

# NIPPON KINZOKU Strengthens Promotion of "L·Core" as an Eco-Product: Functional Stainless Steel Achieving High Conductivity via Surface Modification

**- Eliminates Plating, Lowers Costs, and Resists Corrosion even in high-temperature, high-humidity environments -**

NIPPON KINZOKU CO., LTD. (Headquarters: Minato-ku, Tokyo; President: Yasushi Shimokawa; TYO: 5491) is proud to announce the strengthened promotion of "L·Core," a functional stainless steel that utilizes proprietary surface modification technology to achieve extremely low contact resistance while maintaining the inherent corrosion resistance of stainless steel. We have repositioned L·Core as a strategic "Eco-Product" to support sustainable manufacturing.

By integrating high-performance characteristics directly into the base material, we enable customers to skip redundant processing steps and improve material yields. This approach not only streamlines manufacturing but also reduces the environmental footprint across the entire supply chain, driving progress toward a carbon-neutral society.

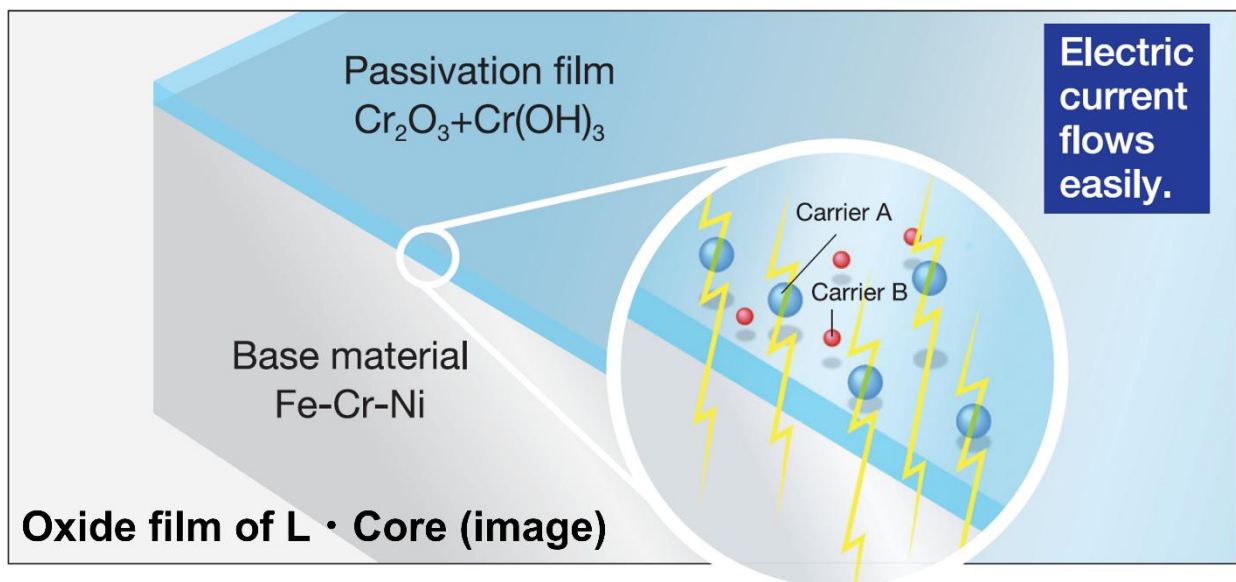


Figure 1: Structural Diagram

## Development Background: Transforming Stainless Steel into a Highly Conductive Material

While conventional stainless steel excels in corrosion resistance due to its "passivation film," this same film typically acts as an electrical insulator. Consequently, components requiring conductivity have traditionally relied on high-cost nickel (Ni) plating or conductive tapes. L-Core solves this challenge by making the passivation film itself conductive. This breakthrough ensures high conductivity in the material alone, streamlining the manufacturing process and achieving significant cost reductions alongside a lower environmental footprint.

### ■ 1. Technical Features: Formation of "Carrier Doping" (Conductive Pathways)

Using proprietary surface treatment technology, we form "carrier-doped" regions within the passivation film that function as pathways for electricity.

- **Balancing Conductivity and Corrosion Resistance:** The film is modified without being destroyed, preserving the excellent corrosion resistance inherent to stainless steel.
- **Eliminating Post-Processing:** Since the material itself offers low resistance, it can be used for conductive components without additional steps like plating.

### ■ 2. Performance Data: Superior Contact Resistance and Long-term Stability

L-Core demonstrates low contact resistance comparable to semi-bright Ni plating and maintains this performance even under harsh conditions.

- **Low Contact Resistance:** Delivers significantly lower resistance compared to conventional stainless steel (SUS304 BA).
- **High Reliability:** Almost no performance degradation was observed even after 2,700 hours in a high-temperature, high-humidity environment (60°C, 95% RH).

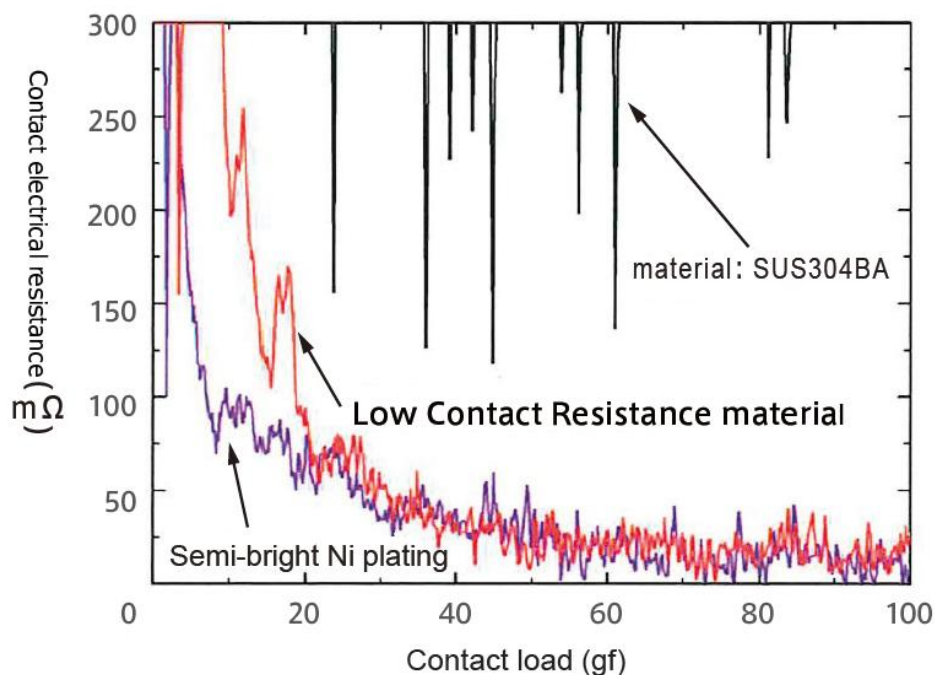


Figure 2: Comparison between Base Material (SUS304 BA) and Semi-bright Ni-plated Material

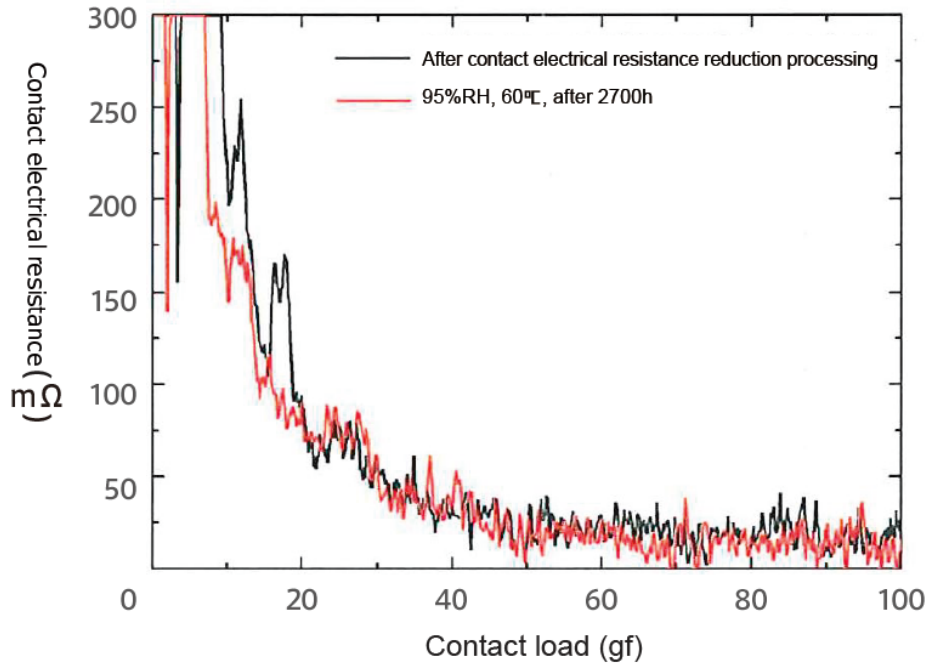


Figure 3: Contact Resistance after 2,700 hours at 60°C and 95% RH

### ■ 3. Key Benefits for Customers: Cost Reduction and Quality Improvement

Item	L · Core	Ni-plated stainless steel
Corrosion resistance	◎	× (discoloration)
time-course changes	○	○
Stamping	○	× (Peeling)
Cost	◎	△

20-50%  
cost  
reduction!

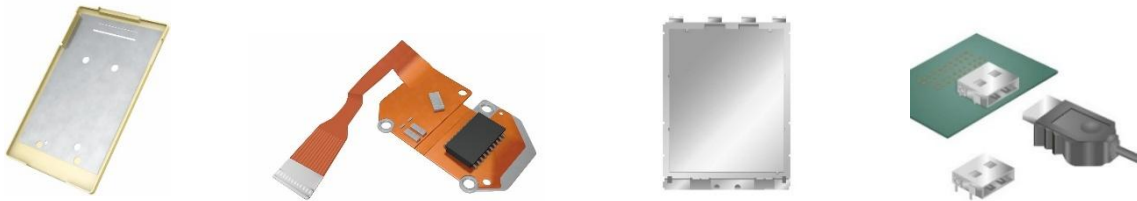
Figure 4 : Comparison Chart

### ■ 4. Product Specifications & Production Capabilities

- **Applicable Steel Grades:** All austenitic series (e.g., SUS301, SUS304, etc.)
- **Thickness:** 0.05 mm - 0.30 mm
- **Width:** Up to 200 mm
- **Finishes:** Compatible with all finishes except for TA (Tension Annealing)

## ■ 5. Application Examples

- Smartphone chassis
- Flexible Printed Circuits (FPC)
- Display bezels (LCD, etc.)
- Electrical connectors



### Steel Strip Products Overview

Our proprietary equipment, designed with accumulated cold rolling expertise, and the industry-leading proprietary technologies developed by it, meet all your needs.

**Our website:** <https://www.nipponkinzoku.co.jp/en/corporate-profile/business/cold-rolled-stainless-steel-strip>

### Regarding the 11th Business Plan “NIPPON KINZOKU 2030”

Our 11th Business Plan, "NIPPON KINZOKU 2030," envisions us as a "Multi & Hybrid Material Company creating new value for people and the planet." We focus on three core pillars:

- Multi & Hybrid Material: Utilizing a diverse range of materials.
- Near Net Shape: Forming materials into shapes close to the final product.
- Near Net Performance: Embedding final product performance directly into the material stage.

Through these technologies, we are transforming our business structure to lead the market with innovation and flexibility.

For more information, please visit our Investor Relations page:

<https://www.nipponkinzoku.co.jp/en/investor-relations/strategies>

Note: This document has been translated from a part of the Japanese original. It is provided for reference purposes only. If there's a difference between this translated document and the Japanese original, the Japanese original will take precedence.

**\*\*\*Contact for Inquiries Regarding This Product and Technical Information\*\*\***

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<https://www.nipponkinzoku.co.jp/en/inquiry>