

NIPPON KINZOKU Establishes Mass Production of Ultra-Thin and Narrow Stainless Steel for Insulin Needles

- Addressing the Global Rise in Diabetes -

NIPPON KINZOKU CO., LTD. (Headquarters: Minato-ku, Tokyo; President: Yasushi Shimokawa; TOKYO: 5491) is pleased to announce the commencement of mass production for its "Ultra-thin and narrow-width stainless steel" optimized for laser welding in ultra-fine insulin needles. In response to growing global demand, the company has established a stable supply system for these high-quality materials.



Representative image: Ultra-fine insulin injection needle

Background: Global Surge in Demand for Injection Needles and the Evolution Toward "Painless" Needles

The scale of the global diabetes crisis is expanding. According to data released by the International Diabetes Federation (IDF) in May 2025, 589 million adults—roughly one in nine—are living with diabetes. This figure is projected to rise to 853 million (approximately one in eight) by 2050. In line with this trend, the global demand for insulin needles continues to escalate.

Furthermore, insulin delivery is evolving toward "painless" experiences that reduce patient burden. Modern designs prioritize minimizing pain and bruising, leading to the widespread adoption of ultra-fine needles such as 30G, 31G, and 32G. This trend is further supported by the growing popularity of compact, portable pen injectors. Additionally, the global rise in weight-management medications—which also utilize these ultra-fine needles—is further accelerating market expansion.

Primary Applications	Size	Outer Diameter (mm)	Inner Diameter (mm)	Wall Thickness (mm)
Insulin Injection	33G	0.20±0.02	0.07±0.03	0.065
	32G	0.23±0.02	0.08±0.03	0.075
	31G	0.27±0.02	0.10±0.03	0.085
	30G	0.31±0.02	0.12±0.03	0.095
Subcutaneous Injection	24G	0.56±0.02	0.30±0.03	0.130
Intramuscular Injection	22G	0.72±0.02	0.41±0.03	0.155
Intravenous Injection	20G	0.89±0.02	0.59±0.03	0.150
Blood Transfusion	18G	1.25±0.02	0.82±0.03	0.215

Table: Representative Sizes of Needles

Our Track Record: Quality Excellence Supporting World-Class Market Share

We supply NK-304NKM, a specialized stainless steel for thin-walled welded tubes used in medical and cosmetic applications, most notably for "painless needles". This material offers a superior combination of stable weldability and excellent drawability.

We maintain a world-leading market share (*1) of approximately 57% in Japan and 55% in key overseas regions (*2). Our quality advantage is highly recognized and valued throughout the global market.

Note 1: Based on our research (March 2026), covering 34 companies globally.

Note 2: Key regions and countries include Southeast Asia, South Korea, China, India, and the EU.

Technological Innovation: Transitioning to Laser Welding and Establishing a New Mass Production System

Traditionally, insulin needle manufacturing involved forming tubes from 0.2mm thick base materials using TIG or plasma welding, followed by repeated drawing and heat treatment to achieve ultra-thin gauges.

However, to meet surging global demand, the industry has increasingly transitioned to laser welding. This shift enables significantly higher welding speeds and allows for base materials to be over 50% thinner (e.g., 0.08mm) from the initial stage.

In response to numerous requests from global customers for high-quality materials optimized for laser welding, we have conducted extensive trials in collaboration with leading manufacturers. As a result, we have successfully established a system for the stable mass production and supply of thin-walled, narrow-width materials that meet the highest standards of quality and performance.

Key Product Features and Competitive Strengths

Materials for laser welding demand the same rigorous quality control as those used for conventional TIG and plasma welding. Leveraging our core technical strengths, we achieve exceptional stability even in ultra-thin materials (0.08mm thickness).

1. Superior Edge Quality:

Advanced control of the "shear surface ratio" -a critical factor in welding success- minimizes welding defects.

2. Continuous Stability for Long Coils:

Consistent weldability is maintained across the entire 4,000-meter coil length, ensuring a stable supply for high-volume production.

3. High-Precision Dimensional Tolerances:

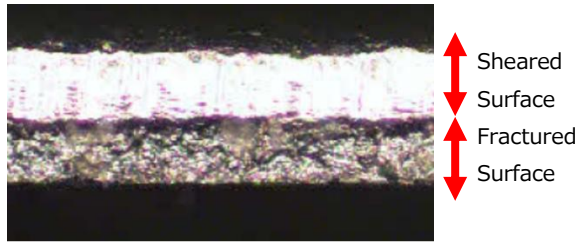
We push the limits of thickness and width tolerances to meet the exacting requirements of high-speed laser welding.

4. Excellent Workability:

Our materials offer superior ductility and weld zone integrity, allowing them to be drawn into ultra-fine needles without fracturing.

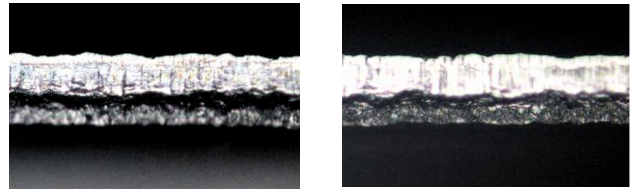
Cross-Sectional Condition

Shear-to-Break Ratio: 50%



Cross-Sectional Condition

Shear-to-Break Ratio: 50%



TOP (Start of cut)

END (End of cut)

*Total cut length: Approx. 4,500 m

Photo 1: Material for TIG / Plasma Welding
Thickness: 0.2mm (Width: 12.8mm)

Photo 2: Material for Laser Welding
(Representative size)
Thickness: 0.08mm (Width: 6.3mm)

Leveraging our expertise in advanced rolling and processing technologies cultivated over many years, we are committed to responding flexibly to evolving industrial structures and the sophisticated requirements of our customers. Furthermore, by ensuring a stable supply of high-performance materials, we aim to contribute to the advancement of medical technology and the resolution of global social challenges.

Cold-Rolled Steel Strip Product Overview

Our proprietary production facilities, custom-designed through decades of accumulated cold-rolling expertise, combined with our industry-leading technologies, enable us to meet the diverse and sophisticated needs of our customers.

Product Information (Steel Strips):

<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*****

NIPPON KINZOKU CO., LTD. Production Process & Support Department

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