Despite being one of the largest markets for gold, most of the gold reference material is imported in India to check the purity of gold. At present, the goldsmiths use certified reference material from the National Institute of Standards and Technology (NIST) of the US.

India now has its own standard bar of gold – BND 4201. It is the reference material for gold of 9999 fineness and can be used to verify the purity of gold sold in shops. Bharatiya Nirdeshak Dravya (BND 4201) is India’s first home grown high purity gold reference standard. It will mean that Indian jewelers will no longer need to import gold bars to check the purity of ornaments.

This high purity gold reference standard has been developed through a collaboration among the India Government Mint (IGM), Bhabha Atomic Research Centre (BARC), CSIR-National Physical Laboratory (CSIR-NPL) and National Centre for Compositional Characterisation of Materials.

The bars will be made by the IGM, a unit of Security Printing and Minting Corporation of India Ltd. The purity of the bars would be certified by CSIR-NPL while the technical aspects such as measurements would be the responsibility of BARC.

The new bars being developed were 99.99% pure with impurities of only 100 parts per million. The bar weighs 20 grams with the dimension of a Parle-G biscuit. So far, 200 gold bars each 35 mm long, 15 mm wide and 1.5 mm thick have been made, informs Dr. D.K Aswal, Director, CSIR-NPL. He adds that the measurement of the high purity BND-4201 is traceable to SI units; therefore the possibilities of exporting to other economies are very high.

These bars could be a major source of revenue in future. The gold bar would be 25% cheaper than the imported version and will save foreign exchange as well as minimise dependency on foreign countries.

Gold reference standard is indispensable in gold and jewellery hallmarking. This will also be useful for collection and purity testing centers to certify the purity of gold deposits and assumes greater importance in the gold monetisation scheme of the Indian government.

Standard gold bars of standard fineness and purity of 10 g, 50 g, 100 g, 500 g and 1000 g denominations will be produced by the authority. Development of this reference material indigenously will add to the Make in India campaign. It will also help jewelers to move towards more conductive methods rather than conventional fire assay methods for testing purity of gold, which is time consuming and environment destructive as poisonous gases are released.