

# Palladium Hallmarking in the UK

A bright new opportunity

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## By Robert M. Organ

The Goldsmiths' Company, Assay Office London,  
Goldsmiths' Hall, Foster Lane, London EC2V 6BN, UK;  
E-mail: [robert.organ@assayofficelondon.co.uk](mailto:robert.organ@assayofficelondon.co.uk)

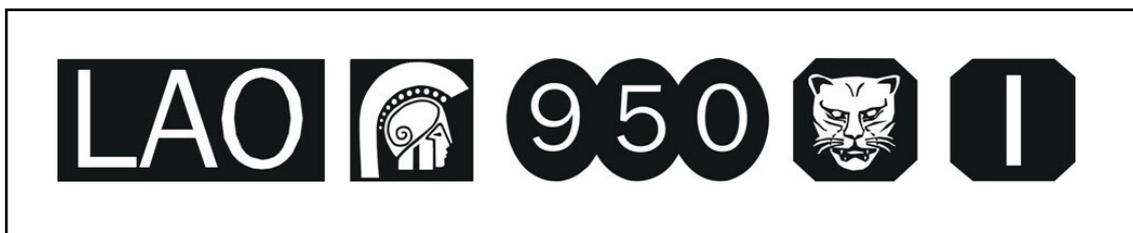
In July 2009, the United Kingdom Hallmarking Act was amended to include palladium alloys into those that need hallmarking (1). The amendment states that from January 2010, it will be compulsory for jewellery items made of palladium alloys to be hallmarked if they are to be sold in the UK, as are gold, silver and platinum.

The introduction of any new metal for hallmarking is an incredibly rare event. Palladium is only the fourth metal in the 700-year history of hallmarking in the UK that has required such treatment, the last being platinum in 1975 (2). The inclusion of palladium into the Act in 2009 might suggest that it is a recent discovery, but in fact it was first described in 1803 by William Hyde Wollaston (3). The real reason for the current level of interest in palladium is a combination of commercial and technical factors which make it highly suitable for jewellery manufacture.

### Palladium for Jewellery Manufacture

Palladium has an atomic number of 46 and lies in the same vertical group of the Periodic Table as nickel and platinum. It is considered a precious metal as it commands a value between that of silver and gold. It is also a noble metal, exhibiting excellent corrosion resistance. Its appearance is naturally white and it is capable of being polished to give a bright lustrous finish. Current palladium alloys are highly malleable, making them particularly useful for setting gemstones, and they can be used with both machine forming and handcrafting techniques (4). This ability to work the alloys easily across a wide variety of forming methods makes them ideal for both mass market production and for designer-makers who focus on the bespoke market.

Palladium has been used in the jewellery industry since 1939, although mainly as an alloying element, notably to 'bleach' gold's natural yellow colour closer to that of platinum. It is only in recent years, with the steep rise in the prices of gold and platinum, that Chinese jewellers have begun producing significant volumes of palladium jewellery. At the time of writing this article, the price of palladium was about a quarter that of platinum and half that of 18 carat gold (5).



The new palladium hallmark showing (left to right): the sponsor's mark for the London Assay Office; the head of Pallas Athena; the millesimal fineness mark for 950 palladium; the leopard's head symbol of the London Assay Office; and the date letter 'I' for the year 2010

Moreover its density is about half of that of platinum, and three quarters that of 18 carat gold. The result is that an object made of palladium would cost about eight times less than an equivalently sized object made of platinum and nearly three times less than one in 18 carat gold. The lightness of palladium compared with platinum and gold also has the benefit of allowing larger, more flamboyant pieces of jewellery to be made.

The interest has since spread westwards with jewellers in the USA, mainland Europe and the UK starting to appreciate the advantages of this 'new' metal with its exciting potential for the jewellery industry. With a retail price point between those of 14 carat and 18 carat gold, palladium alloys are seen as an excellent alternative to white gold, where their natural whiteness means that rhodium plating is not necessary.

#### Guarantee Offered by Hallmarking

In response to the growing use of palladium alloys, the UK assay offices through the British Hallmarking Council and National Measurement Office encouraged the UK Government to amend the Hallmarking Act to include palladium alloys. Regulatory impact assessments concluded that the guarantee offered by hallmarking would bolster confidence in the eyes of both the consumer and the jewellery trade, leading to increased sales. The assay offices at Birmingham, Edinburgh, London and Sheffield began marking as soon as the Hallmarking Act was amended and are pleased to report that their efforts to bring palladium alloys into the realm of those that require hallmarking were well justified: between July 2009 and September 2009, over 27,000 palladium articles were hallmarked. It took platinum many years to reach this level!

The standards of fineness that are available for hallmarking palladium are 500, 950 and 999. However, it is expected that 950 will be the most common standard.

A traditional symbol of the head of Pallas Athena, the Greek goddess of war, wisdom and craft will also be available.

#### References

- 1 The Hallmarking Act 1973 (Application to Palladium) Order 2009, Statutory Instruments, No. 2040, 21st July 2009, The Stationery Office Ltd, London, UK, 2009
- 2 *Platinum Metals Rev.*, 1975, **19**, (2), 63
- 3 W. P. Griffith, *Platinum Metals Rev.*, 2003, **47**, (4), 175
- 4 'Palladium – An Introduction', Edition II, Johnson Matthey, New York, USA, 2009: <http://www.johnsonmattheyny.com/technical/palladium/TechManual> (Accessed on 1st December 2009)
- 5 Kitco, Inc, Past Historical London Fix: <http://www.kitco.com/gold.londonfix.html> (Accessed on 30th October 2009)

#### The Author



Dr Robert Organ is Deputy Warden of the Goldsmiths' Company at the Assay Office London, UK. He joined the Assay Office in 2000 as the Superintendent Assayer. Prior to this he was Section Leader in the Department of Process and Quality Development at Horsell Graphic Industries Ltd and a Project Leader and Principal Scientist at Crown Cork & Seal Company, Inc. Robert read Materials Science and Metallurgy at Cambridge University, UK, where he also completed a PhD. He also holds an MBA from Reading University, is a professional member of the Institute of Metal Finishing and a Chartered Engineer with the Institute of Materials, Minerals and Mining.