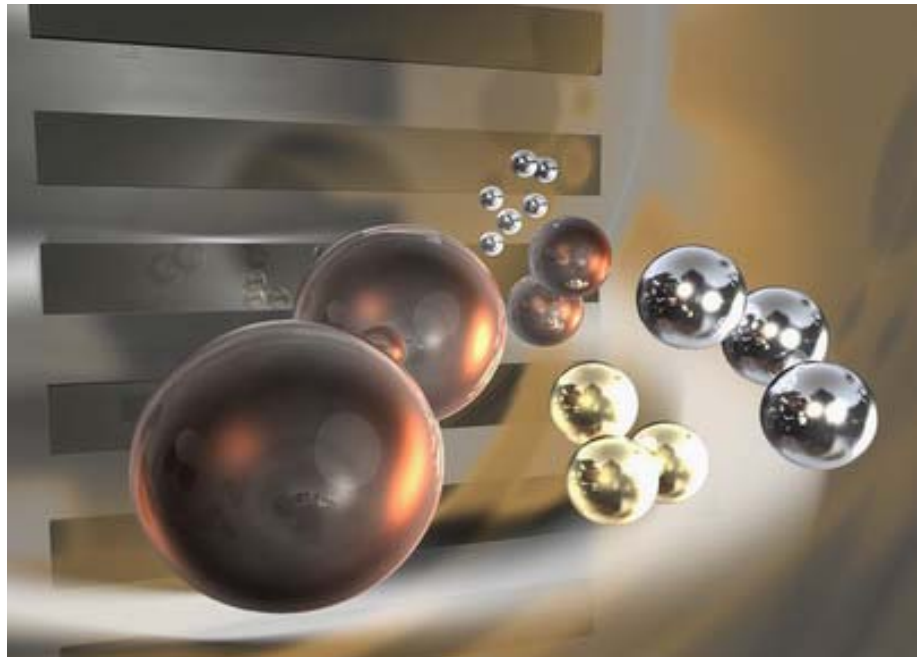


## Precision Spheres

Spheres of precious metal or precious metal alloys which are connected to the carrier material by welding or pressing, have more and more replaced the contact rivets commonly used in conventional contact designs.

Contact spheres offer a complementary method to the contact parts which use cuttings of precious metal wires or bimetal profiles.

For decades Heraeus has been manufacturing spheres of precious metals or precious metal alloys for other applications, e.g. fountain-pens, and it has always been essential to ensure perfect roundness and close tolerances in diameter. From the beginning, high quality and precision have therefore been the guidelines for design and installation of the appropriate production equipment.



### Advantages

Heraeus precision contact spheres offer the following advantages:

- Their transport to the welding unit of the production equipment is relatively easy, since no positioning is necessary.
- They form an excellent contact bridge to the carrier material and provide a favourable contact resistance behaviour.
- The welded joint has high mechanical strength and ensures an optimum regarding transfer resistance.
- The spheres have high thermal conductivity reducing the electrical wear to a minimum.
- The spheres can be formed by coining after the welding process.

### Materials

It is well known that precious metals and their alloys fulfill best the different requirements with regard to electrical, chemical, thermal and mechanical properties. Most commonly used are therefore alloys based on gold, silver, palladium and platinum.

Heraeus also supplies spheres of base metals with or without electrolytic surface treatment.

### Quality Assurance

The method of quality assurance as used at Heraeus covers all processes from alloy melting through the various production steps to the final product. Thus defects can be detected and eliminated at an early stage. In addition, our metal and contact laboratories offer their services regarding metallurgical investigations and selection of the most suitable alloy.

Heraeus precision contact spheres are free from surface contamination.

The packing is chosen to avoid mechanical damage and contamination during transport and storage.

### Sizes and tolerances

Heraeus precision contact spheres are commonly produced in sizes between 0.2 mm and 3.5 mm. The standard tolerances of diameter can be taken from the table on the right. In special cases closer tolerances can be agreed upon.

Diameter of contact spheres mm	Standard tolerances ± mm
0.2...0.5	0.01
0.6...2.0	0.02
2.1...2.5	0.03
2.6...3.5	0.05

Other diameters and tolerances can be agreed upon

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