

Site Profile

It introduces six plants, four laboratories, and eight group companies of the Nippon Kayaku group.



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Fukuyama Plant

Group company within the workplace / Nippon Kayaku Fukuyama Co., Ltd.

Profile

- **Location** 126, Minookicho, Fukuyama-shi, Hiroshima
721-8567 Japan
- **Plant Manager** Kenji Takeda
- **Contact** Environment Preservation Department
084-954-8201
- **Number of employees** 270 (as of end May 2007)

History

The plant was established as a company manufacturing sulfuric coating in Fuchu City of Hiroshima Prefecture in 1916 and for many years, continued to manufacture synthetic coating and intermediate products for coating in Iribune-cho that is situated at the center of Fukuyama City. In 1986, the plant relocated to its current location at Minookicho and while succeeding in the techniques in the synthesis of coating nurtured through many years of experience, it underwent transition into a fine chemical plant. Today, the company is expanding its business to products with even higher value addition as it responds to the needs of the market.

Major business

With organic synthesis as the base technology, the plant targets being number one and the only one in niche products and manufactures functional materials, electronic information materials, and coloring.

Functional materials include ultra violet curing agents, epoxy resin curing agents, and highly functional chemical substances and these products are widely used in electronic information materials, printing inks and coatings.

Electronic information materials include UV adhesives, UV coating, heat sensitive agents and pigments for ink jets and are used for DVD, optical lenses, PDP, LCD, POS labels, and ink jet printers.

For the optical film domain, a new facility opened in August 2006 for manufacturing optical films for plasma panel televisions. This new facility has realized a system of developing and producing the specific optical films in-house, in addition to the conventional outsourcing system.

Coloring includes pigments for textiles, pigments for paper, pigments for resin coloring, and pigments for sublimation transfer.

Environment in the vicinity of the plant

The plant is located in Fukuyama City at the eastern end of Hiroshima Prefecture and is in the Minookicho Industrial Park facing the Seto Inland Sea in an area that constitutes a petroleum refinery complex. The sea to the South has ample seawife and smelt whiting and is an ideal fishing spot.



The old plant main gate transferred from Iribune-cho

Relations with the local community

In order to promote amalgamation with the local community, the welfare grounds (soccer and baseball) comprised of the comprehensive athletics facilities with a field equipped for night games, and tennis courts (five Omnicourts) are open for use by citizens of the local community and interaction with the local community is treasured as seen in the Shining Festival, a corporate festival, and tennis championship matches. Moreover, the plant is active in promoting the development of the community such as by assuming the role of officer in associations of the community.



Tennis courts



The Shining festival

Profile

- **Location** Location:2300, SanyoOnoda-shi, Yamaguchi 757-8686 Japan
- **Plant Manager** Seiki Fukunaga
- **Contact** Environment Preservation Department 0836-72-0913
- **Number of employees** 228 (as of end May 2007)

History

The Asa Plant was established at its current location as Nippon Kayaku Manufacturing Co., Ltd. in 1916 and has been producing industrial explosives, catalysts for the petrochemical industries, and specialized epoxy resin for sealing semiconductors. In 1966, the name of the plant was changed from "Asa Works" to "Asa Plant"



and in 1995, the plant acquired ISO certification for quality and in 1998, it acquired ISO certification for environment management.

Major business

Production items are Slurried Explosive, ANFO Explosive, gunpowder, dynamite for industrial explosives, catalyst for petrochemical industry, resins used for the encapsulation of semiconductors, resist ink resins for printed wiring boards, liquid crystal seal material, and nitroglycerine for medicines.



Slurried explosives factory



The 3rd catalyst factory

Environment in the vicinity of the plant

The Asa Plant is located near the mouth of and on the both sides of the Asa River, which flows along the center of Sanyonoda city in Yamaguchi prefecture. The "Kawanishi Plant," located on the west side of the river, is surrounded by the Asa River on one side and the

mountains on the other. On the premises of Kawanishi Plant runs the "Ishizaya River" and "Yonose River" flowing into the Asa River. "Kawahigashi Plant," on the east side of the Asa River, stands on land that has been carved out and leveled.

Relations with the local community

With respect to the possible odor and noise problems that arise from the plant, a monitoring system has been in place for over 20 years to elicit the opinions of the local community. The results of the monitoring are announced at the regional community meetings held every year, together with the information on the environmental activities engaged in at the plant. Moreover, in an effort to coexist with the local community, we actively participate in environmental activities (tree planting, grass mowing, etc.) in accordance with the requests from the local residents received during the regional community meetings.

Deodorization equipment introduced into Nippon Kayaku for the first time. This deodorization equipment completely incinerates toxic air pollutant at temperatures above 800° C.



Takasaki Plant

Profile

- **Location** 239, Iwahanamachi, Takasaki-shi, Gunma 370-1208 Japan
- **Plant Manager** Hiroyuki Wakaumi
- **Contact** Environment Preservation Department
027-346-1007
- **Number of employees** 276(as of end May 2007)

History

This plant was established as the Iwahanamachi Works in 1946 and began manufacturing such industrial explosives as black powder. In 1971, it discontinued the production of explosives and renamed itself "Nippon Kayaku Co., Ltd. Takasaki Plant" and was reborn as our pharmaceuticals manufacturing base.

Later with accreditation from the FDA (Food and Drug Administration of the United States) and MHRA (Medicines and Healthcare products Regulatory Agency of the United Kingdom), the plant began exporting pharmaceuticals worldwide.

The 2nd Formulating Factory that is currently under construction is being built to global GMP standards.

Major business

Production items are anticancer agents, drugs for the circulatory system, prescription drugs such as vitamins, bulk and intermediate drugs through the use of fermentation and synthesis, pharmaceuticals for extracorporeal diagnosis, and food additives.

Environment in the vicinity of the plant

In Iwahanamachi in Takasaki where the plant is located, there used to be a residence of the Kanto magistrate's office of the Tokugawa Shogunate. Our company housing and training center stand on this historical site. The plant is bordered by three Class 1 rivers of the Tone River System with Kasu River to the north, Ino River to the



The concepts behind this factory are to use facilities dedicated to anticancer drugs, high quality and high efficiency, and compatibility with DDS drug production. This will be a leading edge injected drug factory that is environmentally friendly because it will use advanced technology to seal off hazardous substances, it will not use chemical sterilization and will have safe sterilized rooms that use maintenance control technology, and it will aggressively use energy saving equipment.



The 2nd formulating factory near completion

east, and Karasu River to the south and most of the northern border of our premises is adjacent to the Gunma-no-Mori prefectural park. This area is designated as a wildlife sanctuary and pristine wilderness is found in the depths where many wild animals make their habitat.

Relations with the local community

● Fureai Festival(Community & Friendship Festival)

Fureai Festival has been successful for the last 21 consecutive years, now having become firmly rooted as a community event. We welcome a large number of visitors from the local community on the second Sunday in May each year.



Profile

- **Location** 31-12, Shimo 3 chome, Kita-ku, Tokyo 115-8588 Japan
- **Plant Manager** Shigeru Ishii
- **Contact** Environment Preservation Department 03-3598-5111
- **Number of employees** 125(as of end May 2007)

History

The Japan Pigment Research Institute (Colorant Section) that was established in 1927, the Tokyo Colorant Industry (Shinden Section) that was established in 1929 and Yamakawa Pharmaceutical (Pharmaceutical Section) that was established in 1931 were merged between 1943 and 1944 into Nippon Kayaku



and the pharmaceutical section began manufacturing activities as the Oji Pharmaceutical Plant while the colorant section and Shinden section began manufacturing as the Oji Colorant Plant. In 1982, the two plants were merged into what is currently known as the Tokyo Plant.

Major business

Pharmaceutical Section: Although some of the functions as the active pharmaceutical ingredients manufacturing plant have remained, the pharmaceutical section has now been reborn as the research and development section following the completion of the Integrated Research Laboratories and the improvement project for

the surrounding areas.

Shinden Section: manufactures direct dye, reaction dye, acid dye, colorants for resins, intermediates of colorants for resins and dyes, functional colorants and resins as functional chemicals. It also uses part of the colorant section.

Environment in the vicinity of the plant

The Tokyo Plant is located in Akabane, which may be called the northern gate to the metropolis and the Ara River and Sumida River that have for many long years provided water to the residents of this area flow near

the plant with scenes blessed with history and nature. The plant straddles the Sumida River and is thus located in both the Kita Ward and Adachi Ward.

Relations with the local community

As a typical plant located in an urban area adjacent to private residences, we deeply recognize the importance of coexistence with the local community. With respect to our greening project, we have been actively promoting the greening of the landscape in the pharmaceutical section and colorant section, and have achieved the greening target of Kita Ward. We have also reached a "green agreement" with Adachi Ward in Tokyo, and have been putting our dedicated efforts in greening projects. For the treatment of our wastewater, we have installed the microbiological decolorization system in the Shinden section to decolorize colored wastewater, in accordance with the statement of mutual agreement with the Bureau of Sewerage Tokyo Metropolitan Government. In addition, we have entered into an agreement with the Shinden town council on mutual aid in times of disasters, especially in case of an earthquake.

● Lifesaving ferryboat

Nippon Kayaku's Tokyo plant is located on both sides of the Sumida river. As a result, a ferryboat is used to cross the river, which is highly unusual in the Tokyo area. Although this ferryboat is normally operated as a transportation vehicle for employees, it is also registered with the Fire Defense Agency as a lifesaving boat and is ready to be mobilized in the event of a water accident. Nippon Kayaku has also been awarded a

certificate of commendation for its distinguished lifesaving service.

● Plant tour and corporate festival

We have also been organizing plant tours for the town council members and plant festivals inviting local residents.



Ferryboat



Corporate festival

Himeji Plant

Profile

- **Location** 3903-39, Toyotomi, Toyotomicho, Himeji-shi, Hyogo 679-2123 Japan
- **Plant Manager** Kiyoshi Kurino
- **Contact** Environment Preservation Department
0792-64-3001
- **Number of employees** 204(as of end May 2007)

History

In 1916, manufacture of industrial detonating caps began at the Nibuno Works to supply metal mines throughout the country such as the Ikuno Mines. In 1951, manufacturing of safer and more efficient electric detonating caps began and these were supplied to coal mines, metal mines and construction companies throughout the country thus contributing to the economic development after the Second World War. With the conversion of energy use, the plant converted to the manufacturing of safety parts for automobiles



and began the manufacture of inflators for automobile air bags in 1992 and the manufacturing of micro gas generators for providing tension to seat belts in 1998. Today, the plant is the core of global tripolar operations with group companies in Europe and the United States.

Major business

Production items are safety parts for automobiles such as inflators for air bags and micro gas generators for seat belt pre-tensioners.

The environment in the vicinity of the plant

The Himeji Plant is situated northeast of Himeji City in the western side of Himeji Central Park. The vicinity is surrounded by hills of about 300 meters and the location is blessed with a natural environment and is a habitat for numerous birds and small animals. There is a farming reservoir pond that is visited by ducks about half way up the hill and a creek flows into the plant premises from this pond.



Inflator assembling plant

Relations with the local community

● Summer fireworks

Summer Firework Festivals are convened in the summer each year. The festival in the summer of 2007 was the 14th such occasion and more than 1,500 local residents visited the festival. A band organized by plant workers provided entertainment and food stalls provided refreshments. The families that visited found the event highly enjoyable.



Kashima Plant

Profile

- **Location** 6, Sunayama, Kamisu-shi, Ibaraki 314-0255 Japan
- **Plant Manager** Kenji Konishi
- **Contact** Environment Preservation Department 0479-46-4588
- **Number of employees** 64 (as of end May 2007)

History

The Kashima Plant began operations in December 1982. While upon commencement of operations, the staff numbered just under 30, today, the number including workers of affiliated companies is about 90. All workers commute to the plant by car. As a result of having taken measures to ensure accident free operations from



commencement of operations, no disaster resulting in work stoppage has ever occurred and the plant has been awarded the Fire Defense Agency Award and the Ministry of Health, Labour and Welfare Prize for encouragement.

Major business

Production items are raw materials and agents of pesticides, sterilizers, herbicides and animal repellents are manufactured in an automated facility that is computer controlled. The pesticide Diazinon, soil pesticide Chloropicrin are the main products manufactured. Microcapsule agent constitutes a characteristic agent manufacturing technology of the company and is applied for prevention of epidemics or for pesticide for sweet potatoes.



Control room

Environment in the vicinity of the plant

This plant is located within the Hasaki Industrial Park that is part of the Kashima Waterfront Industrial Park region. Electricity and steam are supplied from joint facilities within the industrial park. Waste water is treated at the

Kashima Sewerage Works. In addition to this, as Kashima is close to the Pacific coast, it is known for its wind power generation (total 15 units). The climate is mild with cool summers and warm winters and life is easy in these parts.

Relations with the local community

- We use dichloromethane as an organic chlorine solvent for the manufacture of agrochemicals. We have been aiming to be a "plant that is qualified for handling organic chlorine solvents safely and properly" since the opening of the plant. Thanks to the installation of exhaust gas decomposition equipment in September 2004, we are now one step closer to the achievement of this goal. We will continuously exert ourselves to maintain coexistence and co-prosperity with the local community.
- The Hasaki Industrial Park consists of 23 corporations and forms a joint organization to discuss and take measures on

regional disaster prevention and environmental-related issues, while striving towards the conservation of coexistence and co-prosperity with the local community.

Incentive award from the Minister of Health, Labor and Welfare
The Kashima plant received an incentive award from the Minister of Health, Labor and Welfare for "being particularly excellent in securing a safe workplace environment." in July, 2005



Exhaust gas decomposition equipment

Functional Chemicals R&D Laboratories

Profile

- **Location** 31-12, Shimo 3 chome, Kita-ku, Tokyo 115-8588 Japan
- **General Manager** Masaki Shimamoto

Introduction of the research program

As the research and development department of the Functional Chemicals Group, the Functional Chemicals R&D Laboratories are involved in a variety of research and development areas including such functional resins as resins for sealing semiconductors, ultra violet curable resin for optical disks, and resin for sealing liquid crystal, functional colors such as colors for inkjet printers, infrared absorption colors, colors for CD-R and DVD-R, colors for dyesensitized solar cells, functional films such as polarized film and anti-reflecting film, catalysts for the production of acrylic acid and methacrylic acid, and new materials that are derivatives of these products.

IT (information technology) is progressing at a rapid pace and the



Functional Chemicals R&D Laboratories is involved in the development of materials that provide internal support to the various information related equipment enumerated above. For this reason, new materials are constantly being pursued and with the perspective of materials that are appropriate to the environment that can satisfy needs for green procurement, the facility develops products that comply with the laws and regulations concerning chemical substances of Japan as well as the world and undertakes research and development with the environment of the earth as a whole in perspective.

Pharmaceutical Research Laboratories

Profile

- **Location** 31-12, Shimo 3 chome, Kita-ku, Tokyo 115-8588 Japan
- **General Manager** Masanobu Suzuki

Introduction of the research program

The Pharmaceutical Research Laboratories undertake research and development dedicated to anti-cancer drugs. Our aim is to improve the lineup of our anti-cancer drugs, with a focus on development of high polymer micelles using nanotechnology, through research and development of new anti-cancer drugs for the treatment of solid cancers, research and development of new drugs targeting breast cancers and prostate cancers (hormone related cancers), joint research and joint development with external companies or organizations, and development of generic anti-cancer drugs.

● Development of DDS anticancer drugs through use of nanotechnology

The Pharmaceutical Research Laboratories have been actively involved in the research of nanotechnology DDS (Drug Delivery System) that utilizes high polymer crystallite technology. Taking advantage of the nature of the new blood vessels whose small gaps allow nano-sized particles to easily pass through, this technology has succeeded in selectively delivering high polymer crystallite with a diameter of between 20 and 100 nanometers containing anti-cancer drugs to the cancer cells.

Due to the research of high polymer micelles anti-cancer drugs we started

in 1989, three themes have reached the clinical testing stage so far. We are also examining the development plan with an eye to the overseas possibilities.

● Expansion to Generic Products, Devised Preparations, Diagnostics and Medical Equipment

We have initiated the development of generic anti-cancer drugs by applying the technologies cultivated through the development of new drugs. We aim for one-stop service at medical facilities and institutions, through the addition of generic drugs in our product lineup. Furthermore, we will continue our endeavor to expand our scope to devised preparations, diagnostics and medical equipment, with a goal of providing not only pharmaceuticals but also other products to broadly meet the needs of the medical field.



Molecular weight measurement using the latest equipment

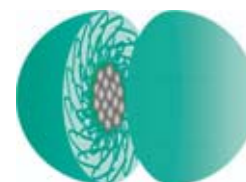


Image of DDS anticancer agent

Safety Systems Development Laboratories

Profile

- **Location** 3903-39, Toyotomi, Toyotomicho, Himeji-shi, Hyogo 679-2123 Japan
- **General Manager** Ayumu Kimura

Introduction of the research program

The research laboratories began developing auto safety parts based on our technologies related to explosives, such as electric detonators. They are responsible for research and development within the Safety Systems Group. Airbag inflators and micro gas generators for seatbelt pretensioners now being developed consist of the squib as the ignition device and the combustion gas generator. In an emergency such as a collision, they are activated by the combustion of explosives. Researchers are striving to develop environmentally-friendly products using such explosives and parts based on quality reliability to meet the demand of the next generation for lighter and smaller products. The use of auto safety parts is increasing as passenger



protection methods diversify and pedestrian protection methods expand, and the laboratories are engaged in R&D activities to satisfy new performance requirements.



Inside of an air bag for driver's seats

Agrochemicals Laboratories

Profile

- **Location** 6, Sunayama, Kamisu-shi, Ibaraki 314-0255 Japan
- **General Manager** Shuji Kawata

Introduction of the research program

The Agrochemicals Laboratories began its operation in Ageo city in Saitama prefecture as a laboratory in the agrochemicals section of the Nippon Kayaku Group. The Agrochemicals Laboratories moved into the premises of the Kashima plant in Kamisu city in Ibaraki prefecture in June 2006. We conduct research and development of products that contribute to people's affluent and varied diet in society, making the most of our technologies in chemical composition as well as biological and formulation technologies.

In order to contribute to the affluent, safe and reliable food supply through the farming community, we have been involved in research and development of environmentally friendly chemical pesticides, new agrochemical formulation and biological pesticides, by applying our new formulation technology and biotechnology.

● Biological pesticides

At Nippon Kayaku we have been putting great efforts into inventing biological pesticides that are environmental-friendly but highly effective in the extermination of harmful insects at the same time. We



have developed a biological pesticide "Hasumon Tenteki (cluster caterpillar's predator)" (trade name) that targets and controls the hard-to-control pests Hasumonyoto (cluster caterpillars) without affecting neighboring environment. This pesticide uses a type of virus that is found in nature and only infects cluster caterpillars. Humans and livestock will not be affected. It is also effective for preventing other pest insects than cluster caterpillars from propagating, since the pesticide does not kill natural predators such as bees and spiders. Another advantage of "Hasumon Tenteki" is that once it is dispersed, the dead insects become new sources of infection therefore a long lasting effect can be expected.



Polatechno Co., Ltd.

Profile

- **Location** Aza Shimogawara, Inamasu, Itakura-ku, Joetsu-shi, Niigata, Japan
- **President** Koichi Takase
- **Number of employees** 497
- **History**

Polatechno Co., Ltd. was formed as a joint venture between Nippon Kayaku Co., Ltd. and Arisawa Mfg. Co., Ltd. in July 1991, and this structure continues to this day.

- **Major business**

The company manufactures and markets polarized film for crystal displays, phase contrast film, polarized film for projectors, and other precision processed products.



Kayaku Chemical (Wuxi) Co., Ltd.

Profile

- **Location** Wuxi, Jiangsu, China
- **President** Hideaki Hattori
- **Number of employees** 54
- **History**

Kayaku Chemical (Wuxi) Co., Ltd. acquired a business permit in September 2002 as a wholly owned subsidiary of Nippon Kayaku Co., Ltd. And the company began formal operations in March 2004.

In August 2006, the company acquired the international environment management standard ISO14001 certification.

- **Major business**

The company manufactures and markets electronic material related resins.



Nippon Kayaku Food Techno Co., Ltd.

Profile

- **Location** Shinmati, Takasaki-shi, Gunma, Japan
- **President** Naohiko Takeuchi
- **Number of employees** 80
- **History**

Nippon Kayaku Food Techno Co., Ltd. was formed in 1995 as an independent spin off from the Food Quality Maintenance Department of Nippon Kayaku Co., Ltd. The company entered the health food business in 1996 and this structure continues to this day.

- **Major business**

The company manufactures and markets preservatives for food quality (ethanol, deoxidizer, release controlled powdered ethanol, amino acid, storage duration enhancer, cleaning and sterilizing agents) and chitosan, a special health food and raw material for health food as well as products related to health care.



Indet Safety Systems a. s.

Profile

- **Location** Vsetin, Czech Republic
- **Chairman** Kenjiro Nishida
- **Number of employees** 404
- **History**

In 1999, Nippon Kayaku Co., Ltd. and former Nichimen jointly invested in a company that had been spun off from the automotive safety igniters manufacturing department of an explosives company that was established in 1946. In March 2004, the equity holding of Nippon Kayaku was raised to 100%.

- **Main businesses**

The company develops, manufactures and sells squibs as ignition devices, fuse heads, and micro gas generators used in auto safety devices.



LifeSparc Inc.

Profile

- **Location** California., USA
- **President** Hisashi Sekiguchi
- **Number of employees** 254
- **History**

The company was established as a joint venture between Nippon Kayaku and the former Nichimen(Toyota Tsusho) in 2000. Manufacturing and marketing using the new plant began in 2002. In April 2004, the company became a wholly owned subsidiary of Nippon Kayaku.

- **Main business**

The company develops, manufactures and sells squibs as ignition devices and micro gas generators used in auto safety devices.



Wuxi Advanced Kayaku Chemical Co., Ltd.

Profile

- **Location** Wuxi, Jiangsu, China
- **President** Norio Suzuki
- **Number of employees** 211
- **History**

The company was established as a joint venture among former Tomen(Toyota Tsusho), Bata Huah Gong Tzong Chang and Nippon Kayaku in 1995. In 1999, the company was reborn as a company with shares wholly owned by Japanese entities and this structure continues to this day.

- **Major business**

The company manufactures and markets disperse dyes and water-soluble dyes for textiles.



Zhaoyuan Advanced Chemical Co., Ltd.

Profile

- **Location** Zhaoyuan, Shandong, China
- **President** Hajime Kondo
- **Number of employees** 145
- **History**

The Zhaoyuan Advanced Chemical Co., Ltd. was established as a joint venture among former Tomen(Toyota Tsusho), Jau Yeuan Huah Gong Tzong Chang and Nippon Kayaku in 1995. In 1998, the company was reborn as a company with shares wholly owned by Japanese entities and this structure continues to this day.

- **Major business**

The company manufactures and markets fluorescent coating and its intermediates as well as colored coating.



Kayaku Japan Co., Ltd.

Profile

- **Location** Sunagawa-shi, Hokkaido, Japan
- **President** Shigeki Yamamoto
- **Number of employees** 28
- **History**

In 1945 Hokuyokayaku was established as a joint venture between former Toyo Koatsu Co., Ltd. and Nippon Kayaku Co. Ltd. for manufacturing industrial explosives for use in mines. In 1961, Nippon Kayaku purchased all outstanding shares of the company. In November 2007, the company name was changed to the present one from Hokuyo Kayaku.

- **Major business**

The company manufactures and markets ammonium nitrate explosives and watergel that are safe and value added explosives for use in the construction of roads, dams and tunnels as well as in mines and quarries.

