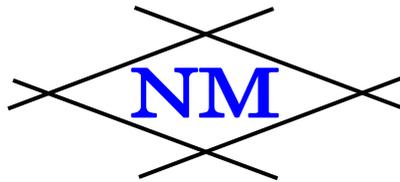


Company Profile



Niigata Metallikon Industries Corporation

Web Site www.nii-meta.co.jp

| | | | | |
|--|---|--|--|--|
|  MS CM009 |  JIS Q 9100 ISO 9001 JQA-AS0084 JQA-QMA14415 |  MS CM023 |  BSKA0273 NSCA Factory |  環境省 エコアクション21 認証番号0002995 Eco action 21 Register No.0002995 |
|--|---|--|--|--|

Company Profile

Name: Niigata Metallikon Industries Corporation

Established in: 1950

Capital: 10million yen

President: Noboru Izutsu

Head office factory: 2642, Minatomachidoori Ninocho, Chuo-ku, Niigata City

Banker: Daishi Hokuetsu Bank, Sumiyoshicho/ Niigata Branch

Taiko Bank, Ohgata Branch

Shoko Chukin Bank, Niigata Branch

Japan Finance Corporation, Niigata Branch

Corporate History

| | |
|----------------|---|
| September 1950 | Establishment as a company named "Minato Mekki". |
| August 1953 | The ex-president, Kichiji Izutsu, learned Metallikon style processing for a year from KATO. METL. SPRAYING. GUN. INDUSTRIAL. COMPANY LTD. in Tokyo. |
| January 1961 | Minato Mekki was reorganized as "Niigata Metallikon Industries Corporation". |
| April 1961 | Anodizing service has started. |
| July 1961 | A new plant was built in Shimokido. |
| January 1962 | Shimokido Factory was expanded. |
| April 1962 | Chromium plating service (for industrial use) has started. |
| 1967 | Minato-machi factory and Suehiro factory were united with Shimokido Factory. |
| July 1969 | An Ohkuma-made universal grinder (1.5m) was installed. |
| December 1971 | New buildings; White factory, meeting room and rest room were constructed. |
| 1972 | Heavy duty coating service has started. |
| May 1972 | Stainless steel spraying service (thermal spray) has started. |
| September 1975 | Factories and office building was reconstructed. |
| March 1978 | Noboru Izutsu succeeded Kichiji Izutsu as the President. |
| September 1979 | Technological tie-up with Dow Corning Corp. about MOLYKOTE®. |
| January 1980 | Full-size shot blast equipment was installed. |
| March 1980 | Capital increased to 10 million yen. |
| September 1981 | Technological tie-up with Japan Kanigen Co., Ltd. about electroless nickel plating. |
| February 1982 | Ceramic spraying and Plasma spraying service has started. |
| July 1983 | Automatic zinc plating machine was installed to the Shimokido Factory. |
| December 1983 | A new factory was constructed (Zaimokucho Factory). |
| August 1994 | A painting factory was established in Zaimokucho Factory. |
| August 1995 | Automatic plating equipment (Cu, Ni, Cr, Ni-P, and Sn) was installed to Shimokido Factory |
| October 2000 | Plating work transferred from Hitachi, Ltd. |
| August 2001 | Blackening equipment was enhanced. |
| July 2003 | Automatic electroless nickel plating equipment was installed. |
| October 2003 | Trivalent chromium plating service has started. |
| July 2004 | The Second Painting Factory was constructed. |
| September 2004 | The nickel-boron plating equipment and the nickel-Teflon plating equipment have been strengthened of "the Shimokido-first-factory". |
| March 2005 | Shimokido third Factory started operation. |
| September 2006 | Lead-free electroless nickel plating service (environment-compatible type) has started in Shimokido first factory. |
| December 2006 | Trivalent chromating service (environment-compatible type) has started in Shimokido first factory. |
| May 2007 | Lead-free nickel-Teflon plating service (environment-compatible type) has started in Shimokido first factory. |
| May 2008 | Lead-free nickel-boron plating service (environment-compatible type) has started in Shimokido first factory. |
| October 2008 | ECO ACTION 21 certification (0002995) |
| May 2009 | The company got approval for the construction business (painting business). |
| August 2011 | The company got certification of JIS Q 9100 and ISO 9001. |
| April 2012 | HVOF service has started in Shimokido third factory. |
| October 2013 | Shot peening service has started in Zaimokucho factory. |
| February 2014 | Surface treatment of aluminum aircraft parts has started. |
| September 2015 | A large-scale tin plating equipment was installed to Shimokido second factory. |
| April 2016 | Surface treatment equipment and painting equipment were constructed in NSCA Factory. |
| August 2016 | A gold-copper plating (pink-gold plating) equipment was installed to Shimokido second factory. |
| August 2016 | A plating equipment for plastics was installed to Shimokido second factory. |
| February 2017 | NSCA factory got certification of JIS Q 9100 and ISO 9001. |
| March 2017 | A large semi-bright silver-plating equipment was installed to Shimokido second factory. |
| June 2017 | NSCA factory got certification of Nadcap. (Certification number15329178839) |
| December 2018 | Fluorescent penetrant flaw detector was installed to NSCA factory. (Scheduled to acquire Nadcap certification.) |

Services

[Electroplating]

- silver plating(semi-bright / bright) • copper plating
- tin plating (semi-bright / bright)
- nickel plating (bright nickel plating, black nickel plating)
- zinc plating (trivalent colored chromate, trivalent bright chromate, trivalent black chromate)
- zinc - nickel alloy plating
- chromium plating, trivalent chromium plating, hard chromium electroplating, hard chromium plating
- gold plating • Satin finish plating • gold-copper plating (pink-gold plating)

[Plating on plastics]

[Lead-free solder plating]

- SnCu solder plating
- tin lead plating

[Lead-free electroless nickel plating]

- lead-free electroless nickel plating
- nickel boron plating
- nickel teflon plating

[Anodizing]

- white anodizing
- colored anodizing
- hard anodizing

[Chemical conversion coating on aluminum]

- chromium-free coating
- trivalent chromium coating
- hexavalent chromium coating

[Conversion coating on iron]

- phosphating
- blackening

[Electropolishing]

- electropolishing of stainless steel and titanium alloys

[Thermal spraying]

- HVOF
- metallikon spraying
- metal powder spraying
- ceramic coating
- plasma spraying
- nylon spraying,
- Rokide® spraying
- build up spraying of Stellite® and aluminum bronze

[Blasting]

- sand blasting
- steel shot
- steel grid
- cut wire
- glass beads

[Shot peening]

- shot peening

[Painting]

- baking
- melamine coating,
- acrylic coating
- fluoric coating
- corrosion-resistant coating (nylon, tetrone)
- powder coating
- Molykote®

[Polishing]

- buffing
- cylindrical polishing

Nickel Teflon plating

Nickel Teflon coating is a lubricant, water repellent and incoherent coating.

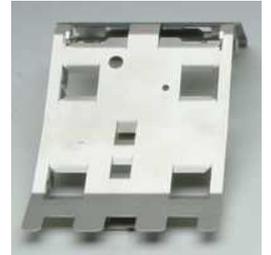
It is low frictional, heat conductive and strong against corrosion and wear.

This coating also works well for noise reduction and preventing static electricity.



Nickel boron plating

The hardness of this coating is above 700Hv when deposited, 800Hv when heat-treated at 200°C, and even at 400°C, this coating does not soften. As nickel boron is harder than Ni-P at 200°C, this processing is often applied to aluminum alloys. This coating causes little abrasion to either the surface itself or the chromium plated/nitride surface when slid up against each other.



Lead-free nickel plating

Strong resistance against corrosion and wear, often applied to shafts or bearings.

Chemical resistance and heat resistance greatly improve when a specific type of stainless steel is thermal sprayed to the coating.



Zinc plating

This coating method is widely applied to various types of parts, especially light electrical parts or automotive parts such as bolts and nuts, as it is incredibly resistant to corrosion.

Trivalent zinc chromating

Trivalent chromating is a replacement of hexavalent chromating. It is more friendly to the environment than Cr⁶, and is gradually increasing its share in the surface treatment industry.

This process is applied after zinc plating treatment, and improves corrosion resistance.

The appearance of the coating is similar to that of bright chromate.



Anodizing

Anodizing is a type of finishing that makes the part corrosion-resistant.

It also works well to obtain a good-looking surface.

Widely used for processing automotive parts.

Hard chromium plating

Good resistance to wear.

This treatment is usually used for processing industrial hydraulic pistons and molds.

Phosphating

This treatment adds the item resistance to wear and is usually applied to piston skirts of diesel engines.

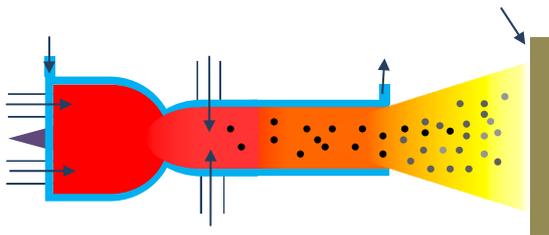
Trivalent chromium plating

Hexavalent plating is gradually replaced to a more environmentally-friendly trivalent plating.

HVOF

◆What is HVOF?

It is a type of thermal spraying that, by making a high pressure inside the spray gun, injects melted materials to the substrate at a high speed.



◆And what is so good about it?

It makes a very hard, dense, and uniform coating that is resistant to wear and corrosion, less-porous and less-oxides. This method can form a wide range of coating thickness appropriate to the purpose.

• Ceramic coating

Because this coating is well-resistant to heat, corrosion, and wear, it can be applied not only to metals but to glasses and potteries.

• Blasting

This processing is widely used to protect factory buildings from corrosion.

• MOLYKOTE®

MOLYKOTE® is a type of processing that makes a coating of molybdenum disulfide, which reduces friction and as a result, it produces amazing resistance to wear.

Painting

We have many types of paint coating services. Below are some of the examples of painting methods:

- Acrylic coating

Acrylic coating is one of the leading technologies in the coating industry.

It is known for its great color retention ability when exposed outside.

Both baking method and air-drying method can be used for this processing.

- Urethane coating

When urethane coating is applied to a product, it forms a coating that is resistant to weather, chemicals, and abrasion.

The coating is very hard but flexible, and often used for automobiles, aircraft, and other vehicles.

- Melamine coating

Melamine coating is a type of coating usually applied to metal hardware.

- Epoxy coating

Epoxy coating is not strong against weather, but it provides superior adhesion, resistance to chemicals and salt, and usually used as a primer coating for machines and automobiles to obtain a good resistance to corrosion.

Process Equipment

Shimokido First Factory

| Equipment name | Application | Size / number |
|---|---------------------------|-------------------------|
| Automated plating equipment (Cu, Ni, Cr, Ni-P, Sn) | Cu plating | 3500L (1600×2100×1200) |
| | Ni plating | 3500L (1600×2100×1200) |
| | Cr plating | 1200L (1600×700×1200) |
| | Ni-P plating | 1800L (1600×1100×1200) |
| | Sn plating | 2300L (1600×1400×1200) |
| Automated zinc plating equipment | | 4500L (1800×2400×1200) |
| Manual zinc plating equipment | | 1500L (300×600×900) |
| Hoisting anodize equipment | | 5000L (4500×900×1300) |
| Manual anodize equipment | | 1500L (2000×900×900) |
| Hoisting electroless Ni plating equipment | | 1500L (1500×1000×1200) |
| Hard chromium plating equipment | No. 1 | 4000L (2700×1000×1500) |
| | No. 2 | 1500L (2000×900×900) ×2 |
| | No. 3 | 360L (600×600×1000) |
| Silver plating equipment | | 550L (1100×500×1100) |
| Phosphating equipment | | 600L (1500×650×800) |
| Blackening equipment | | 800L (1500×900×1000) |
| Buffing equipment | Buffing lathe | 2 |
| | Automatic buffing machine | 1 |

Shimokido Second Factory

| Equipment name | Size |
|---|----------------|
| Plating equipment for plastics | 1000× 700× 400 |
| Gold-copper plating (pink-gold plating) plating equipment | 1000× 700× 400 |
| Tin (semi-bright / bright) plating equipment | 2400×1700× 500 |
| Semi-bright silver-plating equipment | 2400×1200× 500 |
| Nickel plating equipment | 600× 500× 700 |
| SnCu solder plating equipment | 600× 500× 800 |

Inspection equipment

| Inspection equipment |
|--|
| Fluorescent X-ray for film thickness meter |
| Eddy current thickness gauge |
| Hardness meter: Micro Vickers, Rockwell |
| Surface roughness meter |
| Micrometer |
| Dial gauge |
| Digital vernier caliper |

Process Equipment

Shimokido Third Factory

| Equipment name | Application | Number | Remarks |
|----------------------------|--------------------|--------|-------------|
| Thermal spraying equipment | HVOF | 1 | |
| | Arc spraying | 1 | |
| | Gas spraying | 3 | |
| Lathe | Thermal spraying | 1 | Φ600×3000 |
| Blasting machine | Manual blasting | 1 | 4m×4m×16m |
| | Automated blasting | 1 | 4m×2.5m×16m |
| Painting equipment | Work area | | 70m × 18m |
| | Hoisting machine | 3 | 2.8t × 3 |

Zaimokucho Factory

| Equipment name | Application / detail | Number | Remarks |
|------------------------------|---|--------|------------------|
| Thermal spraying equipment | Plasma spraying | 2 | |
| | Arc spraying | 3 | |
| | Gas spraying | 2 | |
| Lathe | Lathe | 1 | Φ400×1200 |
| | Lathe | 1 | Φ800×4000 |
| Blasting equipment | Manual blasting | 1 | Max: 4000 × 8000 |
| | M Table manual blasting (small parts) | 2 | |
| | Table | 8 | |
| | Table (aluminum oxide only) | 2 | |
| | Conveyor (aluminum cut wire) | 1 | |
| Cylindrical grinding machine | Cylindrical grinding machine | 4 | Full length:2000 |
| Coating line equipment | Automatic electrostatic coating machine | 1 | Max: 2000 × 1800 |
| | Small paint coating machine | 2 | |

Process Equipment

NSCA Factory

| | Equip name / Application / size |
|---|---|
|  | Automated aluminum surface treatment equipment |
| | Sulfuric acid anodize 4100L(3500×900×1500) |
| | Hexavalent chromium chem film) |
| | 3650L (3500×800×1500) |
| | Trivalent chromium chem film |
| | 3650L (3500×800×1500) |
|  | Paint booth Width: 4.4m |
|  | Painting drying furnace room Temperature range:Up to 200°C |
|  | Laboratory |

Inspection equipment

NSCA Factory

| a | Equip name | Description |
|---|--|--|
|  | <p>Atomic Absorption Spectrophotometer AA-7000F (Made by SHIMADZU CORPORATION)</p> | <p>BKG: deuterium lamp or self-reversal Measurable range: 185.0 – 900.0nm Czerny-Turner mount (aberration correction type) Diffraction grating: 1800 per 1mm Focal distance: 300mm</p> |
|  | <p>Fume hood (Draft chamber) CBZ-Sc12-H1-S (Made by Shimazu RIKA Corporation)</p> | <p>Dimensions: W 1200×D750/800×H2250mm Top plate material: Ceramic</p> |
|  | <p>Hydrogen embrittlement testing machine</p> | <p>Dimensions: W 1150mm×D655mm×H2301mm Test load in tensile: 100kN Test area: W 600mm×H1190mm Crosshead speed: 1μm/h to 100mm/min Crosshead speed accuracy: <0.01% von Vnom</p> |
|  | <p>Salt water spray test machine STP-90V-4Z</p> | <p>It complies with "ASTM B 117". Sample size : 100×50×1mm Size inside the device W 900×D600×H400mm</p> |

【Quality Management System】

| | |
|-----------------------|--|
| QMS | JIS Q 9100 |
| Scope of registration | <ul style="list-style-type: none"> ▪ Surface treatments (chemical conversion coating for aluminum alloys, zinc plating) and painting for aircraft parts and defense products parts ▪ Thermal spraying and blast processing for generator parts |
| Register No | JQA-AS0084 |
| Registered date | 2011 / 8 / 5 |

| | |
|-----------------------|---|
| QMS | ISO9001 |
| Scope of registration | <ul style="list-style-type: none"> ▪ Surface treatments (Plating, thermal spraying and blast processing, painting) of metallic parts |
| Register No | JQA-QMA14415 |
| Registered date | 2011 / 8 / 5 |

| | |
|-----------------------|---|
| QMS | Nadcap (NSCA factory) |
| Scope of registration | <ul style="list-style-type: none"> ▪ Chemical Processing Sulfuric acid anodize : MIL-A-8625/AMS2471 Aluminum chemical conversion coating : MIL-DTL-5541 |
| Register No | 15329178839 |
| Registered date | 2017 / 6 / 10 |

【Environment Management System】

| | |
|-----------------|---------------|
| EMS | Eco action 21 |
| Register No. | 0002995 |
| Registered date | 2008/10/10 |

【Business License】

| | |
|--------------|---|
| License type | Painting business in ordinary construction business |
| License No. | No. 43207 licensed by the governor of Niigata |