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GOLD BRAZE 25

TECHNICAL DATA

NOMINAL COMPOSITION

Gold	25.0% ± 1.0
Copper	37.0% ± 1.0
Palladium	15.0% ± 1.0
Nickel	10.0% ± 1.0
Manganese	13.0% ± 1.0
Zinc and Cadmium, each	0.001% max.
Lead and Phosphorus, each	0.002% max.
Carbon	0.005% max.
Other volatile elements, each*	0.001% max.
Volatile elements total (incl. Cd, Zn, Pb)	0.010% max.
Non-Volatile Elements Total	0.05% max.

*Elements with a vapor pressure higher than 10^{-7} mm Hg at 932°F (such as Mg, Sb, K, Li, Ti, S, Cs, Rb, Se, Te, Sr, and Ca)

PHYSICAL PROPERTIES

Color	Metallic Grey
Solidus	1788°F (970°C)
Liquidus	1855°F (1013°C)
Recommended Brazing Temperature	1905-1955°F (1041-1068°C)
Density	10.5 g/cm^3
Young's Modulus	132 GPa
Yield Strength	411 MPa
Tensile Strength	770 MPa
Thermal Conductivity	12.5 W/(m•K)
Thermal Coefficient of Expansion	18.8x10^{-6}/°C
Electrical Resistivity	606x10^{-9} ohm•m
Electrical Conductivity	165x10^6/(ohm•m)
Hardness	212 KHN
Elongation	31%

USES

GB25 is typically used for joining PCD to steel or carbide in tooling applications. It may also exhibit successful wetting and joining for a variety of other surfaces due to its diverse composition.

BRAZING CHARACTERISTICS

GB25 can be brazed by a variety of different processes including induction and atmospheric furnace brazing. It is important to ensure that the base components are properly cleaned prior to the application of the braze alloy. A joint clearance of 0.002-0.004 in. is recommended for brazing depending on base alloy type and joint configuration. The precious metal content of GB25 offers improved corrosion resistance and due to its narrow melt range GB25 exhibits free flowing characteristics.

PROPERTIES OF BRAZED JOINTS	The properties of a brazed joint are dependent upon the base metal, joint design and brazing technique. For controlled atmosphere brazing or vacuum brazing the recommended radial joint clearance for gold base alloys fall within 0-0.002 in. (0-0.05 mm)
SPECIFICATIONS	Goldbraze 25 conforms to: NA
AVAILABLE FORMS	Strip, engineered preforms, specialty preforms, powder and paste
SAFETY INFORMATION	The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting." For more complete information refer to the Material Safety Data Sheet for GB25.

Individuals requiring further information and Engineering Specification Documents may wish to contact the Engineering Society for Advanced Mobility, Land Sea Air and Space, The Society of Automotive Engineers http://www.sae.org/ (SAE AMS) or The American Welding Society (AWS) http://aws.org/

NOTE: