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GOLD BRAZE 5050 (BVAu-10) TECHNICAL DATA

NOMINAL COMPOSITION

Gold	50.0% ± 0.5
Copper	Balance
<u>Vacuum Grade Trace Elements</u>	
Cadmium	0.001% max.
Zinc	0.001% max.
Phosphorus	0.002% max.
Lead	0.002% max.
Carbon	0.005% max.
Other volatile elements, each*	0.001% max.
Volatile elements total	0.010% max.
Total non-volatile elements (Grade 1)	0.01% max.
Total non-volatile elements (Grade 2)	0.05% max.

*Elements with a vapor pressure higher than 10^{-7} torr at 932°F (such as Mg, Sb, K, Li, Tl, S, Cs, Rb, Se, Te, Sr, and Ca) are limited to 0.001% each for Grade 1 and 0.002% for Grade 2.

PHYSICAL PROPERTIES

Color	Red Brass
Solidus	1751°F (955°C)
Liquidus	1778°F (970°C)
Density (Troy. oz/in³)	6.34
Yield Strength (MPa)	613
Tensile Strength (MPa)	658
Elongation (%)	38
Thermal Conductivity (W/m•K)	33
CTE (x10⁻⁶/°C)	19.2
Electrical Conductivity (x10⁶/ ohm•m)	9.7
Electrical Resistivity (x10⁻⁹ ohm•m)	103
Recommended Brazing Temperature	1778- 1868°F (970°- 1020°C)

USES

GOLDBRAZE 5050 can be used on any of the common ferrous and non-ferrous alloys. This alloy exhibits good wetting characteristics on metallized ceramics. Typical applications include brazing of electron tubes, vacuum tubes, radar devices, and wave guides in the electronic industry. This alloy is readily used in the brazing of ceramic to metal seals.

**BRAZING
CHARACTERISTICS**

GOLDBRAZE 5050 is generally used in reducing, vacuum or inert atmospheres. It is a less ductile alloy than standard gold-copper-nickel alloys. The composition of the alloy allows for use in applications where braze filler metals low in volatile constituents are required. This alloy exhibits free flowing characteristics due to its narrow melt range.

**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

Gold Braze 5050 conforms to: Unified Numbering System (UNS) P00503, American Welding Society (AWS) A5.8/A5.8M BVAu-10 Grade 1 and Grade 2

AVAILABLE FORMS

Wire, 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 Safety Data Sheet for Gold Braze 5050.

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:

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