



## Orobraz 990 Gold Brazing Alloy

Orobraz 990 is manufactured to the highest quality to meet the needs of the aerospace, thermionic component, nuclear and chemical industries. Its properties and uses are similar to those of Orobraz 950. It exhibits excellent high temperature strength up to 500°C and shows good resistance to oxidation at elevated temperatures. Orobraz 990 also offers good corrosion resistance in many chemical environments. This alloy has been used in the manufacture of aero-engine components for its high temperature properties. Orobraz 990 is suitable for brazing in a vacuum because it contains no volatile elements. Grade 1 Orobraz 990 has impurity levels which make it suitable for brazing components that operate in an ultra high vacuum, such as vacuum tube devices. It is suitable for step brazing in complex assemblies.

Orobraz 990 differs from Orobraz 950 in that it has a 40°C melting range and consequently typical joint gaps are 0.075-0.2mm depending on parent metals and joint configuration.

**Composition:** 75% Gold, 25% Nickel

**Conforms to:** BS EN 1044 1999 AU106, AU106V Grade 1 (formerly BS 1845 (1984) AU6V),

**Melting range:** 950-990°C

**Impurity limits for AU106** (%by mass, max.): - Al 0.0010, P 0.008, Ti 0.002, Zr 0.002 total of all impurities 0.15%.

**Impurity limits for AU106V Grade 1** (%by mass, max.): - C 0.0005, Cd 0.001, P 0.002, Pb 0.002, Zn 0.001, Mn 0.001, In 0.002, all other elements where vapour pressure at 500°C is  $>1.3 \times 10^{-10}$  bar 0.001 each, limited to 0.010% total (inc. Cd, Pb and Zn).

### What Materials can be joined with Orobraz 990?

Typical applications are for brazing stainless steel, high temperature nickel alloys and super alloys. It can be used for joining copper to these alloys in thermionic valve devices.

### Is a flux required?

Orobraz 990 is most often used for brazing in reducing atmosphere or vacuum and under these conditions no flux is used. It can also be used in air with flame or induction heating if a suitable flux is employed (consult JM Technical department).

### Product Availability

Wire	0.25mm to 3mm
Foil	Widths from 2mm to 100mm, 0.08mm to 0.5mm thick
Braze-pastes	On request
Powder	Various particle sizes
Other	Rings. Discs and preformed shapes made from foil

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