

November 26, 2015

Tanaka Precious Metals
Tanaka Holdings Co., Ltd.

Tanaka Precious Metals to Start Full-scale Mass Production of CDF-10 on December 1: Long-life, Inexpensive Cadmium-free Electrical Contact Material for Vehicles, Smartphones and Consumer Electronics

Reducing wear during use to realize around 20 percent or higher
cost savings compared to existing products

Tanaka Holdings Co., Ltd. (Head office: Chiyoda-ku, Tokyo; Representative Director & CEO: Akira Tanae) announced today that the manufacturing business of the Tanaka Precious Metals, Tanaka Kikinzoku Kogyo K.K. (Head office: Chiyoda-ku, Tokyo; Representative Director & CEO: Akira Tanae) has successfully developed CDF-10, a cadmium-free electrical contact material used primarily in vehicles and smartphones with improved sliding wear resistance^{*1} compared to existing products. It has developed a system of mass production and will start full-scale operations on December 1.

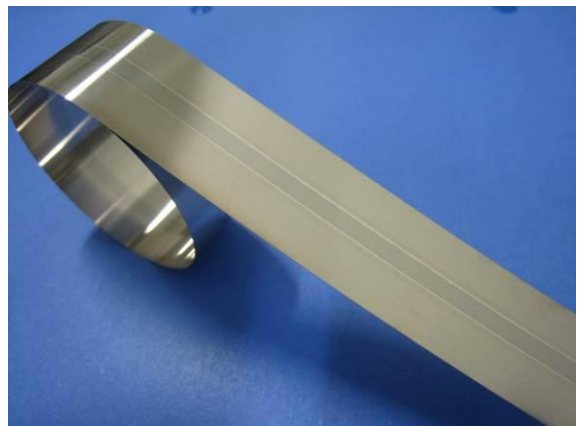
■ Background to development of clad materials for electrical contacts

One type of electrical contact material, clad material, uses a different high electrical conductivity contact metal bonded only to the points of contact on a comparatively inexpensive base metal. Clad material enables reduced amounts of contact metal, which functions sufficiently at a thickness of a few dozen microns at the contact points. So clad electrical contacts are an inexpensive material while also having high sliding wear resistance.

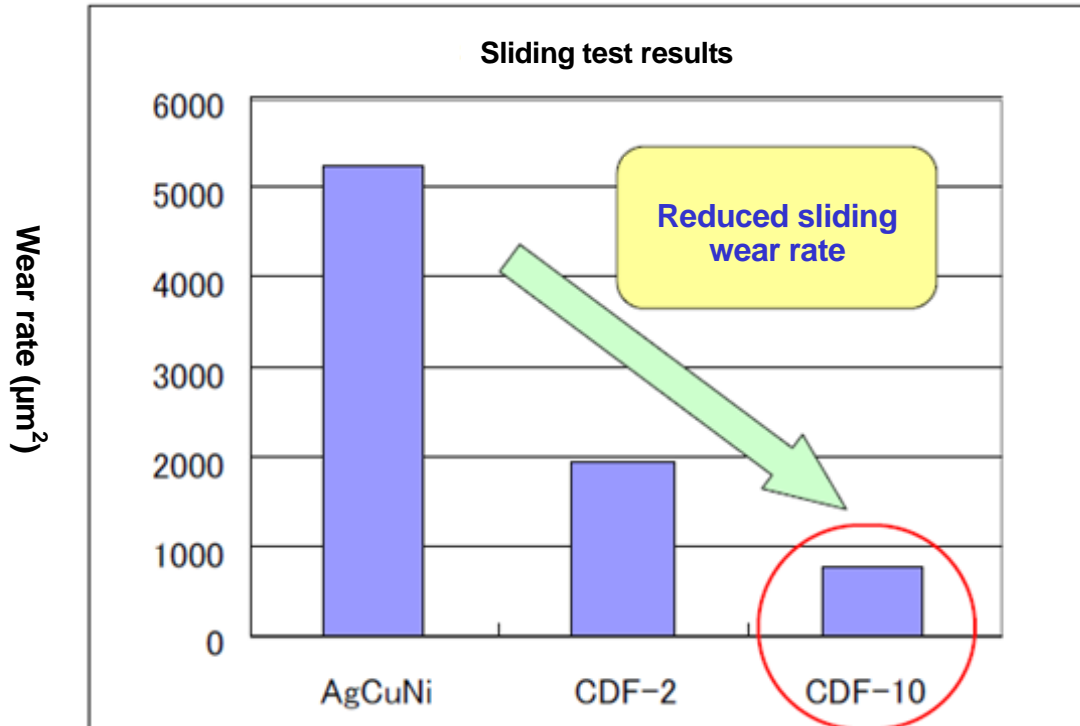
In the contact materials market, precious metals have been essential materials for clad material contact points used in components that demand high reliability, such as automotive air conditioner damper motors, with silver-copper-nickel alloys (AgCuNi). In 1993, Tanaka Kikinzoku Kogyo developed CDF-2 for this market, as a modified AgCuNi alloy with improved sliding wear resistance, and it is currently one of Tanaka's core electrical contact products, alongside AgCuNi. However, with even higher market requirements over recent years, development of even longer-life, inexpensive products have become an issue for the company.

■ Properties of CDF-10 cadmium-free clad material for electrical contacts

The main component of this successfully developed CDF-10 is AgCuNi, to which fine 1-2 μ m deposited particles have been added to control adhesive wear^{*2} during sliding. The sliding wear rate of CDF-10 is one-fifth that of AgCuNi and one-half that of CDF-2, and when applied at the same thickness, it achieves more than twice the life of either. In other words, CDF-10 enables the same performance to be maintained at half the current thickness, meeting customer needs for thinner contact materials. This technology enables cost reductions of about 20–40 percent for customers developing products that use clad material for electrical contacts.



clad material



■ **Future initiatives with mass production of CDF-10**

Tanaka Kikinzoku Kogyo boasts the world's largest share of precious metal clad material production, at over 40 percent share, and as a leading company in this field, it is continuing development to provide electrical contact material that meets the various needs of its customers. Going forward, it aims to further expand its share in markets for highly versatile micro-motors, switches and connectors through their use with smartphones and consumer electronics in addition to automotive air conditioner damper motors and various sensors. Tanaka Kikinzoku Kogyo is targeting yearly sales of CDF-10 worth 500 million yen by 2018.

*1 Durability in relation to surface wear that occurs from rubbing in metal-to-metal contact situations.

*2 Wear due to sticking and fracturing between materials when friction is applied to uneven metallic surfaces.

■Tanaka Holdings Co., Ltd. (Holding company of Tanaka Precious Metals)

Headquarters: 22F, Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo

Representative: Akira Tanae, Representative Director & CEO

Founded: 1885

Incorporated: 1918

Capital: 500 million yen

Employees in consolidated group: 3,511(FY2014)

Net sales of consolidated group: 856.4 billion yen (FY2014)

Main businesses of the group:

Strategic and efficient Group management and management guidance to Group companies as the holding company at the center of the Tanaka Kikinzoku Group

Website: <http://www.tanaka.co.jp/english> (Tanaka Precious Metals),

<http://pro.tanaka.co.jp/en> (Industrial products)

■Tanaka Kikinzoku Kogyo K.K.

Headquarters: 22F, Tokyo Building, 2-7-3 Marunouchi, Chiyoda-ku, Tokyo

Representative: Akira Tanae, Representative Director & CEO

Founded: 1885

Incorporated: 1918

Capital: 500 million yen

Employees: 1,992 (as of October 1, 2015)

Sales: 872 billion 677million yen (FY2014)

Main businesses:

Manufacture, sales, import and export of precious metals (platinum, gold, silver, and others) and various types of industrial precious metals products. Recycling and refining of precious metals.

Website: <http://pro.tanaka.co.jp/en>

<About the Tanaka Precious Metals>

Established in 1885, the Tanaka Precious Metals has built a diversified range of business activities focused on the use of precious metals. On April 1, 2010, the group was reorganized with Tanaka Holdings Co., Ltd. as the holding company (parent company) of the Tanaka Precious Metals. In addition to strengthening corporate governance, the company aims to improve overall service to customers by ensuring efficient management and dynamic execution of operations. Tanaka Precious Metals is committed, as a specialist corporate entity, to providing a diverse range of products through cooperation among group companies.

Tanaka Precious Metals is in the top class in Japan in terms of the volume of precious metal handled, and for many years the group has developed and stably supplied industrial precious metals, in addition to providing accessories and savings commodities utilizing precious metals. As precious metal professionals, the Group will continue to contribute to enriching people's lives in the future.

The five core companies in the Tanaka Precious Metals are as follows.

- Tanaka Holdings Co., Ltd. (pure holding company)
- Tanaka Kikinzoku Kogyo K.K.
- Tanaka Denshi Kogyo K.K.
- Electroplating Engineers of Japan, Limited
- Tanaka Kikinzoku Jewelry K.K.