved absorption of poorly soluble drugs. This technique is making a large contribution to drug delivery systems*.
There are two types of spray drying: closed spray drying (CSD) and open spray drying (OSD).
Generally, open spray drying is used when the solvent is water and closed spray drying is used when an organic solvent is used.

*Drug delivery systems control the distribution of a drug in the body in terms of quantity, space and time. These are also called drug transport systems. The purpose is to efficiently transport the drug to the required locations inside the body.

Spray drying at a glance



Features of spray drying

- Allows good control of particle size and grain quality
- Improves the absorption of poorly soluble drugs
- Contributes to drug delivery systems

Pharmaceutical Manufacturing and Contract Manufacturing

In addition to the manufacturing of pharmaceuticals that we have researched and developed in our labs, we also offer contract manufacturing to other pharmaceutical companies.
We strive to provide safe and high-quality pharmaceuticals to give patients a sense of security.
One of our strengths is to produce anticancer drugs and we also contribute to the development of drug products for unmet medical needs (medical needs for which effective treatment methods have not yet been devised).

We strive to provide our own safe and high-quality drug products.

Fuji Chemical Industries has been developing various drug products in our labs by drawing on our abundant experience and technology in pharmaceutical ingredient manufacturing.
As a result of our new drug developments in the field of orphan drugs (pharmaceuticals for rare diseases), we successfully created Oldamin®, a drug used in sclerotherapy for esophageal variceal. We lauched "Oldamin® for Injection 1g" in 1991, greatly contributing to treatment in gastroenterology.

【Our main products】

Product	Ingredient / Material	Application
Oldamin® 1g	Monoethanolamine Oleate	Esophageal Varices Selelosis Agent

Excipient Manufacturing and Sales

After creating the antacid Neusilin® in 1954 and then successfully using it as an excipient, we produced the excipients* Fujicalin® and F-MELT® for the pharmaceutical industry.
Using our own technology and accumulated know-how in spray drying and other areas, we develop, manufacture and sell new unique excipients that contribute to improve functionality.

*An excipient is a material added to a formulation when manufacturing drug products. Excipients are used for purposes such as making preparation easier, stabilizing quality and improving usability.

We contribute to the development of better drugs through our excipients and drug delivery system technology.

At Fuji Chemical Industries, our excipients not only offer improved pharmaceutical functions and reduced development times, but also contribute to improve the functionality of products in various fields including food, cosmetics, and chemicals.

●Neusilin®

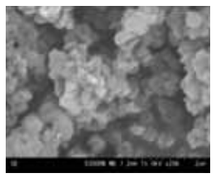
Neusilin® is an antacid that was developed by Fuji Chemical Industries in 1954. It is widely used in pharmaceutical manufacturing as an excipient for improving quality.

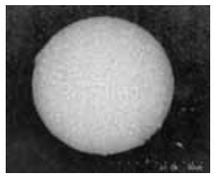
●Fujicalin®

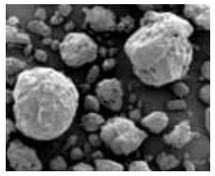
Fujicalin® is an excipient that successfully provided new functionality as a directly compressible DCPA, which was not possible with conventional dibasic calcium phosphate.

●F-MELT®

F-MELT® is an excipient for orally disintegrating tablets. It is precisely processed by our spray drying technology using saccharides, a disintegrating agent, and inorganic excipients as its primary constituents.





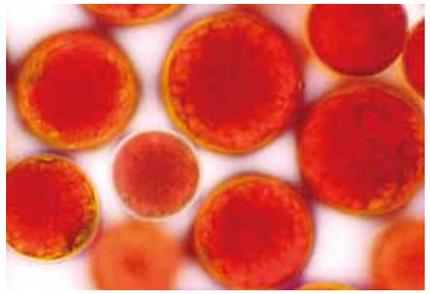


Natural Astaxanthin

Now in the 21st century, we believe that preventive medicine is the most important factor for our better well-being. We have focused on the antioxidant astaxanthin, which is expected to have a number of disease prevention and anti-aging effects. We succeeded in the stable commercial production of natural astaxanthin from algae based on the results of our research and development first in the world.
The Fuji Chemical group is making astaxanthin available around the world through a variety of channels including health foods and medical applications.

In an era of prevention, natural astaxanthin attract more attention.

Astaxanthin suppresses reactive oxygen species and its antioxidant activity is approximately 1,000 times more than that of vitamin E's*.
This natural antioxidant is expected to be highly effective in preventing life style diseases and for anti-aging.
* Miki W, (1991). Pure Appl Chem. 63(1):141-146.



We were the first company in the world to successfully produce natural algae astaxanthin on an industrial scale.

In 1994, we achieved large-scale industrial production of natural algae astaxanthin from the *Haematococcus pluvialis* microalgae for the first time in the world.
We utilize a unique indoor production system, cultivating the microalgae in ultraclean photo-bioreactors. This system allows us to provide the algae with the precise conditions needed for optimum growth and astaxanthin production. As a result we provide the most stable supply of the highest quality natural astaxanthin available in the world.

We provide both astaxanthin bulk ingredients and our own line of astaxanthin retail products to customers around the globe.

To provide safe and high-quality natural astaxanthin to more people, we have recently expanded our production facilities overseas.
We provide natural astaxanthin as a raw material to pharmaceutical companies and food manufacturers around the world while also develop, manufacture and sell nutritional supplement foods and cosmetics under our own brand to medical institutions and the general public.

Quality Assurance

We run a GMP*-compliant quality assurance system that has earned our customers' trust.
Furthermore, we guarantee the highest level of product quality with a quality assurance department that constantly collects the latest information about the GMP which becomes more sophisticated each year and incorporates this information into our quality control and manufacturing systems.
We will continue to raise awareness about quality among each and every employee and we will strive to provide our customers with thoughtful products that offer total satisfaction.

*GMP: Good Manufacturing Practice
GMP is a set of standards for manufacturing management and quality management at manufacturing facilities. It defines practices for creating products safely while ensuring consistent quality in all processes, from procurement of raw materials to manufacturing and shipping of the final product. The content of GMP comes from the USA and is now stipulated by regulations in almost all countries worldwide.

Basic quality policy

We take legal compliance seriously and we provide a stable supply of products that meet the quality, delivery schedules and prices demanded by our customers.

1. We manufacture pharmaceuticals that comply with relevant national regulations.
2. We secure the frameworks and resources needed for providing drug products of the quality demanded by customers and the relevant countries.
3. We set up the quality and safety departments to be independent from the sales department, placing priority on quality and safety.
4. We monitor manufacturing processes and product quality through drug product quality management.
5. We strive to make improvements to continually maintain the quality of our drug products.

Pharmaceutical ingredients and drug products

Recently in new drug development, it has become increasingly common for a promising drug candidate to run into problems due to poor solubility.
At Fuji Chemical Industries, we have responded by working to improve the absorption of poorly soluble drugs by using closed spray drying technology in the research fields of pharmaceutical ingredients and pharmaceuticals. We have successfully developed products that make compounds dissolve and let them be absorbed more easily in the body. Also, we contribute to drug delivery systems by performing spray drying using organic solvents during the formulation of poorly soluble drugs.

Powder technology

Powder technology refers to powder control technology, which further improves product quality and produces new properties while making efficient production and transport possible.
There is a growing need for orally disintegrating tablets, which can be taken easily by the elderly and others who have difficulty in swallowing. Against this backdrop, we have developed the excipient F-MELT® and provided it to the world.
Made with our unique powder technology, F-MELT® is an excipient that satisfies two conflicting properties: fast disintegration and ideal hardness. This is why many of our overseas customers use F-MELT®.

New drug development

Since the 1970s, we have been working on the development of new drugs for pharmaceutical treatments actively.
We instituted a system for performing in-house development up to the clinical trial stage and we promoted the development of original new drugs, becoming the first company in Japan granted approval for "Oldamin® for Injection 1g" and brought it to the market as a treatment for esophageal variceal. In the future, we will focus on developing new drugs and contributing to the future of pharmaceuticals.

Natural astaxanthin

Natural astaxanthin is reported to have effects including antioxidant and anti-inflammatory activities and improvement of circulation. Expectations are growing that astaxanthin could serve as an ingredient for addressing the major health problems in modern society, such as metabolic syndrome, diabetes, high blood pressure, and eye fatigue.
We have been engaged in wide-ranging research on natural astaxanthin: developing the raw materials expected to better contribute to people's health, evaluating its effects on the human body, developing applications, and creating products.
Our goal is to expand the possibilities of natural astaxanthin and contribute to good health.

At Fuji Chemical Industries, we are working on research and development of the following applications:

- Ameliorating accommodative dysfunction of the eye
- Improving stamina and reducing muscle injury
- Protecting endothelial cells in blood vessels
- Skin beauty products for both oral and topical use
- Preventing and ameliorating lifestyle diseases such as metabolic syndrome, hyperlipidemia, high blood pressure, and diabetes
- Alleviating all kinds of physical fatigue including eye fatigue and muscle fatigue

For these applications, we have registered 110 patents and have an additional 40 patents pending in various countries around the world.

List of major registered patents (Japan)

1	Microalgae culture device and method of culturing microalgae	Patent 3462508
2	Baked foods containing astaxanthin	Patent 4647712
3	Astaxanthin aqueous solution	Patent 4656463
4	Process for AstaReal oil	Patent 4934272
5	Oil containing a high concentration of astaxanthin(12% or higher), and foods and ingredients that use this oil	Patent 5334492
6	Improving exercise endurance and alleviating muscle diseases	Patent 3660244
7	Agent for alleviating accommodative dysfunction of the eye	Patent 3778509
8	Improving the motility of semen and increasing sperm count	Patent 3897978
9	Alleviating infectious diseases caused by H. pylori bacteria	Patent 4267076
10	Managing diabetes and alleviating complications of diabetes	Patent 4933097
11	Alleviating autoimmune diseases	Patent 5005143
12	Protection of vascular endothelial cells	Patent 5070040
13	Cosmetics combining astaxanthin and fatty acid glycerides	Patent 5090143
14	Reducing body fat	Patent 5165894
15	Alleviating disuse muscle atrophy	Patent 5196708

The Environment, Safety and Involvement in the Local Communities

The environment

We evaluate our impact on the environment in every aspect and strive to prevent environmental pollution and to reduce our load on the environment.
We promote energy efficiency, waste reduction and recycling for more effective use of resources.

Occupational health and safety

We are working on initiatives aimed at safety management, health management and mental health measures centered on our health and safety committee.
More specifically, we iteratively establish, execute, evaluate and revise annual action plans for health and safety based on a basic policy of putting safety first, and we strive to maintain and improve occupational health and safety.
Furthermore, to promote good physical and mental health among our employees, we have created a comfortable workplace and we continually conduct activities such as training for all employees to raise awareness of mental health and the appropriate actions they can take.

Involvement with local communities

We promote communication activities and contribute to the development of the local communities through our company activities. To achieve this, all our employees recognize that they are a member of the local community and always consider how they can make contributions that are representative of our company. Specific initiatives include cleaning up the areas around Headquarters Plant and our Gohkakizawa Plant and participating in clean-up activities organized by local governments. Furthermore, as a corporate citizen, we are developing community activities rooted in the local region by holding events such as blood dominations twice a year, sporting events and volunteer activities. We also focus on contributing to the arts and culture of the region through operation of Nishida Museum.

Main Plant - Gohkakizawa

Closed Spray Drying Facility

Open Spray Drying Facility

Pharmaceutical Ingredient Manufacturing Facility

Production Facility

Factory Administration Building

Nishida Museum

Fuji Chemical Industries Co., Ltd.

Headquarters
55 Yokohoonji, Kamiichi-machi, Nakaniikawa-gun, Toyama 930-0397, Japan
Tel: +81 76-472-2323 (Main Reception) Fax: +81 76-472-2330

Gohkakizawa Plant
1 Gohkakizawa, Kamiichi-machi, Nakaniikawa-gun, Toyama 930-0397, Japan
Tel: +81 76-472-2323 (Main Reception) Fax: +81 76-472-2330

Tokyo Branch Office
The Front Tower Shiba Koen 12F, 2-6-3 Shiba Koen, Minato-ku, Tokyo 105-0011, Japan
Tel: +81 3-3437-2350 (Main Reception) Fax: +81 3-3437-2348

Tokyo Sales Office
Shiba Koen Ridge Building 7F, 1-8-21 Shiba Koen, Minato-ku, Tokyo 105-0011, Japan
Tel: +81 3-3437-2341 (Pharmaceutical Ingredients and Drugs)
Tel: +81 3-3437-2352 (Health Foods)
Fax: +81 3-3437-2347

Osaka Sales Office
Kotera Plaza 9F, 2-5-23 Kitahama, Chuo-ku, Osaka-shi, Osaka 541-0041, Japan
Tel: +81 6-6202-8901 (Main Reception) Fax: +81 6-6202-8909

India Liaison Offce
Regas, Cabin M01, 13th Floor, R-Tech Park Bldg No 2
Nirlon Knowledge Park, Off Western Express Highway, Goregaon (E) , Mumbai, India
Tel: +91 (22) 4476-4567 Fax: +91 (22) 4476-4568

Group Companies

AstaReal Co., Ltd.
The Front Tower Shiba Koen 12F, 2-6-3 Shiba Koen, Minato-ku, Tokyo 105-0011, Japan
Tel: +81 3-3437-2352 Fax: +81 3-5408-1126
http://www.astareal.com

Retail Business Division	Tel: +81 3-3437-2356
International Business Division	Tel: +81 3-3437-2353
Raw ingredient Business Division	Shiba Koen Ridge Building 7F, 1-8-21 Shiba Koen, Minato-ku, Tokyo 105-0011, Japan Tel: +81 3-3437-2352 Fax: +81 3-3437-2347
Osaka Sales Office	9F, Kotera Plaza, 2-5-23 Kitahama, Chou-ku, Osaka-shi, Osaka 541-0041, Japan Tel: +81 6-6202-3826 Fax: +81 6-6202-3828
Toyama Branch Office	1 Gohkakizawa, Kamiichi-machi, Nakaniikawa-gun, Toyama 930-0397, Japan Tel: +81 76-472-2336 Fax: + 81 76-472-5090

Fuji Health Science, Inc. (USA)
3 Terri Lane, Unit 12, Burlington, NJ 08016, USA
Tel: +1 609-386-3030
Fax: +1 609-386-3033

AstaReal, Inc. (USA)
3 Terri Lane, Unit 12, Burlington, NJ 08016, USA
Tel: +1 609-386-3030
Fax: +1 609-386-3033

AstaReal Technologies, Inc. (USA)
7761 Randolph Rd NE, Moses Lake, WA 98837, USA
Tel: +1 509-855-4370
Fax: +1 509-766-9073

Astavita, Inc. (USA)
2200 Alaskan Way Seattle,
WA 98121 USA

AstaReal AB (Sweden)
Idrottsvägen 4, 134 40 Gustavsberg, Sweden
Tel: +46 8-570 139 50
Fax: +46 8-570 139 51

Fuji Chemical Industries Co., Ltd.

http://www.fujichemical.co.jp

201506