

## Cermets by Heraeus

Cermet Pins made of Molybdenum and Alumina are used in several lighting applications, such as current feedthroughs into the arc tube of ceramic discharge lamps. The cermet composite material exhibits a thermal expansion behaviour similar to that of pure  $Al_2O_3$  together with a good electrical conductivity and a high corrosion resistance towards aggressive media like metal halides contained in the filler gas of metal halide discharge lamps. This combination of properties makes Mo/ $Al_2O_3$  cermets a highly suitable material for the application as current supply in metal halide lamps where they are exposed to high thermal loading under simultaneous chemical attack. Heraeus is offering such Cermet Pins as a complement product for its products for the lighting industry.



### Advantages

Heraeus Cermets offer the following features:

- Adjusted thermal expansion behaviour similar to that of pure alumina, reducing thermo-mechanical stresses
- Good electrical conductivity guaranteeing a sufficient current supply into the ceramic arc tube
- High chemical stability towards corrosive metal halides contained in the filler gas of ceramic metal halide lamps
- Good reproducible weld ability due to homogeneous microstructure
- Moderate thermal conductivity
- Tight tolerances



### Sizes and tolerances

Heraeus Mo Cermets are commonly produced in sizes between 0.6 mm and 2.0 mm. The standard tolerances of diameter can be taken from the table on the right. In special cases closer tolerances can be agreed upon. Other diameters available upon request.

### Quality Assurance

The method of quality assurance as used at Heraeus covers all processes from powder processing 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 Mo/ $Al_2O_3$  Cermets are free from surface contamination.

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

### Dimensions / Properties of Cermets

Dia 0.6 – 1.0 mm	± 0.02 mm
Dia 1.0 – 2.0 mm	± 0.03 mm
Length	± 0.10 mm
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Bending Strength	> 360 MPa
Electrical Conductivity	> 2.7 m/Ωmm <sup>2</sup>
Thermal Expansion Coefficient	$8.0 \times 10^{-6} K^{-1}$
Carbon Content	< 30 ppm
Relative Density	> 97,5 %

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