



Toyal Group Corporate Guide 2022



Join Together to Shape the Future

■ Management Philosophy

Mission

Establishing New Social Norms

"Materials × Technology × Service" to Add Value to Anything from Personal Space through Outer Space

Vision

A Globally Acclaimed Company Employees Feel Proud of

One of a Kind

Leveraging Open Innovation to Create Products/Services that Surpass Customer Expectations

Collective Genius

Each and Every Employee Displays Their Merits with Verve to Create Value as a Team

Value

Making Work Fun

Let Us All Derive Joy from What We're Doing!
Everyone is Encouraged to Try New Things

Integrity and Sincerity

Applying Ourselves Diligently in All We Do—Creating the Toyal Brand Anew

Together with Customers

Mapping out Solutions with Everyone Considering What is Best for Customers



■ Message from the President

We aim to provide products and services that always inspire customers, prove useful for society, and are environmentally friendly.

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Since our company's founding 90 years ago, we at the Toyal Group have sought out the potential of functional and design applications for aluminium. We have contributed to society through the development of a wide range of environmentally friendly products that are beneficial to society, from aluminium foil used as packaging material for food, medical products, and electronic components as well as powder and paste products used as paint pigments and high-performance material, to daily essentials and photovoltaic components.

In the course of our journey, the Toyal Group has gone beyond aluminium to develop eco-friendly products such as molded pulp containers, and in addition to raw materials, we have expanded from processed products to service offerings, growing into a manufacturer that has expanded our business not only in Japan, but globally in Europe, the US, China, and several Asian countries.

Additionally, in our sustainability initiatives, we are engaging in co-creation with society and our customers. This co-creation includes the development and sales of products that can

contribute to SDGs using our proprietary core technology, the reduction of CO₂ emissions in our business activities, and measures as well as environmental improvements that will allow human resources from diverse backgrounds to work together and reach their full potential.

With the idea that "the future is the product of dreams (what we want to be) x development capabilities x design," we will set a date for our dreams and then engage in business activities. From now on, we will use the development capabilities that make use of our proprietary core technology as a source of growth, and under our course of action of "Join Together to Shape the Future," we will respond to the demands of our customers and contribute to the development of a new society.

"The Toyal Group considers its employees to be valuable resources. Therefore, they are described as "human resources."

Sincerely,

Kaoru Kusumoto
President and
Representative Director

K. Kusumoto

Sustainability

Contributing to the realization of a sustainable society through the realization of “Joining Together to Shape the Future” is the Toyal Group’s sustainability management.

We contribute to society through our business activities and create the future with our own hands.

We will celebrate our 100th anniversary in 2031, and we will continue to think seriously about what we can do and take action to ensure that we can endure until our 150th and 200th anniversaries.

Aiming to realize a sustainable society, we will steadily promote sustainable management by integrating sustainability and management.



The Toyal Group supports the Sustainable Development Goals.



Toyal Group Sustainability Vision and Materiality

The Toyal Group is considering a growth strategy toward our 100th anniversary in 2031. The growth strategy consists not only of a financial strategy but also of non-financial strategies such as for the environment, society, and governance. To this end, we have formulated the Toyal Group Sustainability Vision for 2031. We have also identified five key materialities as CSR issues for the Toyal Group.





Toyal Group Sustainability Vision: “TOYAL 2031 - Toward Our 100th Anniversary”



Participation in the United Nations Global Compact

The Toyal Group announced its participation in the Global Compact proposed by the United Nations and registered as a participant on April 10, 2018. Pursuant to the Ten Principles of the UN Global Compact on human rights, labour, environment, and anti-corruption, we will contribute to the creation of a sustainable society by actively promoting responsible management as a global company and cross-Group sustainability activities.

The Ten Principles in the four areas of the UN Global Compact

| | | | |
|---|--|--|---|
|  HUMAN RIGHTS | Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and Principle 2: make sure that they are not complicit in human rights abuses. |  LABOUR | Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining; Principle 4: the elimination of all forms of forced and compulsory labour; Principle 5: the effective abolition of child labour; and Principle 6: the elimination of discrimination in respect of employment and occupation. |
|  ENVIRONMENT | Principle 7: Businesses should support a precautionary approach to environmental challenges; Principle 8: undertake initiatives to promote greater environmental responsibility; and Principle 9: encourage the development and diffusion of environmentally friendly technologies. |  ANTI-CORRUPTION | Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery. |

The origin of aluminium to make the future bright

Research & Development

Research and Development

We create the future with products.

CTC Unit, TEC Unit

Toyo Aluminium established the world's first general research laboratory for aluminium foil at the Yao Works in 1964 and went on to establish a research section for aluminium paste in 1967. Ever since that time, the research and development division has continued to perform fundamental and applied research as the core department in Toyo Aluminium.

There is also a wide range of other research and development activities performed here. With the existing core technologies and products as a foundation, these activities include innovative ideas and creative techniques to develop the next core technologies and also research with a medium and long-term perspective in fields predicted to become big markets. These positive research and development activities are supporting the company's position as a top manufacturer of aluminium foils, powders and pastes.



Intellectual Property

We protect our unique products.

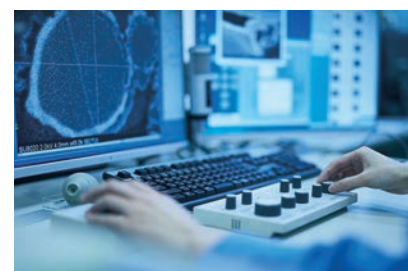
The Toyo Aluminium Group has developed many original products and technologies over the years and that superiority has been protected and utilized as intellectual property. We perform investigations of the prior art, the monitoring of patents published and the handling of technological and intellectual property contracts and we also work to educate employees on intellectual property.



Technology Control

We nurture unique products.

The strategy for the creation and nurturing of new technologies and new products is essential. It is also necessary to manage the progress of each research projects ongoing and to determine whether or not the commercialization of those products will be acceptable. After first investigating new research themes that could be pursued over the medium and long term, it is important to select and focus on whose themes are promising with respect to the realization of the product commercialization. When there is good matching to the market needs, those technologies and products will then go on to develop and grow.



We are developing next generation technologies for 10 or 20 years into the future.

From a foundation of conventional uses and fields, our aluminium technology is showing an expansion into new business areas. The research and development division is continuing research into aluminium that will make the future shine brilliantly, including with the development of new functionality materials for solar cells, which lead to achieve ever higher performance. Research is also continuing on the development of new electrodes for lithium-ion batteries and next generation capacitors, the development of high functionality materials with unique aluminium alloys, and the development of aluminium powders and pastes for new designs and new applications.

Topics

Making Svam Toyal Packaging Industries Pvt. Ltd. a Subsidiary

The Company will hold a 51% stake in Svam Toyal Packaging Industries Pvt. Ltd., an Indian converting company.

In July 2018, the Company acquired a 33.4% stake in Svam Packaging Industries Pvt. Ltd. (Svam Toyal Packaging Industries Pvt. Ltd.'s predecessor), and we have been collaborating in the Indian market. By acquiring an additional 17.6% stake in Svam Toyal Packaging Industries Pvt. Ltd., increasing our stake to 51%, the Company aims to (1) increase earnings in the converted foil products business regarding growth market business, (2) achieve globalization of the converted foil products business, (3) utilize Svam Toyal Packaging Industries Pvt. Ltd., as a gateway to expansion of the foil business, and (4) make it a subsidiary to increase the corporate value of the Toyal Group.



First in the Aluminium Manufacturing Industry to Obtain Resilience Certification

Strengthening the Business Continuity System

The Company's Yao Works and Shinjo Works have become the first aluminium manufacturers to receive certification as a contributor to national resilience (Resilience Certification). The Toyal Group is building an effective business continuity plan (BCP). Going forward, we will continue to strengthen our business continuity structure by promoting the acquisition of resilience certification at each business site. We will also contribute to creating a solid future resilient to disasters through product development and social contribution activities.

*Certification as a contributor to national resilience (Resilience Certification)
Resilience Certification is a system in which the Association for Resilience Japan certifies companies that are actively engaged in business continuity activities based on the "Guidelines for the Certification of Organizations Contributing to National Resilience" established by the National Resilience Promotion Office of the Cabinet Secretariat.



Yao Works



Shinjo Works

For the environment and a brighter future

Fields of Business

Based on our commitment to environmental protection we hope to expand the future of aluminium to provide solutions for customers facing challenges across a wide range of business fields.



Foil Business

We aid our customers' technological advancement by offering high-functioning and high-performance materials.

We meet directly with customers to investigate the problems they have and then develop and offer original products using our unique technologies and know-how. We also offer solutions for raw material and energy consumption reductions by using our lightweight but high-performance aluminium foil, and solutions using high-functioning and high-performance materials for future products, including products which are more environmentally friendly, such as high-performance compact capacitors and lithium-ion batteries.



Powder & Paste Business

With aluminium powder and its applied products, we respond to the needs of an environmentally friendly society by using composites and technology that make possible what was previously impossible for aluminium.

We aim at providing sustainable solutions to our customers by the development of unique added value functional or aesthetic materials for automotive, electronics, or aerospace markets, focusing on environmentally friendly technologies to reduce our product carbon foot print.



An aluminium products company, with a global footprint and a rich history of product development and innovation continues to seek new markets for its products.

Aluminium is the most abundant metallic element in the earth's crust. Since its discovery in the mid-19th century aluminium has earned the reputation for its cost effectiveness, lightweight versatility of use and recyclability. Aluminium has the environmentally friendly characteristics of being lightweight, re-usable and returning to the soil. Toyo Aluminium has taken these characteristics even further with its composite technologies, applied technologies and other new techniques. Aluminium has the potential to achieve both environmental responsibility and progress in various fields around the world, and it is possible that it will realize technologies that have so far been impossible.



Household & Packaging Business

We will conduct product design with consideration for the environment and contribute to the realization of a sustainable society.

We respond to the diverse needs of consumers by supplying products for household use that make our daily lives more convenient, such as Sun Foil and other aluminium foils, cooking range panels and bento box cups. We also respond to those needs by supplying products for commercial use such as aluminium foil containers and products such as paper containers that are made by processing environmentally friendly materials.



New Business

We supply products and services that solve the difficult issues of society.

In our development each day, we use the technology we have built up over many years for aluminium foils, powders and pastes, and also go beyond that previous framework to create the business that will support the Toyal Group in the future. This includes products such as paint with excellent corrosion resistance, casts made using thermoplastic resin, special films that react with water to generate molecular hydrogen, and solar cell panels that are lightweight and strong.



Foil Business



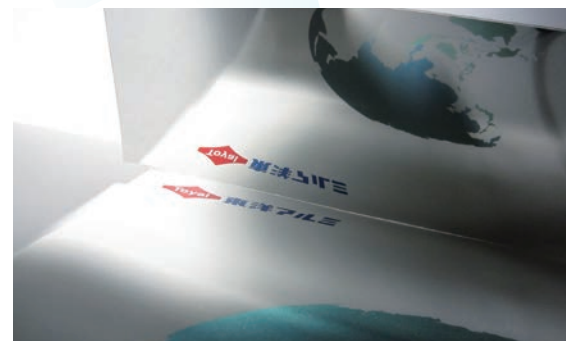
The new functionality aluminium spreads ever wider

The range of uses increases with new application techniques and composite technologies.

= Food and daily essentials
 = Medicines and chemical products
 = Industrial and construction materials
 = Electronic equipment
 = Medical and health

"Roll-to-Roll" to Produce Smooth and Lustrous Aluminium Foil

LUXAL®



> Fields of application



We have succeeded in roll-to-roll production of aluminium foil with excellent smoothness and luster. Launched under the brand name, LUXAL®, this foil product is used as the base of semiconductors and optical films for its surface smoothness and as a reflective material for medical devices and electronic equipment for its high luster. More recently, we have come up with LUXAL® UV which has higher ultraviolet reflectance to meet the growing needs in recent times for disinfection and other applications.

A new material which is hygienic and has a wide range of uses

TOYAL LOTUS®



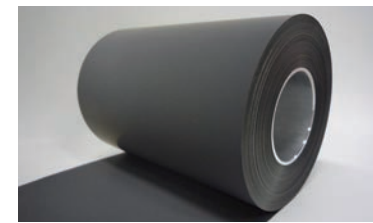
> Fields of application



Do you find that yogurt sticks to the back of the lid when you open yogurt pots? To solve problems such as children licking it off and therefore having bad manners, or it making the eater's hands dirty, we developed a ground-breaking water-repellant packaging material with a fractale structure, taking hints from the water-repellant quality of lotus leaves. We are now promoting an expansion of its use from foodstuffs to additional applications in pharmaceutical packaging and industrial materials.

Improving the performance of electronic devices

TOYAL-CARBO®



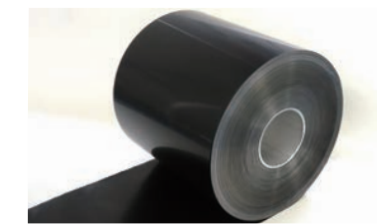
> Fields of application



The aluminium foil with carbon particles without using binders performs stable low resistance as an electrode under any environment. This excellent characteristic has realized the miniaturization and improved performance for a polymer capacitor. There are also high expectations that the new product will be applied for lithium-ion batteries.

Realizing ultra-high capacitance and high reliability capacitors

TOYAL-TITAN®



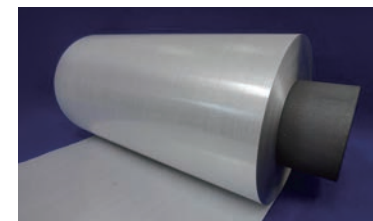
> Fields of application



This is a composite material developed by applying the technology for TOYAL-CARBO®, but with nano-particles of titanium oxide fixed instead of the carbon particles. The product shows ultra-high capacitance and high water resistance and can be used as a cathode to contribute to higher capacity and higher reliability on polymer capacitors and aluminium electrolytic capacitors.

Contributing to the realization of new energy devices

TOYAL PASS®



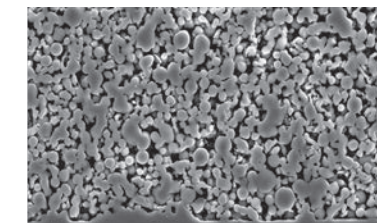
> Fields of application



This is a functional material of aluminium foil with high population density of holes of 1 micron or less in diameter. It is employed as a collector of the positive electrode for a lithium-ion capacitor. The new interesting energy device is widely applied for automotive and back-up power supplies.

Compound electrode using aluminium powder and foil

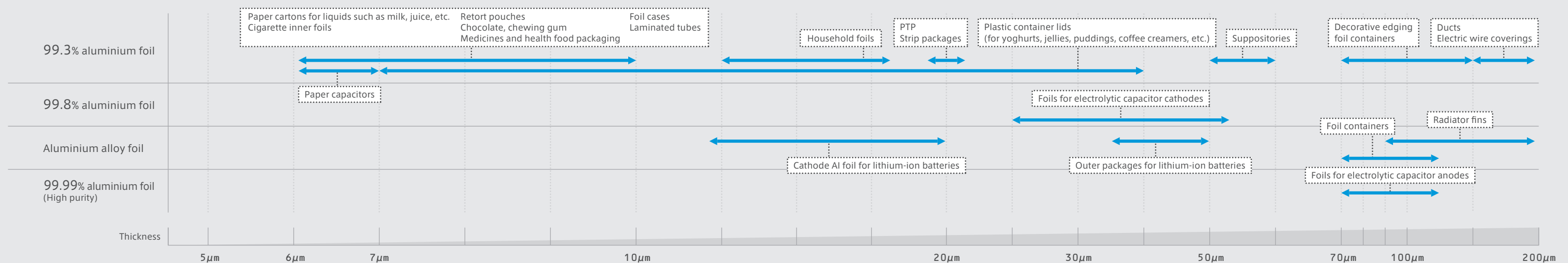
Powder laminated foil



> Fields of application



A compound electrode is developed by sintering aluminium powder and aluminium foil, performing a larger surface area than the current etched foil. The population density of the aluminium powder is to control the porosity depended on the application. Furthermore, the binding strength between the powder and the foil is tough enough in various fields. By selecting the coating method, it is also possible to set profiles that have stripes or some other design.



Long-term preservation of quality TOYAL DRY™



> Fields of application



When using this packaging, the moisture inside the package is absorbed by the hygroscopic film and the aluminium foil acts as a barrier to the moisture outside the package, to prevent it from entering. The water that has been absorbed is not released. It is also possible to prevent excessive drying of the contents. It is ideal for use as a packaging material when it is necessary to prevent quality deterioration due to moisture and to maintain quality over a long period of time.

A ground-breaking covering that prevents trouble Child Proof™



> Fields of application



This is the child-resistant, senior-friendly Blister packaging that uses a protection film layer. It is possible to control the peel strength freely by devising the peeling pattern. Varieties available include the pre-perforated type, on which the package is separated along the slit lines and then the grip tab appears, and the pull-tab type, which functions to prevent tampering and tearing during transportation and displaying for sale.

Foil materials which increase design possibilities READ-MAX®



> Fields of application



This is a breakthrough in PTP (Press Through Package) aluminium foil because the bar-code can be read without any white-coloring, which was previously essential. This means that there is no need to greatly change the product's previous design images, and it is also possible to differentiate using coloring.

Circuit security measures and miniaturization Etching circuit foil



> Fields of application



We have developed antenna circuits for high-security applications by using a high adhesiveness to the card substrate which makes it difficult to remove the antenna and chip without damaging them. We also have circuits that contribute to forgery prevention and circuits that make it possible to mount compact chips. This technology is ideal for cards that require high levels of security, for example, e-passports and credit cards.

A superior response to needs for high moisture-proofing in PTP AL-PRESS®

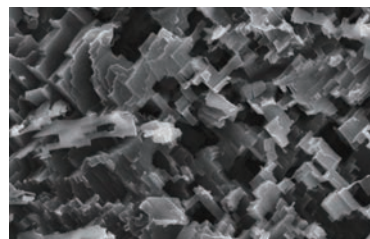


> Fields of application



These are perfect blister packs with both the top and bottom made of aluminium foils, which respond to the need for high moisture-proofing PTP. As an aluminium packaging material it has excellent formability, stability and sealing properties, and has shown outstanding results.

Aluminium foil with surface roughening Ranafoil™-E



> Fields of application



This is an aluminium foil that has been given a rougher surface through our original chemical processing. The anchoring effect obtained by expanding the specific surface area of the aluminium foil surface makes it possible to strengthen the adhesion with resins such as bonding agents, pressure-sensitive adhesives and binders. It can be used in a wide range of sectors where the adhesion to the aluminium foil surface is demanded. This includes for the current collectors for secondary batteries and electric double-layer capacitors, for electronic circuit boards and other electronics parts, and for the bonding and coating processing on industrial materials and construction materials.



Household & Packaging Business



If you look, our products are right next to you

We will be thoroughly customer-oriented and propose new products that create new markets so that we can continue to be a brand that is supported.

Easy to attach like a sticker and keep vents clean

Dust Filter for Ventilation Fan



In houses with a 24-hour ventilation system, the ventilating fans in the bathrooms and dressing rooms are constantly working, and dust accumulates on the ventilation fans as an air passage, which is attached like a sticker, is a product to attach to ventilation fans for preventing dirt. To achieve a clean life, we propose preventive cleaning by using this product before ventilating fans become dirty.

Thorough pursuit of ease of use Sun Foil™ 8 m



Sun Foil™, celebrating the 60th anniversary since its release in 1963, has long been popular for its easy-to-cut, easy-to-use, and hygienic. We will continue to improve our products and propose ways to use Sun Foil™ to enrich people's lives, and work to expand demand and become an indispensable brand for daily life.

Environmentally friendly paper containers which can be used for oven cooking Heat resistant paper cups



These can be used over a wide range of temperatures, for both frozen and heated up food (in conventional or microwave ovens). Furthermore, the raw material used is paper, in consideration for the environment, and the characteristics of the material are utilized with colorful printing that makes it possible to create variations in products. We are also expanding our efforts for the Forest Certification Scheme each year and are actively working on the realization of a sustainable society.

Environmentally friendly pressed molding paper containers with full curled edges, which can be used for oven cooking EC-Ware™



These can be used over a wide range of temperatures, for both frozen and heated up food (in conventional or microwave ovens). In addition, the curling edge enhances the strength and the suitability for automatic container supplying equipment. Paper is used as the raw material in consideration for the environment. We are also expanding our efforts for the Forest Certification Scheme and forest thinning mark certification each year and actively working on the realization of a sustainable society.

Aluminium foil that prevents food sticking KUTTSUKANAI FOIL



The noticeability of the embossing was greatly increased from the conventional processing, so there is no longer mistaken use of the front and rear surfaces. It is also a product produced with quality as the priority, with printing and silicone processing conducted at the Chigasaki Works.

The optimal size for creating partitions in bento boxes NONBIRI PANDA - 8 designs, Size 6, 24 pieces



These are bento box partitions with a cute design of a relaxed panda. There are eight different designs in one package to increase the enjoyment of preparing bento boxes. The relaxed messages are very soothing.

Powder & Paste Business



Become more environmentally friendly and contribute to society

We support a wide range of solutions with extraordinary aluminium technologies.



= Food and daily essentials



= Medicines and chemical products



= Industrial and construction materials



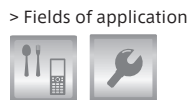
= Electronic equipment



= Medical and health

Coating

Gentle on the environment
ALPASTE® for water-based coating



Water-based paints are friendlier to the environment. We have developed various surface treatment techniques to control gas generation in the water-based paints. The EMERAL® series is aluminium pastes with coated surface of aluminium flakes by dense and transparent layer of silica which can suppress gassing and keep the brightness of aluminium flake itself.

High chemical resistance
Resin coated ALPASTE®



Each aluminium flake is coated with cross-linked acrylic resin. The FZ Series achieves high chemical resistance, good adhesion, and dielectric property against high voltages. The Barrier Plas® series is the type of products which have additional function to FZ Series, such as preventing losing brightness and hiding power by dense coating of resin. Top coating process can be omitted by using this product which helps cost reduction.

| Leafing | Solvent based | Anti-corrosion paints | | | | | |
|---------------|---------------|---------------------------------|------------|------|----------|--------|--------------|
| | | Marine paints | | | | | |
| | | Silver paints | | | | | |
| | | Printing inks | | | | | |
| | | Pigments for injection molding | | | | | |
| Non-Leafing | Solvent based | Anti-corrosion paints | | | | | |
| | | Marine paints | | | | | |
| | | General-purpose metallic paints | | | | | |
| | | Metal precoatings | | | | | |
| | | Printing inks | | | | | |
| | | Pigments for injection molding | | | | | |
| | Dry-flake | Pigments for injection molding | | | | | |
| Powder paints | | | | | | | |
| | | Grade | Extra-fine | Fine | Standard | Coarse | Extra-coarse |

Conventional Printing Ink

Aluminium effect pigments for printing
TD Series

> Fields of application



TD Series is the aluminium paste which contains environmentally friendly and suitable for printing property solvent such as propyl acetate instead of mineral spirit. It prevents residual odor of printed matters and is suitable for luxury food packages.

Digital Printing Ink

Metallic pigments suitable for digital printing
MIJ-406PMA and others

> Fields of application



Metallic pigments suitable for digital printing, such as inkjets and toners. They can express special tones and effects like silver and gold which were not possible to get by 4 CMYK colors. We can meet requirements for "on-demand" digital printing with our reliable technology.

Special Effect

Chromatic metallics
Colored Aluminium Effect Pigment FRIEND COLOR®

> Fields of application



FRIEND COLOR® achieves colored metallics by putting colored pigment on the surface of aluminium flakes by resin coated technology. It can get saturated metallic effect by itself instead of multi-layer coating. It helps environmental friendliness and cost reduction. For waterborne application, we can provide the waterborne type with silica encapsulation.

Interference aluminium pigments
CHROMASHINE®

> Fields of application



A new metallic pigment that develops structural colors by utilizing the interference of light by multiple layers on the surface of aluminium flakes. Several unique colors can be achieved by controlling the thickness of the surface layer. Highly chromatic metallic colors and color travel by angle can be realized in painting, printing, and resin compound applications.

Vacuum metallized aluminium pigments
TOYALSHINE®, EMERALSHINE®

> Fields of application



Aluminium slurry made from extremely thin aluminium flakes by vacuum metallization. Mirror like effect can be achieved in painting and printing applications. The appearance can be adjusted depending on the thickness of the aluminium flakes. Waterborne type is also available.

Silver-coated glass flakes
METASHINE®

> Fields of application



Silica encapsulated silver-coated glass-flake METASHINE® by dense and uniform silica treatment. It is suitable for waterborne paints with characteristic strong metallic effect, excellent adhesion and good weatherability resistance as a coating film.

**METASHINE® is a registered trademark of Nippon Sheet Glass Co., Ltd.

Pigments for Cosmetic Applications

Metallic pigments suitable for cosmetic applications
Cosmicolor®

> Fields of application



Attractive metallic pigments for cosmetic application for point make-up and base make-up such as can be used for nail polish, eyeshadow, foundation. This series contains aluminium flakes with strong hiding power as core material. Grades that can express various effect such as silver metallic, blue, green, orange, and gold, pink are available.

Pigments for Powder Coating

For powder coating
PC Series

> Fields of application



Metallic pigments for solvent-free environmentally friendly powder coating. This product is powder form of resin coated aluminium paste. Excellent dielectric property against high voltages, chemical resistance by thick acrylic coating film on aluminium flakes. Various particle sizes are available depend on the required color effect.

Pigments for Coloring Plastic

Metallic effect plastic
METAX®

> Fields of application

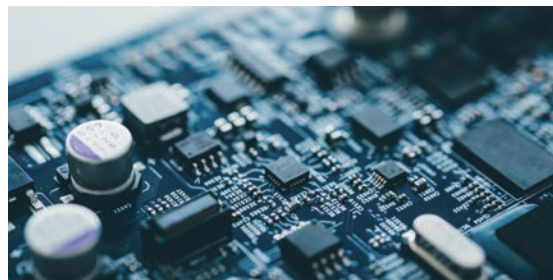


Metallic effect can be achieved by resin molding. METAX® was developed for resin molding applications and has succeeded in reducing weld lines. This material is environmentally friendly and suitable for cost reduction requirement. In addition, it is possible to produce a unique metallic texture by adjusting the surface roughness of the mold. METAX® is a pelletized product mixed with resin.

Conductive Materials

Functional fillers suitable for conductive inks and adhesives
TOYAL TecFiller® TFM Series

> Fields of application



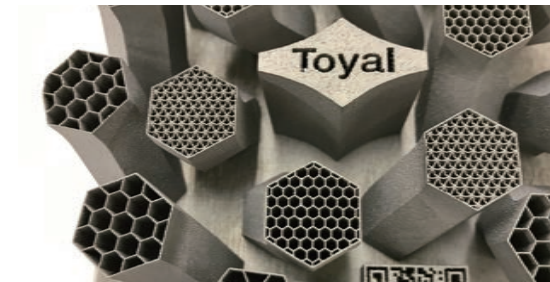
Metal plating layer evenly deposited onto inorganic or organic materials.

Conductive materials with silver plating applied to various core materials. Unlike silver itself, a variety of inexpensive materials are used as core materials to reduce the amount of silver used and reduce costs. In particular, TFM-S02P and S05P, which use silica powder as a core material, have a significantly smaller specific gravity, enable a more than 80% cost reduction compared to silver itself.

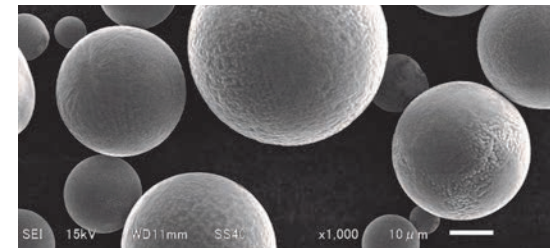
Functional Materials

Aluminium alloy powders for additive manufacturing
SPHERALLOY®

> Fields of application



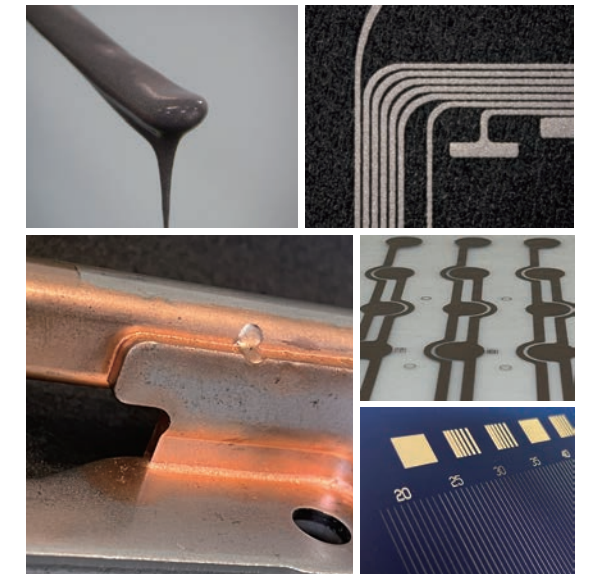
Alloy powders suitable for 3D printing machines.



Additive manufacturing is making remarkable progress. We can supply high-quality aluminium alloy powders with the spherical shapes and the best particle size distributions for each 3D printing machine. In addition to TCFE1Z and Scalmalloy®, we can atomize original and customized alloy powders if requested. * "Scalmalloy" is a registered trademark of APWORKS GmbH in Japan and other countries.

Functional Inks
Toyol Hyper Braze®, ALSOLAR®

> Fields of application



Our technology of mixing metal powders with organic materials to produce ink enables us to offer products for a wide variety of applications. Toyol Hyper Braze®, brazing materials has good brazeability, and functional inks with excellent screen printability are used in circuits and electrode materials and are highly evaluated by our customers.

High Thermal Conductivity Materials

Aluminium fillers for heat spreader
TOYAL TecFiller® TFH Series

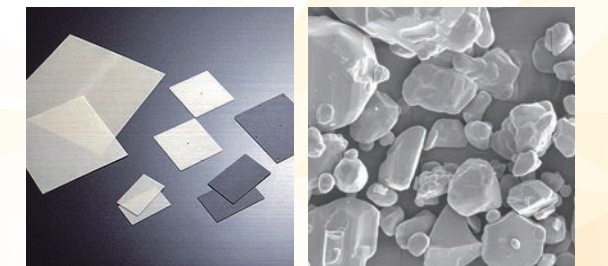
> Fields of application



Aluminium has lightness and high thermal conductivity at least 200W/mK. TFH Series is supplied as Aluminium fillers, which have spherical shapes and controlled particle size distributions so as to apply for thermal interface materials (heat dissipation sheets, heat dissipation greases, etc.) in electronic components.

Aluminium nitride powder with high thermal conductivity and insulation properties
TOYALNITE®

> Fields of application



Aluminium nitride is an insulating ceramic material with approximately 10 times bigger the thermal conductivity of than alumina. Our aluminium nitride powder for sintering application has high thermal conductivity and excellent dimensional accuracy and is highly evaluated as a substrate material. TFZ-S series for filler application has the wide range of particle size grades from 1-100µm and highly filling property.

New Business



Efforts to create new business

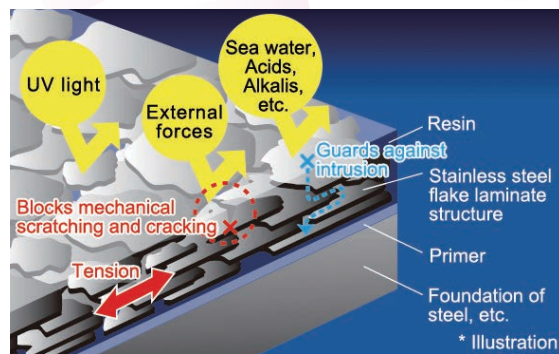
We will create completely new products that go beyond the standard frameworks for an aluminium manufacturer.

= Food and daily essentials
 = Medicines and chemical products
 = Industrial and construction materials
 = Electronic equipment
 = Medical and health

New A paint containing stainless steel flakes for high-durability coating that does not require maintenance for long periods

Stenshel®

> Fields of application



“Stenshel® (stainless steel flake-containing paint)” is a tough hybrid paint that has excellent corrosion resistance and durability. We use original technology to process high quality stainless steel (SUS316L) into a thickness of 0.3 μm and then blend it with a coating resin. The formation of a coated film that has a layered structure of stainless steel flakes and resin is a barrier to the intrusion of corrosive factors and continues to protect the base material for long periods.



“Stenshel®” suppresses the occurrence of rusting due to sea salt particles and chemical substances over long periods. Also, the resin affinity and adherence in the layered coated film of “Stenshel®” makes it highly resistant to wear and chipping. It can be used on a wide range of applications both indoors and outdoors, including structures, industrial products, metals and many more.

New 99% disinfection in 2 minutes
POKESTER® 2.0

> Fields of application



POKESTER® is a pocketable disinfecting case which is perfect for a new pattern of behavior that is becoming the norm these days in the face of the prevalence of a myriad of bacteria and viruses. Affixed inside the sterilization case are multiple deep ultraviolet LEDs (wavelength: 260-280 nm) with proven disinfecting properties (including virus inactivation), and our proprietary aluminium foil LUXAL®-UV, which offers superior ultraviolet reflectance. The result is even disinfection in a short time. Proudly made in Japan, POKESTER® adds extra comfort to everyday life allowing one to “carry around a disinfecting environment.”

Quick and Easy IoT Solution

Roadbed water sensor *Hakari-chan*

> Fields of application



After the base course has been constructed on road pavement repairing, the moisture content of the base course need to be measured. With the conventional method, it takes around 20 minutes to take a measurement. By inserting two electrodes into the roadbed and measuring its electrical resistance, the roadbed water sensor *Hakari-chan* can measure water content in about one minute. This brand-new offering from Toyo Aluminium should be useful at construction sites where measuring the water content is necessary.

Just put it in the microwave! An easy and convenient splint!

THERMAL GIPS® Wrist

> Fields of application



THERMAL GIPS® Wrist is a new generation cast (general medical devices) to immobilize the affected part, such as a wrist fracture or sprain. The immobilizing material, called the inner splint, is a special thermoplastic that softens only by heating in a microwave oven at 500 W for 30 seconds and hardens over time. The time is shortened without using conventional hot or cold water, and simple and convenient treatment can be performed. Scan here for how to use!

New Lightweight solar module for roofs with load bearing issues where installation was previously impossible

> Fields of application

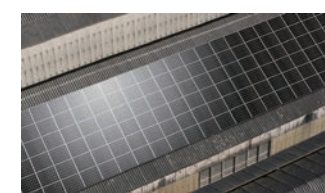


Hane® Module

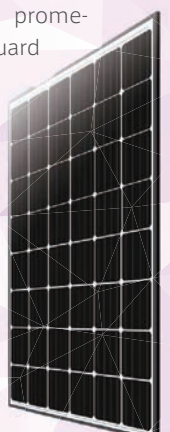


The “Hane® Module” solar module have equivalent performance to conventional solar modules, but only half the weight of conventional ones. This makes installation possible on factory and warehouse roofs where installation was previously difficult due to load bearing restrictions. Our original technology also gives the module high strength and fire resistance. The Hane® Module also performs excellently in carports for charging EVs. Other applications are bicycle parking areas, promenades, bus stops, taxi ranks, in front of security guard offices, park gazebos, coin-operated car parking, automatic vending machines and a wide range of other uses.

Image of installation



● Roof of factory/warehouse/building, station building, park gazebo, etc.



Aluminium Manufacturing Platforms which fulfill their responsibilities

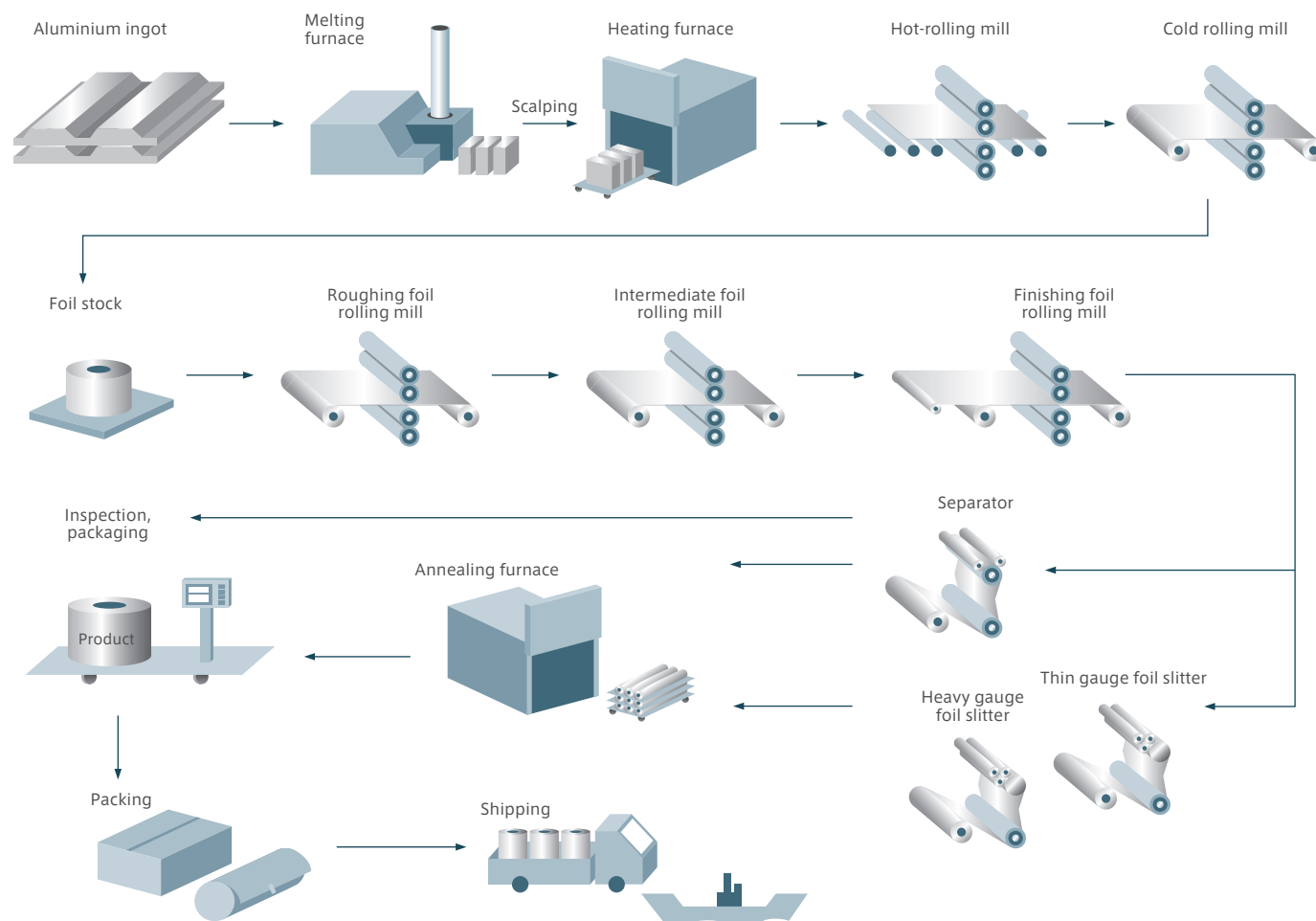
The works are very serious about fulfilling their responsibilities to society, in addition, of course, to being serious about producing superior products.

We respond to various foil production and processing requirements.

The foil business production system

Foil Products

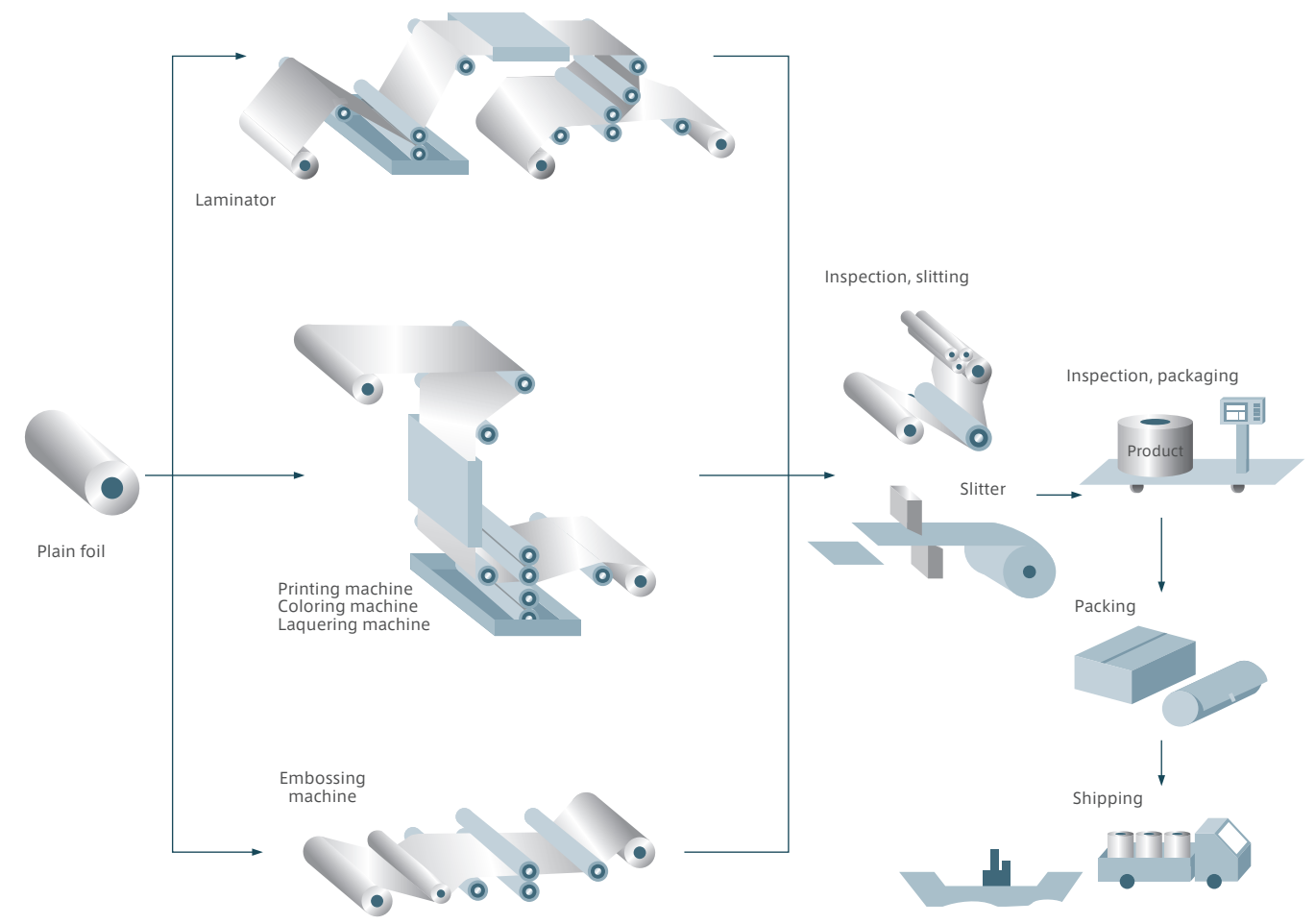
We respond to customers' requirements with the world's most advanced techniques and an integrated manufacturing system which starts from the acceptance of orders.



The foil business production system

Converted Foil Products

The whole works is maintained at clean room standards for the production of packaging for pharmaceuticals and foodstuffs.



Yao Works



Kanbara Works



Chiba Works



Gumma Works



Chigasaki Works



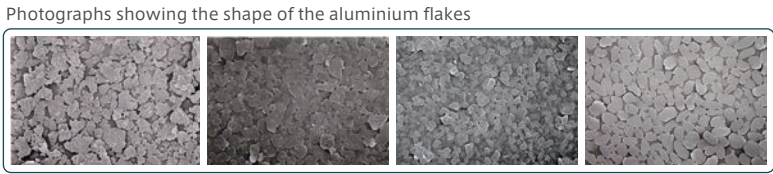
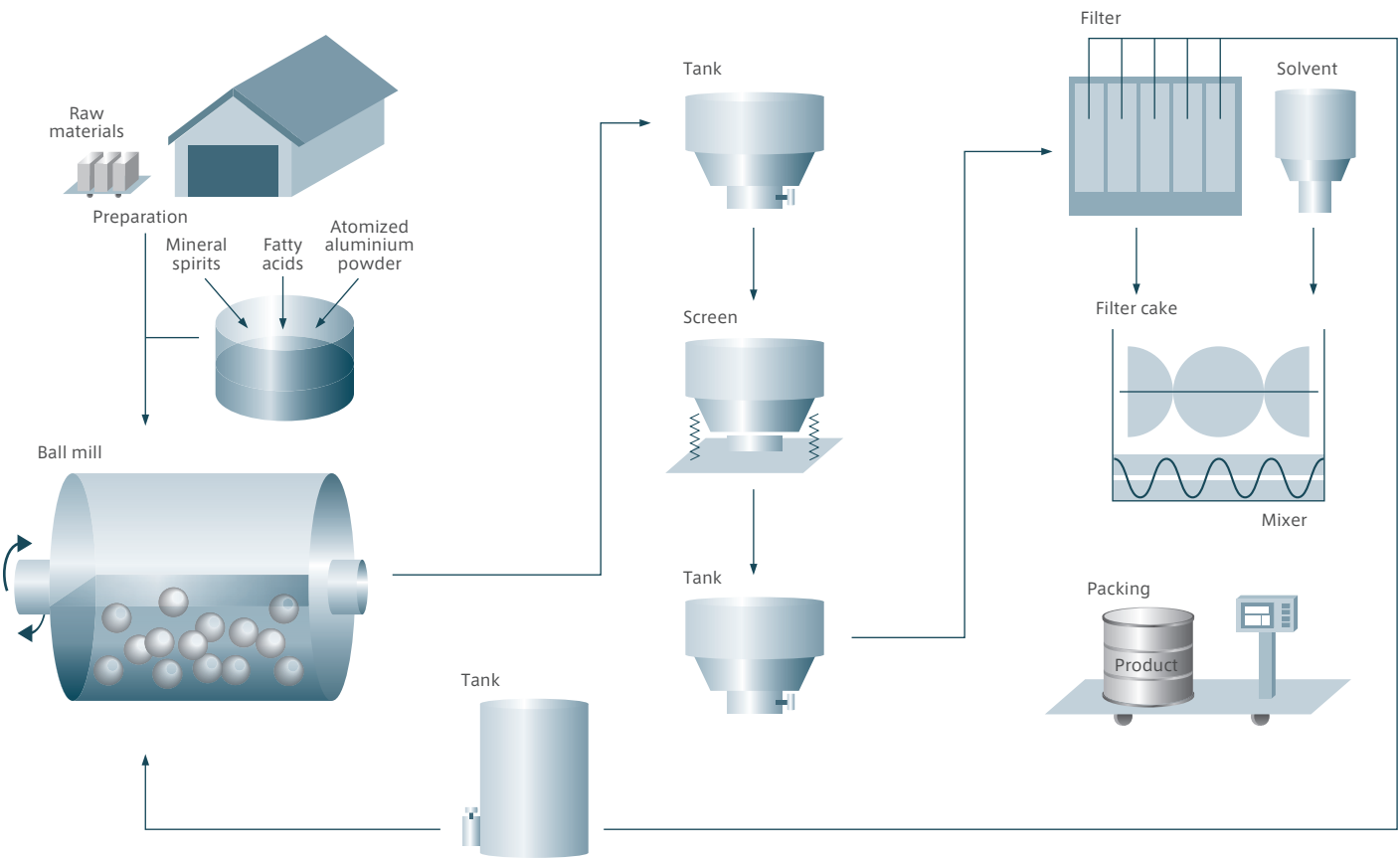
Chigasaki Works (Yabata)



Responding to any requirements for powder and paste products with our high-level processing technologies.

The paste business production system

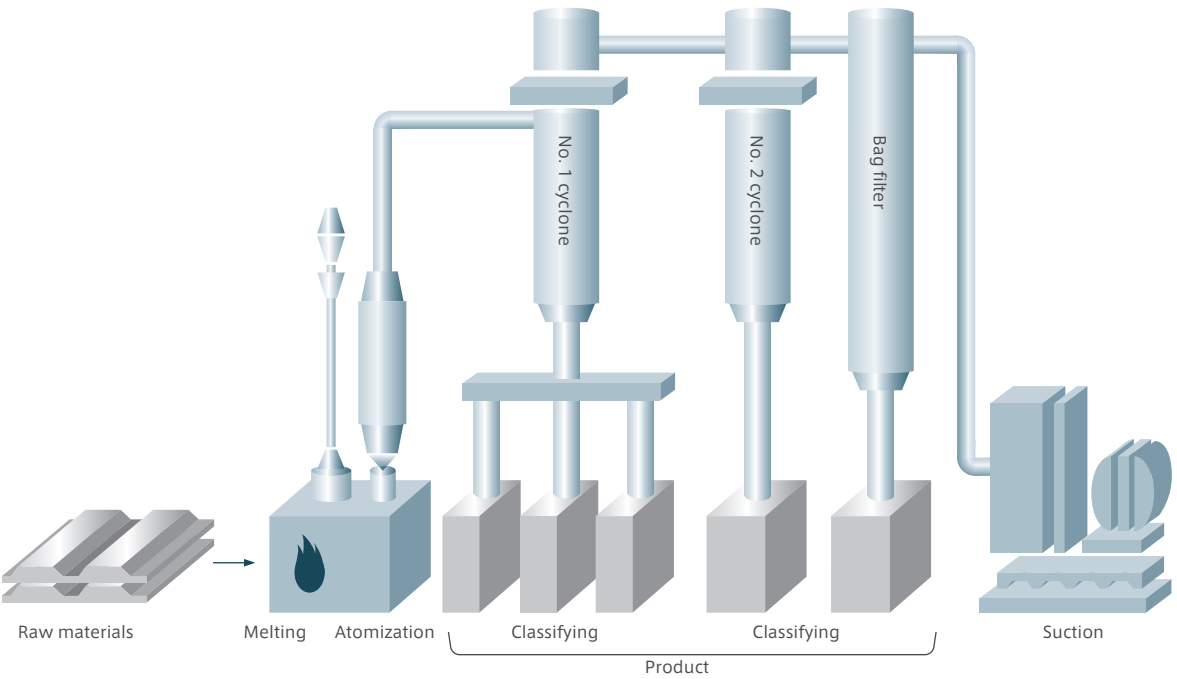
Pastes | A specialized works for aluminium pastes which is one of the biggest in the world and has the highest quality.



The Powder business production system

Powders | A specialist works equipped with the latest production facilities to respond to various requirements for powders.

Gas atomization process

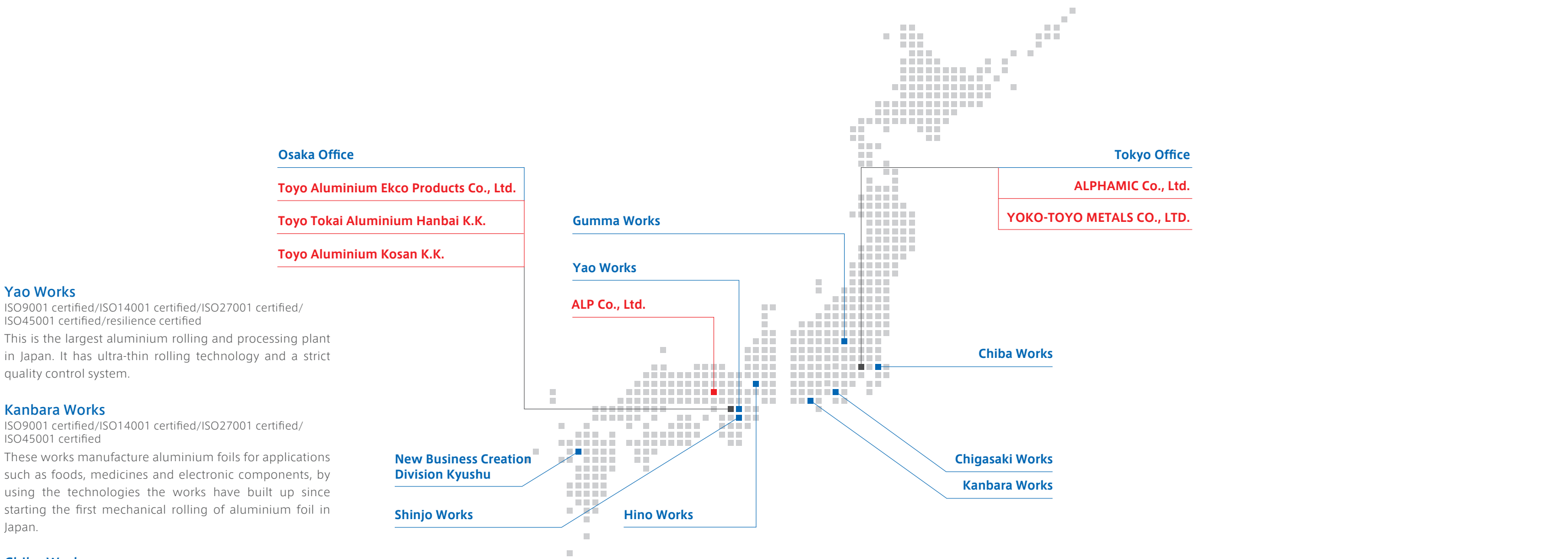


The Toyo Aluminium Group

- making lives richer

With a consistent philosophy, the whole Group is working together to enhance the appeal of aluminium.

The use of our aluminium products is spreading in familiar products in our society. The role of spreading them is undertaken by each production base and the Group companies. Based on Toyo Aluminium’s consistent philosophy, the companies exploit their specialties to the full, to deliver customer-oriented original products and specialist products throughout Japan.



Toyo Aluminium Ekco Products Co., Ltd.
ISO9001 certified/ISO14001 certified/ISO27001 certified

This company manufactures and sells familiar household products such as aluminium foil, aluminium foil containers for foods and paper packaging products.

Toyo Tokai Aluminium Hanbai K.K.
ISO9001 certified/ISO14001 certified/ISO27001 certified

This is a trading company that sells commodities ranging from Toyol Group products to foods around the world.

ALP Co., Ltd.

This company has aluminium foil forming and processing technology that is top-class in the industry and produces clean kitchen products and commercial-use paper case related products.

ALPHAMIC Co., Ltd.
ISO9001 certified

This company supplies high quality aluminium foil and related products for household and commercial use, with unique products that brighten up kitchens.

YOKO-TOYO METALS CO., LTD.

This company conducts research and development for new products that utilize the strengths of both our “powder laminated foil” high-capacity anode foil and the technology of the Guangdong HEC Technology Holding Co., Ltd.

Toyo Aluminium Kosan K.K.

This company has received a top-class quality evaluation in Japan for its cutting of narrow aluminium foil products and also performs equipment maintenance and repair work.

An aluminium network making the world shine

Extending the business globally with a system of four key locations.

We believe that one of our missions is to contribute our world-class aluminium technology and products to industry and societies around the globe. We offer our products, and we are also strategically proceeding with technical tie-ups and sales and production base development.



Toyol Europe S.A.S.U.

ISO9001 certified/ISO14001 certified

This company is a production and sales base for our aluminium pastes and aluminium powders in the European market.



Sam-A Aluminium Co., Ltd.

This company is a production and sales base for various aluminium foils and aluminium pastes in Korea.



Toyol Zhaoqing Co., Ltd.

ISO9001 certified/ISO14001 certified

This company is a manufacturing and sales base for aluminium pastes and materials for solar cells in the Chinese market.

Hunan NingXiang JiWeiXin Metal Powder Co., Ltd.

ISO9001 certified/ISO14001 certified

This company is a manufacturing and sales base for aluminium powders in the Chinese market.

Toyo Aluminium (Shanghai) Management Co., Ltd.

This company promotes the improvement of control systems and strengthening of governance functions for the Toyol Group within China.

Suzhou Toyo Aluminium Ekco Household Products Co., Ltd.

This company manufactures food containers and sells them within China and to Southeast Asia and Japan.

Toyo Aluminium Ekco Trading (Suzhou) Co., Ltd.

This is a sales base for household products such as aluminium foil, cooking sheets and cooking range panels within China.

Toyo Tokai Aluminium Hanbai (Shanghai) Co., Ltd.

This is a trading company that sells a wide range of products as the Chinese subsidiary of Toyo Tokai Aluminium Hanbai K.K.



Toyol America, Inc.

ISO9001 certified

This company is a production and sales base for our aluminium pastes and aluminium powders in the North American market.



TOYAL MMP INDIA PVT. LTD.

This company is a manufacturing and sales base for aluminium pastes in India.

Svam Toyol Packaging Industries Pvt. Ltd.

ISO9001 certified/ISO14001 certified/ISO45001 certified

This company is a manufacturing and sales base that takes the top market share for pharmaceutical product packaging materials in India.



TOYAL (THAILAND) Co., Ltd.

This is a trading company that promotes the sales expansion strategy of the Toyol Group in the Southeast Asia region.



Toyo Tokai Aluminium Hanbai K.K., Singapore Branch

This company is an overseas base of Toyo Tokai Aluminium Hanbai K.K. and develops business mainly in Southeast Asia.

History

The 1930s

April, 1931

Aluminium Sumitomo Limited was incorporated for the purpose of fabrication and sales of aluminium sheet and foil under the technical and capital tie-ups between Aluminium Limited (currently Alcan Aluminium Limited), Canada and Sumitomo.



First President,
Shunnosuke Furuta



1954 Yao plant

The 1950s

April, 1950

By the dissolution of Zaibatsus, the Company was renamed to Toyo Aluminium K.K. (OLD TOYO ALUMINIUM)

January, 1955

In commemoration of its silver jubilee, the Company established The Light Metal Educational Foundation, Inc., the leading science-promoting foundation sponsored by private enterprise in Japan. The Foundation has been contributing to promote research and technology on light metals by donating educational research fund, research subsidy as well as offering scholarships to able students.

July, 1957

The Company started production of aluminium paste at the newly constructed Tatsuta Plant in Nara Pref.



New company badge (left)
and new trademark (right)
accompanying the company name change

The 1960s

April, 1966

For the purpose of sales reinforcement, the Company established Piyasu Shoji K.K. (Toyo Tokai Aluminium Hanbai K.K.) as sales agent.

October, 1968

For the purpose of producing aluminium powder, Shinjo Plant (currently Shinjo Works) was constructed in Nara Pref.

September, 1969

The Company established Kanan Foil Processing K.K.

November, 1969

The Company established Toyo Ekco Co., Ltd. (currently Toyo Aluminium Ekco Products Co., Ltd.) for the purpose of production and sale of foil containers.



Shinjo Plant



Executives at the time of the
establishment of Toyo Ekco Co., Ltd.

The 1970s

January, 1970

For the purpose of aluminium foil rolling and converting, Sam-A Aluminium Co., Ltd. was established in Korea under a joint venture agreement with Samjin Aluminium Co., Ltd.

May, 1976

Toyo Aluminium Foil Products K.K. was established for the purpose of sale and processing of household goods.

April, 1977

All the equipment in Tatsuta Plant, which was closed down, was transferred to Shinjo Works.

October, 1978

Aiming to reinforce the sales activity of converted foil in Tokyo area, Gumma Plant (currently Gumma Works) was constructed.



Gumma Plant under construction



Starting ceremony
for coloring printer
at Gumma Plant

The 1980s

July, 1982

Alcan-Toyo Europe S.A. (currently Toyal Europe S.A.) was established in France under a joint venture agreement with Alcan Aluminium Corporation, as a base of production and sale of aluminium powder and paste business in Europe.

December, 1982

Hino Plant, a newly integrated atomized aluminium powder plant, was constructed in Shiga Pref.

January, 1984

The Company established Toyo Aluminium Kosan K.K.

July, 1987

Alcan Toyo America, Inc. (currently Toyal America Inc.) was established in U.S.A. under a joint venture agreement with Alcan Aluminium Corporation, as a base of production and sale of aluminium powder and paste business in North America.



Alcan-Toyo Europe S.A.



Alcan Toyo America, Inc.



Hino Plant
completion
ceremony

The 1990s

August, 1996

Nippon Light Metal Co., Ltd. acquired the Company's 27,090,000 shares owned by Alcan Aluminium Limited.

May, 1999

The Company established Toyo Aluminium Sales K.K.

October, 1999

Nippon Light Metal Co., Ltd. merged the Company, and the Company was dissolved. Toyo Aluminium Sales K.K. took over a part of business form (old) Toyo Aluminium K.K. and renamed to Toyo Aluminium K.K. (hereinafter called as the Company), the Company commenced operation.

The 2000s

October, 2002

Toyo Aluminium K.K. took over manufacturing division of Aluminium foil, powder and paste from Nippon Light Metal Co., Ltd.

October, 2005

The Company established Toyal Techno-Frontier Corp.

April, 2006

Toyo Ekco Co., Ltd. and Toyo Aluminium Foil Products K.K. merged to form Toyo Aluminium Ekco Products Co., Ltd.



Inaugural meeting of Toyo Aluminium
Ekco Products Co., Ltd.

April, 2007

We have founded Toyal Zhaoqing Co., Ltd., manufacturing and sales company of aluminium paste in Guangdong, China.



Toyal Zhaoqing Co., Ltd.
inaugural ceremony

October, 2007

We have made Tokai Aluminium Foil Co., Ltd. a subsidiary of our company, and have taken over the shares thereof from Nippon Light Metal Co., Ltd.

December, 2007

We have taken over the shares of Millennium Gate Technology Co., Ltd. and made it our subsidiary company in order to manufacture colored metallic paints (prigments).

April, 2008

Toyo Aluminium Shoji K.K. has changed its name to Toyo Tokai Aluminum Hanbai K.K. due to acquiring a part of foil converting sales division of Tokai Aluminum Foil Co., Ltd.

December, 2009

We have made Hunan NingXiang JiWeiXin Metal Powder Co., Ltd., which is a manufacturing and sales company of aluminium powder in Hunan, a subsidiary of our company.

The 2010s

April, 2010

Toyo Aluminium Kosan K.K. merged with and absorbed Kanan Foil Processing K.K.

April, 2011

We have made SHOWA ALUMINUM POWDER K.K. a subsidiary of our company.



80th Anniversary Ceremony

April, 2012

SHOWA ALUMINUM POWDER K.K. was merged with us and have become Gose Works (currently Shinjo Works (Gose)).
Millennium Gate Technology Co., Ltd. was merged with us and have become Hirano Plant (currently Shinjo Works (Hirano)).

October, 2012

We have made SUN ALUMINIUM INDUSTRIES, LTD. a subsidiary of our company, and its name has been changed to Toyo Aluminium Chiba K.K.

April, 2016

- Toyo Aluminium Kosan K.K., absorbed Toyo Aluminium Maintenance Limited Company.
- We absorbed Tokai Aluminium Foil Co., Ltd., Toyo Aluminium Chiba K.K. and Toyal Techno-Frontier Corp. and transferred the Household Business of Toyo Aluminium Chiba K.K. to Toyo Aluminium Ekco Products Co., Ltd.

May, 2016

We have founded TOYAL MMP INDIA PRIVATE LIMITED manufacturing and sales company of aluminium paste in the Republic of India.



TOYAL MMP INDIA PVT. LTD.

November, 2016

We have founded Kyushu Laboratory (currently New Business Creation Division Kyushu) to create new business based on functional compounds.

March, 2017

We have established a sales company TOYAL (THAILAND) COMPANY LIMITED in the Kingdom of Thailand.

October, 2018

- We acquired shares of Svam Packaging Industries Pvt. Ltd., changed the company name to Svam Toyal Packaging Industries Pvt. Ltd., and made it an equity-method affiliate with the aim of expanding our converted foil products business in India.



Svam Packaging Industries Pvt. Ltd.
share acquisition signing ceremony

- We established Yoko-Toyo Metals Co., Ltd. as a joint venture with Guangdong HEC Technology Holding Co., Ltd. with the aim of researching and developing foil for a new aluminium electrolytic capacitor.
- We established Toyo Aluminium (Shanghai) Management Co., Ltd. with the aim of optimizing the business management structure, thoroughly implementing compliance management and strengthening risk management in China.

The 2020s

July, 2021

We acquired additional shares of Svam Toyal Packaging Industries Pvt. Ltd. and made it a subsidiary.

Outline

Establishment

12 May 1999 (Former Toyo Aluminium was established in 1931)

Paid-In Capital

8,000,000,000 yen

Number of Employees (as of March 2022)

2,586 (Consolidated)
1,496 (Non-consolidated)

Head Office (Osaka)

6-8, Kyutaramachi 3-chome, Chuo-ku, Osaka 541-0056, Japan

Shareholder

Nippon Light Metal Holdings Co., Ltd. 100%

Directors, Statutory Auditors, Officers & Senior Specialists
(as of June 2022)

| | |
|--|---------------------|
| President and Representative Director | Kaoru Kusumoto |
| Director, Senior Managing Executive Officer | Katsumoto Tanaka |
| Director, Senior Adviser | Masao Imasu |
| Director (part-time) | Yasunori Okamoto |
| Director (external) | Akira Ohira |
| Director (external) | Aya Shirai |
| Director (external) | Mari Christine |
| Director (external) | Yusuke Kawamura |
| Audit and Supervisory Board Member (full-time) | Masahiro Yoshida |
| Audit and Supervisory Board Member (full-time) | Toshihiko Nakano |
| Audit and Supervisory Board Member (part-time) | Hiroyuki Matsudaira |
| Audit and Supervisory Board Member (external) | Keizo Kosaka |
| Audit and Supervisory Board Member (external) | Haruo Kitamura |
| Audit and Supervisory Board Member (external) | Akira Kitamura |
| Managing Executive Officer | Masaki Yamaguchi |
| Managing Executive Officer | Masashi Yamamoto |
| Executive Officer | Akira Tanaka |
| Executive Officer | Hideo Ishiguro |
| Executive Officer | Masateru Watanabe |
| Executive Officer | Hiroshi Matsuoka |
| Executive Officer | Stephane Rochard |
| Executive Officer | Toshiya Nagata |
| Executive Officer | Tsuyoshi Ariyoshi |
| Executive Officer | Masayoshi Tsujino |
| Executive Officer | Ko Kinoshita |
| Executive Officer | Keita Nagano |
| Senior Specialist | Marwan Dhamrin |

Activities

Manufacture and sale of aluminium foil, sheet, paste (aluminium paint pigment), powder, alloy powder, high purity aluminium nitride (ALN) powder, solar cell related products

Term for Settlement of Accounts

31 March

Principal Banks

Sumitomo Mitsui Banking Co. / Sumitomo Mitsui Trust Bank, Limited. / Mizuho Bank, Ltd. / The Bank of Yokohama, Ltd. / MUFG Bank, Ltd.

Offices & Plants

| | |
|---------------------------------------|--|
| Osaka Office | 6-8, Kyutaramachi 3-chome, Chuo-ku, Osaka, 541-0056, Japan Tel: +81-6-6271-3151 |
| Tokyo Office | 6F, Urbannet Uchisaiwaicho Building 1-1-13, Shinbashi, Minato-ku, Tokyo, 105-0004, Japan Tel: +81-3-5501-0777 |
| Yao Works | 8-1, Aioi-cho 4-chome, Yao-shi, Osaka, 581-0082, Japan Tel: +81-72-993-1511 (Main) |
| Kanbara Works | 4984, Kanbara, Shimizu-ku, Shizuoka-shi, 421-3203, Japan Tel: +81-54-385-5101 |
| Chiba Works | 260, Ropposho, Inage-ku, Chiba-shi, Chiba, 263-0004, Japan Tel: +81-43-422-1231 |
| Gumma Works | 3062, Sakaiiyoku, Isesaki-shi, Gumma, 370-0105, Japan Tel: +81-270-76-2251 (Main) |
| Chigasaki Works | 826, Hagisono, Chigasaki-shi, Kanagawa, 253-0071, Japan Tel: +81-467-86-1881 |
| Chigasaki Works (Yabata) | 1071, Yabata, Chigasaki-shi, Kanagawa, 253-0085, Japan Tel: +81-467-86-2971 |
| Shinjo Works | 228-1, Shinmachi, Katsuragi-shi, Nara, 639-2127, Japan Tel: +81-745-69-3091 (Main) |
| Shinjo Works (Gose) | 410, Muro, Gose-shi, Nara, 639-2277, Japan Tel: +81-745-62-5151 (Main) |
| Shinjo Works (Hirano) | 5-24, Kamikita 3-chome, Hirano-ku, Osaka-shi, Osaka, 547-0001, Japan Tel: +81-6-6795-7707 (Main) |
| Hino Works | 341-14, Oaza Otani Aza Higashiyama, Hino-cho, Gamo-gun, Shiga, 529-1608, Japan Tel: +81-748-53-1151 (Main) |
| New Business Creation Division Kyushu | 3-5, Shikashimmachi, Omuta-Shi, Fukuoka, 837-0907, Japan Tel: +81-944-58-7051 |

Group Companies

● Domestic Locations

Toyo Aluminium Ekco Products Co., Ltd.
Toyo Tokai Aluminium Hanbai K.K.
ALPHAMIC Co., Ltd.
ALP Co, Ltd.
YOKO-TOYO METALS CO., LTD.
Toyo Aluminium Kosan K.K.

● Overseas Locations

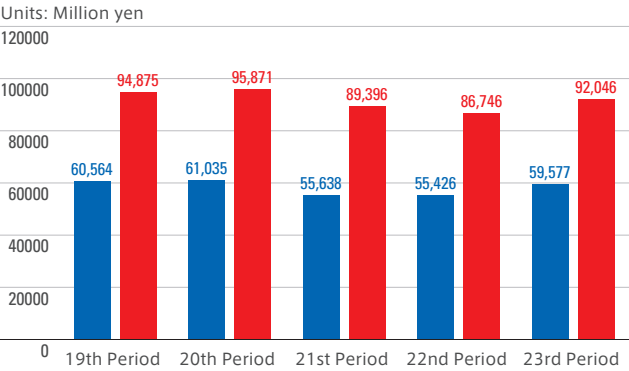
Toyal Europe S.A.S.U.
Toyal America, Inc.
Sam-A Aluminium Co., Ltd.
Toyal Zhaoqing Co., Ltd.
Hunan NingXiang JiWeiXin Metal Powder Co., Ltd.
Suzhou Toyo Aluminium Ekco Household Products Co., Ltd.
Toyo Aluminium (Shanghai) Management Co., Ltd.
Toyo Aluminium Ekco Trading (Suzhou) Co., Ltd.
Toyo Tokai Aluminium Hanbai (Shanghai) Co., Ltd.
TOYAL MMP INDIA PVT. LTD.
Svam Toyal Packaging Industries Pvt. Ltd.
TOYAL (THAILAND) Co., Ltd.
Toyo Tokai Aluminium Hanbai K.K., Singapore Branch

Production Capacity

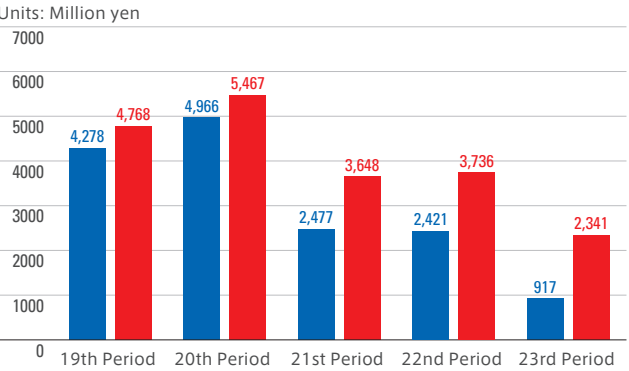
Foil: 43,000 MT/Year
Powder: 5,000 MT/Year
Paste: 7,000 MT/Year

Business Results

● Sales

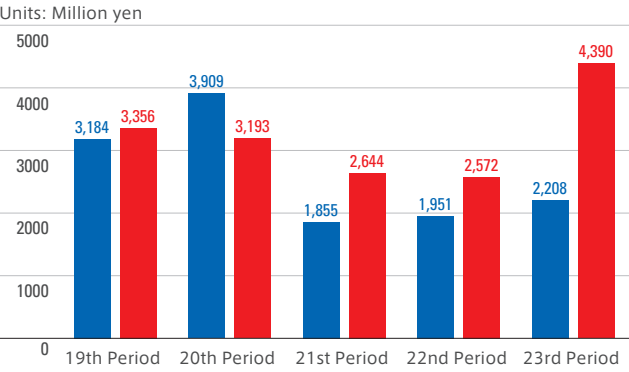


● Current profit

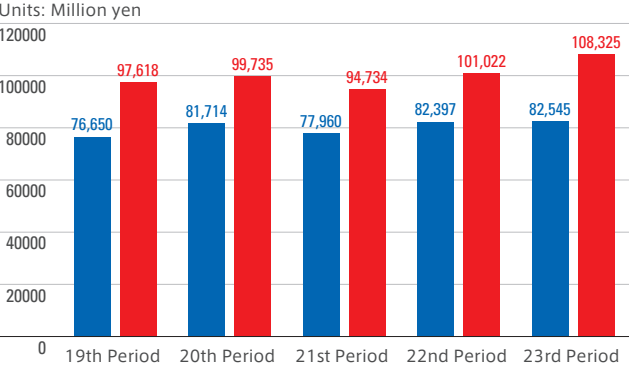


● Net income

(■ Profit attributable to owners of parent)



● Total of assets



● Net assets

