

Technical data

Gold brazing alloy

OrobrazTM 845 Gold brazing alloy

Product description

Orobraz 845 is a gold-copper-silver brazing filler metal and is suitable for use in the fabrication of Vacuum Tube / Thermionic Valve Devices. While both Gold and Copper have low vapor pressures under the elevated temperature and levels of Vacuum seen in such equipment, silver is more volatile and therefore this filler metal should not be used where evaporation of silver could be a problem.

Silver has been added to the basic Gold Copper composition to produce a lower melting point alloy than is possible within the binary Gold Copper system. The filler metal has a short melting range and is free flowing forming small radius smooth fillets at the joint edges. Typical joint gaps are between 0.025-0.1mm depending on parent materials and joint configuration. It can produce ductile joints without excessive inter-alloying / erosion of the parent metals which is advantageous when brazing thin walled structures

Composition: 60% Gold, 20% Copper, 20% Silver

Conforms to:

Melting range: 835-845 °C

Impurity limits for Orobraz 845 (%by mass, max.): - Al 0.0010, P 0.008, Ti 0.002, Zr 0.002 total of all impurities 0.15%.

Impurity limits for Orobraz 845 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 >1.3x10⁻¹⁰ bar 0.001 each, limited to 0.010% total (inc.Cd, Pb and Zn)

Uses for this product

Typical applications are for brazing thermionic valve devices and in joining copper, stainless steel, nickel, iron, cobalt, molybdenum, niobium, tungsten and their alloys.

Conditions for use

Orobraz 845 is most often used in reducing atmosphere furnace brazing applications. Vacuum brazing is possible but it should be noted that silver will volatilize under normal vacuum brazing conditions and it is therefore recommended that a Partial Pressure Technique is adopted to suppress the evaporation of silver. No flux is required when reducing atmosphere or vacuum brazing. The alloy 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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