

May 9, 2013

Tanaka Precious Metals  
Tanaka Holdings Co., Ltd.

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## **Tanaka Precious Metals First to Obtain ISO/IEC17025 Accreditation for Silver Analysis Technology in Japan**

Expecting demand expansion for power devices, LED and MEMS, the Company has contributed to unification of international standards for silver analysis, which is the most difficult among precious metals

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Tanaka Holdings Co., Ltd. (a company of Tanaka Precious Metals, Head office: Marunouchi, Chiyoda-ku, Tokyo; President & CEO: Hideya Okamoto) today announced that the TKG Laboratory Center of Tanaka Kikinzoku Kogyo K.K. (Head office: Marunouchi, Chiyoda-ku, Tokyo; President & CEO: Hideya Okamoto), which operates the Tanaka Precious Metals' manufacturing business became the first company in Japan to acquire ISO/IEC17025:2005<sup>(\*)</sup> accreditation for silver analysis technology.

### **■ First to obtain accreditation in Japan after succeed in improving analysis accuracy**

The ISO/IEC17025:2005 accreditation recognizes that Tanaka Kikinzoku Kogyo's analysis technology is compliant with international standards on repeatability of analytical results concerning the quantitative analysis of 37 elements<sup>(\*\*)</sup> including 23 significant elements that should be analyzed as trace elements in silver and this is the first time this kind of accreditation has been awarded in Japan. Upon certification, from January 2011, Tanaka Kikinzoku Kogyo has continued working on the optimization of silver analysis techniques. Through these efforts, the Company sought to correct solubility conditions of silver analysis samples while confirming the validity of the analysis method, and the improvement in accuracy of analysis made it possible to obtain ISO/IEC17025:2005 accreditation.

ISO/IEC 17025 is an international standard that defines the general requirements concerning the ability to perform testing and calibration, and it requires not only the operation of management systems such as those specified in ISO9001, but also strict analytical ability. This accreditation enables the users of manufacturing various industrial silver products to establish an ever more reliable analysis infrastructure for silver.

The rise in precious metal prices in recent years has led to silver being extracted not only from mines but also recycled items, making the development and establishment of more accurate and rapid analysis methods a pressing issue. Currently, silver is used in a wide range of products in industrial fields, such as bonding material, contact material, solar cell electrodes and sputtering targets. In particular, bonding material made of high-purity silver is used in advanced industrial products such as power devices, power LEDs (light emitting diodes) and MEMS (microelectromechanical systems), for which markets are beginning to

expand on a large scale. It has been confirmed that the function of such products is affected if they contain even trace amounts of certain elements, and both customer demand and market requirements for silver analysis are increasing.

#### ■ Obstacles to silver analysis

To dissolve silver for analysis, nitric acid is used instead of aqua regia<sup>(\*)3</sup>, which is generally used for dissolving other precious metals. This is because dissolving silver in aqua regia produces silver chloride which may hinder the operation for determining the grade of silver. However, if silver which contains gold as a trace element, for instance, is dissolved in nitric acid, gold remains undissolved, thus making the analysis of silver more difficult than other precious metals.

That is why in recent years Tanaka Kikinzoku Kogyo has been using a method that establishes the purity of silver through the subtraction method by assessing, via an ICP Optical Emission Spectrometer<sup>(\*)4</sup>, a solution in which silver is dissolved with nitric acid and another solution in which indissoluble elements with nitric acid are dissolved using a mixture of hydrochloric acid and nitric acid. However, the problem with this method was that errors may increase when the concentration of impurities is low. Further improvement in analysis technology to define the content of every element was necessary.

Tanaka Kikinzoku Kogyo has worked on the optimization of silver analysis technology to resolve such issues. Through these approaches, the Company was able to improve the accuracy of silver analysis when there are low concentrations of impurities by investigating the pretreatment conditions and ICP Optical Emission Spectrometer measurement conditions, leading to ISO/IEC17025:2005 accreditation for the entire analysis process including the method of dissolving silver. In this connection, by exchanging opinions with an incorporated administrative agency Japan Mint Bureau the Company was able to extend its knowledge of silver analysis methods.

By obtaining the accreditation, Tanaka Kikinzoku Kogyo has achieved an important goal in the analysis of precious metals, acquiring ISO/IEC17025:2005 accreditation for analysis technology for gold which has particularly high turnover among precious metals, platinum, palladium and silver. The Company will continue to strive for quality improvement to realize the world standard for analysis technology and quality assurance of these precious metals in the future.

## ISO/IEC17025:2005 Certificates



**\*1 ISO/IEC17025:2005**

An international standard that defines the general requirements for the competence of testing and calibration. In addition to the operation of a management system like those specified in ISO 9001, the standard requires that a relevant laboratory should be technically qualified and have an ability to produce valid results.

**\*2 The 23 Important substances defined as impurities in silver by the London Bullion Market Association (LBMA), which is the world's most prestigious in gold and silver markets, are aluminum, gold, arsenic, bismuth, calcium, cadmium, cobalt, chromium, copper, iron, indium, magnesium, manganese, nickel, lead, palladium, platinum, antimony, selenium, silicon, tin, tellurium and zinc. In addition to these 23 elements, this accreditation also covers 14 other elements: boron, gallium, germanium, iridium, molybdenum, sodium, phosphorus, rhenium, rhodium, ruthenium, titanium, thallium, vanadium and zirconium.**

**\*3 Aqua regia**

Liquid which mixed concentrated hydrochloric acid and concentrated nitric acid in a ratio of 3:1 by volume.

**\*4 ICP Optical Emission Spectrometer**

An analysis device able to identify and quantify elements dissolved in a solution by analyzing the optical spectrum emitted when elements that are atomized and excited by putting them into a high-temperature state called plasma return to their ground state.

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

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

Representative: Hideya Okamoto, President & CEO

Founded: 1885

Incorporated: 1918

Capital: 500 million yen

Employees in consolidated group: 3,869 (FY2011)

Net sales of consolidated group: 1.064 trillion yen (FY2011)

Main businesses of the group:

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://www.tanaka.co.jp/english>

■**Tanaka Kikinzoku Kogyo K.K.**

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

Representative: Hideya Okamoto, President & CEO

Founded: 1885

Incorporated: 1918

Capital: 500 million yen

Employees: 1,663 (FY2011)

Sales: 1.036 trillion yen (FY2011)

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 eight core companies in the Tanaka Precious Metals are as follows.

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