

Corporate Profile

Trade name	Nippon Light Metal Holdings Company, Ltd.
Headquarters	Urbannet Uchisaiwaicho Building, 1-1-13 Shimbashi, Minato-ku, Tokyo 105-8681 Japan

Main Group Companies

Japan	Aluminium Wire Rod Co., Ltd. ●
	NLM ECAL Co., Ltd. ●
	Toyo Aluminium Ekco Products Co., Ltd. ●
	Toyo Aluminium K.K. ●
	Toyo Rikagaku Kenkyusho Co., Ltd. ●
	Nikkei MC Aluminium Co., Ltd. ●
	Nikkei Engineering Co., Ltd. ●
	Nikkei Extrusions Co., Ltd. ●
	Nikkeikin Aluminium Core Technology Co., Ltd. (Nikkeikin ACT) ●
	Nikkeikin Aluminum for Mobility Co., Ltd. (Nikkeikin ALMO) ●
	Nikkeikin Kakoh Kaihatsu Holdings Co., Ltd. ●
	Nikkei Sangyo Co., Ltd. ●
	Nikkei Information System Co., Ltd. ●
	Nikkei Panel System Co., Ltd. ●
	Nikkei Logistics Co., Ltd. ●
	Nikkei Matsuo Co., Ltd. ●
	Nippon Light Metal Co., Ltd. ●
	Nippon Fruehauf Co., Ltd. ●
	Nippon Electrode Co., Ltd. ●
	Riken Light Metal Industry Co., Ltd. ●
Outside Japan	Nikkei (Suzhou) Precision Parts Co., Ltd. ●
	Hunan Ningxiang JiWeiXin Metal Powder Co., Ltd. ●
	Nikkei MC Aluminum (Kunshan) Co., Ltd. ●
	Toyai MMP India Pvt. Ltd. ●
	Nikkei MC Aluminum (Thailand) Co., Ltd. ●
	Nikkei Siam Aluminium Ltd. ●
	Fruehauf Mahajak Co., Ltd. ●
	Toyai America, Inc. ●
	Nikkei MC Aluminum America, Inc. ●
	Nippon Light Metal Georgia, Inc. ●
	Nippon Light Metal North America, Inc. ●
	Toyai Europe S.A.S.U. ●

● Aluminum Ingot and Chemicals ● Aluminum Sheet and Extrusions ● Fabricated Products and Others ● Aluminum Foil, Powder and Paste



 Nippon Light Metal Holdings Company, Ltd.

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<https://www.nikkeikinholdings.com/>



# Leveraging Team Power to Create Value for Customers

The NLM Group is made up of companies and divisions with diverse areas of expertise in the field of aluminum, a material brimming with potential. We create value to help solve the issues faced by our customers and the broader society by leveraging the power of all these different companies and divisions as a single team. At “Team NLM,” our mission is improving people’s quality of life and protecting the environment by creating businesses focused on aluminum.

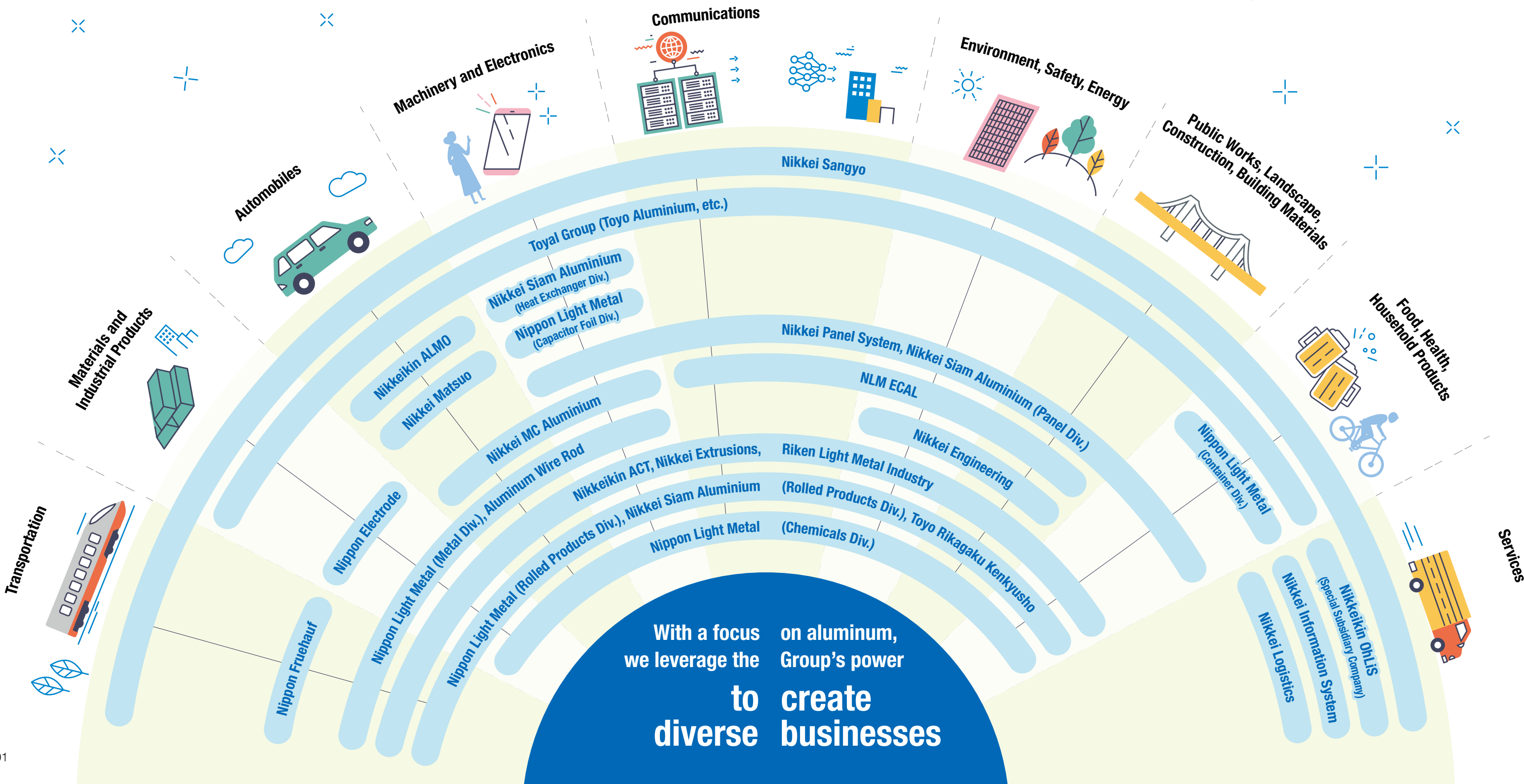
## Transcending Organizational Boundaries and Meeting Needs Across All Fields With Our “Yokogushi Development Platform”

The combined strength of the NLM Group is driven by our unity as “Team NLM,” and that unity is grounded in our “Yokogushi Development Platform.” This unique approach to development seamlessly connects our various business units in a cross-functional way from a market-in perspective. All the Group’s employees share a single commitment: “Explore the needs of customers and the broader society, and find solutions for them.” Every step from sales to development, manufacturing, and quality assurance is guided by this mindset—our total focus on collaborating with our customers to produce valuable products and services.

## Bringing Out the Potential of Aluminum with One-of-a-Kind Innovation

We address the issues faced by our customers and the broader society by making the most of the fundamental value of aluminum. Leveraging the many advantages of the material, we apply our unique approach to innovation to create value that only Team NLM can achieve.

R&D center: Nikkei Research and Development Center of the Nippon Light Metal Co., Ltd.



# SOLUTION 1

# GLOBAL ENVIRONMENT



Provided by: JR Central

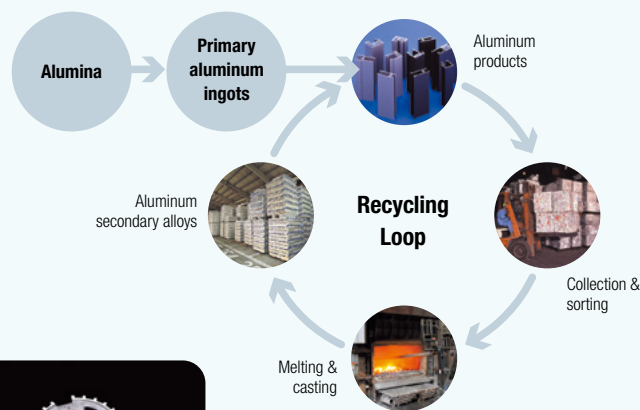
NLM Group × Global Environment

## Moving Forward with Advanced Recycling for a Sustainable Earth



### Building a Sustainable World Through Aluminum Recycling

Aluminum has many excellent properties: it is lightweight, highly workable, and strong for its weight. Another optimal property is that it is easy to recycle. Aluminum can be reused endlessly by remelting, and recycling aluminum takes just 3% of the energy required to manufacture it new. By recycling aluminum, we help reduce CO<sub>2</sub> emissions, which cause global warming. The NLM Group actively promotes aluminum recycling to help build a sustainable world.



An example of processing by one of our clients

For **Automobile Drivetrain Systems**  
“Wear resistant alloy NH41” made with our original recycled aluminum alloy

▶ Nikkei MC Aluminium

### From Shinkansen to Shinkansen: Promoting Carbon Neutrality Through Closed Loop Recycling of Shinkansen Car Bodies\*

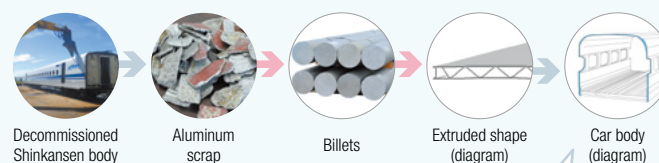
One project in the NLM Group's recycling initiative is the closed loop recycling of Shinkansen car body materials. This project is being driven by group company Nikkeikin ACT in collaboration with companies such as JR Central. Previously, decommissioned Shinkansen cars were recycled into impure aluminum cast, which could not be used in the body material of a Shinkansen car, which has a skeletal structure requiring high strength, quality, and reliability from the material. Now, however, the NLM Group's recycling and manufacturing technologies deliver the same quality as the original material, making closed loop recycling possible, with the material going directly back into Shinkansen car body parts. This reduces CO<sub>2</sub> emissions in the manufacturing process by approximately 50 tons per train.

The NLM Group is planning to expand the closed loop recycling of aluminum to other products, as well. We will leverage the power of “Team NLM” to accelerate our carbon neutrality initiatives.

\*Railway car bodies mentioned include the underframe, framework, and outer panels, all of which ensure strength.

#### ▶ Process of Shinkansen Closed Loop Recycling (Information from JR Central)

Aluminum scrap from decommissioned Shinkansen cars is melted by Nikkei MC Aluminium, cast at the Nippon Light Metal Kambara Complex, and then extruded at Nikkeikin ACT's Niigata Plant to become Shinkansen car body materials once again.



(Cross-sectional of a Shinkansen car body)



Used in the N700S train body (roof)

#### Corresponding SDG targets



#### Material Issues of the NLM Group

##### Protecting the global environment

- ▶ Reducing greenhouse gas emissions from company activities (scope 1, 2)
- ▶ Reducing greenhouse gas emissions in the supply chain (scope 3)
- ▶ Action on climate change (TCFD)

##### Providing sustainable value

- ▶ Developing and providing low-carbon products and services
- ▶ Promoting a recycling-oriented economy and society
- ▶ Shaping the future through innovation

##### Responsible procurement, production and supply

- ▶ Providing safe and secure products and services

#### Corresponding SDG targets



#### Material Issues of the NLM Group

##### Providing sustainable value

- ▶ Developing and providing robust infrastructure
- ▶ Shaping the future through innovation

##### Happiness of employees

- ▶ Developing a fulfilling workplace
- ▶ Diversity & inclusion

##### Responsible procurement, production and supply

- ▶ Providing safe and secure products and services
- ▶ Protecting and respecting human rights



## Manufacturing Strong, Lightweight Products to Help People Transcend Social Barriers



### NLM Group Supports the Japan Wheelchair Rugby Federation

The NLM Group signed an official partner agreement with the Japan Wheelchair Rugby Federation in 2020. This step came from our determination to be a company where people are proud to work and to enhance our social contributions. Under the partnership, we promote employee volunteering, offer study sessions on wheelchair rugby, and encourage employees and their families to attend games. One of our initiatives is the development of hand rims for the custom wheelchairs used by wheelchair rugby players.

The hand rim is a metal ring attached to the outside of the wheels that players grip when propelling the chair, essentially the engine of the wheelchair. Since wheelchair rugby involves intense collisions between chairs, the hand rims often get bent out of shape. Using aluminum, the NLM Group developed lightweight yet highly deformation-resistant hand rims. These first-ever Japan-produced hand rims, provided to the Federation, are contributing to the promotion and popularization of wheelchair rugby.

### New Hand Rims Excelling in International Competitions

NLM Group companies\* have produced hand rims featuring plates (ribs) inserted into the rim tubing. This increases strength while maintaining lightness and successfully suppresses deformation on impact. They have also realized low-cost manufacturing with less material loss by extrusion molding the ribbed tubing and connecting plate (for attachment to the wheel) in one piece.

The rugby chairs equipped with the new hand rims have earned high praise from players for their durability, ability to withstand hard collisions, low cost, and maneuverability. Japan's national team has used them in international competitions since 2021, contributing to their success.

In 2021, the NLM Group renovated its gymnasium, Nikkei Arena, located at the Nippon Light Metal Tomakomai Complex, to make it more accessible for parasports. It is now popular among many people as a local base for wheelchair basketball and other parasports.

From making aluminum products leveraging the material's advantages to various other initiatives, the NLM Group is helping to shape a society where everyone can thrive and excel.

\*Nikkei Metal, Nikkeikin ACT, Nikkei Kambara, Nippon Light Metal

NLM Group × Quality of Life

# SOLUTION 2

# SOCIETY AND LIFE



Hand rim



Nikkei Arena



Wheelchair for wheelchair rugby



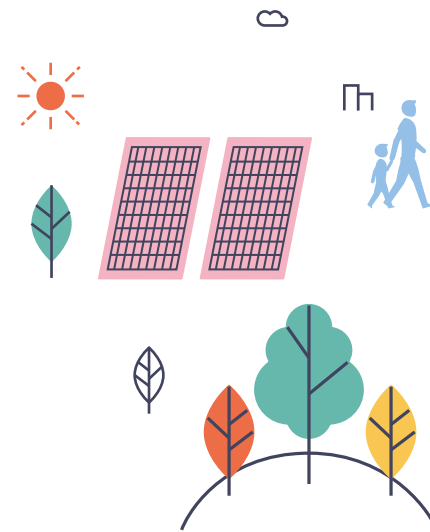
The NLM Group is an official partner of the Japan Wheelchair Rugby Federation.



# THERMAL MANAGEMENT

NLM Group × Thermal Management

From Energy Saving to Mitigating Global Warming—The NLM Group's Efforts to Protect Our Planet



## Corresponding SDG targets



## Material Issues of the NLM Group

### Protecting the global environment

- ▶ Reducing greenhouse gas emissions from company activities (scope 1, 2)
- ▶ Reducing greenhouse gas emissions in the supply chain (scope 3)
- ▶ Action on climate change (TCFD)

### Providing sustainable value

- ▶ Developing and providing low-carbon products and services
- ▶ Promoting a recycling-oriented economy and society
- ▶ Shaping the future through innovation

### Responsible procurement, production and supply

- ▶ Providing safe and secure products and services



Comfortably and Safely Managing Heat—The NLM Group's Product Lineup

## The NLM Group's Thermal Management Solutions: Paving the Way for the Era of Electric Vehicles

Aluminum has high thermal conductivity, a property that is used to achieve thermal management in products across many fields.

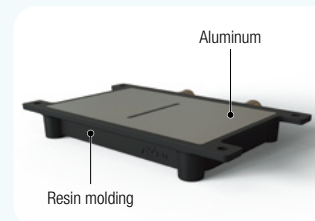
Thermal management is especially important for hybrid and electric vehicles, collectively known as xEVs. The power control unit, power semiconductors, lithium-ion batteries and other such components represent the "heart" of the xEV, safely controlling the vehicle. When these components convert electrical energy into drive power, a lot of heat is generated. Aluminum cooling plates protect the heart of the xEV by removing this heat. To meet the needs of automakers and parts manufacturers, we propose optimal solutions for customers who appreciate the way Team NLM brings together group companies and divisions to share information and technologies. In this way, the NLM Group is supporting the widespread adoption of xEVs as the automobiles of the future.

The alumina and aluminum hydroxide handled by Nippon Light Metal's Chemicals Division also boast excellent thermal conductivity. The NLM Group's differentiated particle size, shape, and purity are also highly regarded, and these products are employed in heat dissipating fillers for xEVs and in many other fields where electricity is used.

## Innovations in Thermal Management Contributing to a Sustainable World

The NLM Group also pursues technological development to further enhance thermal solutions. One example is our "Aluminum+1" technology that addresses the increasing sophistication of electronic devices by bonding aluminum with other materials such as copper or resin to create multi-materials that offer benefits such as thermal conductivity, weight saving and strength, tackling diverse challenges that cannot be solved by a single material alone.

Our thermal management solutions utilizing aluminum and chemicals and derivative technologies not only protect automobiles and electronic components from heat, but also facilitate energy savings by delivering more efficient heat utilization. This supports decarbonization by enabling the spread and development of xEVs, and the advent of a hydrogen-powered world. The NLM Group will continue to advance thermal management as an indispensable tool for building a sustainable world.



### For Bonding Technology

PAL-fit™, a bonding technology that integrates metal and resin

- ▶ Nippon Light Metal
- ▶ Nikkeikin ACT
- ▶ Nikkeikin ALMO



<https://www.nikkeikin.com/pal-fit/>

## Insulation

### ▶ Panels, etc.

### For Food Factories, Refrigerated/Freezer Warehouses, Clean Rooms

GENESTA Incombustible CFC-free thermal insulated, incombustible panels

- ▶ Nikkei Panel System



### For Freight Transportation

Temperature controlled vans

- ▶ Nippon Fruehauf



<https://www.fruehauf.co.jp/en/index.html>



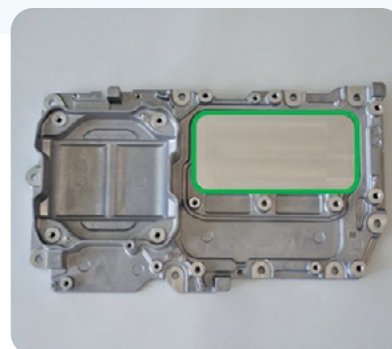
## Cooling

### ▶ xEVs, electronic devices, etc.

### For Power Control Units (PCU)

Baseplate  
Cooling plate with FSW of high-quality diecast product and high heat cooling performance fins for PCU cooling

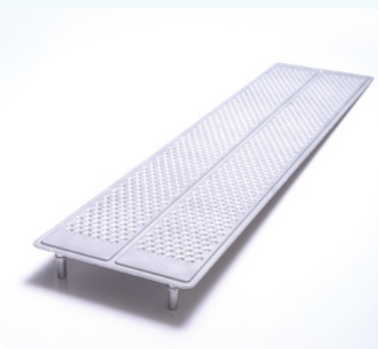
- ▶ Nikkeikin ALMO
- ▶ Nikkei Matsuo



### For Automotive Batteries

Battery cooling plate

- ▶ Nikkeikin ALMO



## Flame retardancy

### ▶ Electronic materials, various plastic materials, non-combustible materials for wallpaper, curtains, carpeting



### For Flame Retardants

Aluminum hydroxide

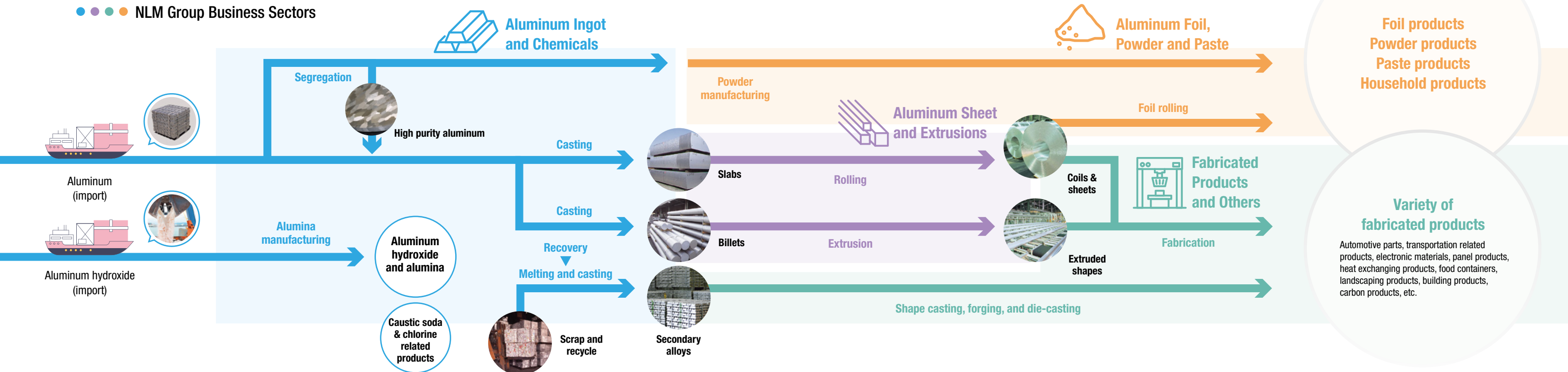
- ▶ Nippon Light Metal (Chemicals Div.)



<https://www.nikkeikin.com/products/chemical/index.html>

# Markets & Products

● ● ● ● NLM Group Business Sectors



One-stop solutions from material development to product provision—the NLM Group's technologies and products are present across many scenes of daily life and industry.

**Machinery, Electronics, Communications**

Details on products handled

For **Electronic Devices**  
Bright anodizing die-cast alloys

► Nikkei MC Aluminium

**Environment, Safety, Energy**

Details on products handled

For **Nuclear Power Plants**  
MAXUS® neutron absorber for spent fuel pool racks and dry storage casks

► Nikkeikin ACT

Provided by: NAC International Inc.

**Public Works, Landscape, Construction, Building Materials**

Details on products handled

For **Colored Titanium Materials for Building Exteriors**  
TranTixxii™ designing titanium

► Toyo Rikagaku Kenkyusho

Titanium roof of Kyushu National Museum (Provided by: Nippon Steel)

**Automobiles**

Details on products handled

For **Wire Harnesses**  
Aluminum conductors for automobiles

► Nippon Light Metal (Metal Div.)  
► Aluminum Wire Rod

**Food, Health, Industrial Products**

Details on products handled

For **Various Industries**  
Oxidizer for chemical synthesis

► Nippon Light Metal (Chemicals Div.)

**Transportation**

Details on products handled

For **Railways**  
Shinkansen interior materials (N700S Green Car central ceiling)

► Nippon Light Metal (Rolled Products Div.)

Provided by: JR Central

For **Semiconductor Manufacturing Equipment**  
Thick gauge plate for semiconductor manufacturing equipment

► Nippon Light Metal (Rolled Products Div.)

For **Disaster Prevention Equipment**  
Water supply tanks

► Nikkeikin ACT

For **Buildings (interior and exterior design)**  
Interior/exterior louvers

► Riken Light Metal Industry

For **Brakes**  
Opposed piston brake calipers

► Nikkeikin ALMO

For **Food**  
Aluminum cans and dispenser cleaning cans

► Nippon Light Metal (Container Div.)

For **Freight Transportation**  
Wing roofs

► Nippon Fruehauf

For **Electronics**  
Chemical foil for aluminum electrolytic capacitors

► Nippon Light Metal (Capacitor Foil Div.)

For **Disaster Prevention Equipment**  
Emergency supply storage sheds

► NLM ECAL

For **Shaping Public Spaces**  
Train station complexes

► Nikkei Engineering

For **Suspensions**  
Suspension components

► Nikkeikin ALMO

For **Food, Medical & Industrial Materials**  
TOYAL LOTUS® water-repellent packaging

► Toyo Aluminium

For **Buildings (ceilings)**  
NEQRES series of quakeproof ceilings

► Nikkei Panel System

For **Semiconductor Plants**  
CFC-free thermal insulated panels for clean rooms

► Nikkei Panel System

For **Crisis Management Measures**  
Flood and water gates

► Nikkei Engineering

For **Buildings (ceilings)**  
NEQRES series of quakeproof ceilings

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► Nikkei Panel System



Message from the CEO

“You can count on Team NLM to contribute to people’s quality of life and the global environment with aluminum.”



I. Okamoto  
Ichiro Okamoto  
President and Chief Executive Officer

Since its establishment, the NLM Group has been a comprehensive manufacturer of aluminum products with diverse offerings ranging from aluminum raw materials to fabricated products. Leveraging the Group’s core strengths—highly original technologies for making the most of aluminum’s properties and a wealth of knowledge and expertise amassed over the years—we supply highly diversified products for a wide range of industries.

We aim to be a corporate group that creates customer value as Team NLM by exercising the unique skills of Group companies possessing a wide range of knowledge and their members.

By integrating the strengths of Team NLM with value as it is seen by our customers and the world, and by sincerely and unflinchingly tackling challenges, we will contribute to the improvement of people’s quality of life and environmental protection as a corporate entity that grows sustainably.

Corporate Philosophy

Contribute to improving people’s quality of life and environmental protection by continuing to create business, focused on aluminum.

Basic Policies

- ▶ The Group will create healthy, safe workplaces, and achieve zero-accident operations.
- ▶ The Group will continuously provide diverse value to customers by deepening the level of collaboration and coordination within and outside the Group.
- ▶ The Group will work actively to achieve carbon neutrality, to help create a sustainable society.
- ▶ The Group will engage in fair and honest business operations, with respect for human rights and an emphasis on ethics.
- ▶ The Group will respect diverse values, and develop human resources from a long-term global perspective.

From materials manufacturer to value-creating company, the NLM Group evolves with the times.

- 1939** Nippon Light Metal Co., Ltd. (NLM) established jointly by Tokyo Dento Co., Ltd. and Furukawa Electric Co., Ltd. as an aluminum smelting company.
- Late 1970s** Transition to fabrication business accelerates, triggered by the oil crisis.
- 2012** Nippon Light Metal Holdings Co., Ltd. established.
- 2014** NLM discontinues aluminum electrolysis business, the only one in Japan, and expands into broader business areas.
- And now** We are transforming into a corporate group that contributes to people’s lives and the global environment by creating value driven by aluminum.

History of the NLM Group ▶




<https://www.nikkeihinholdings.com/company/nlm-enkaku.html>



Group headquarters, Shimbashi Office

Sustainability at the NLM Group ▶



<https://www.nikkeihinholdings.com/sustainability/index.html>

