

## PREMABRAZE<sup>®</sup> 399

### ***NOMINAL COMPOSITION***

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Gold	37.5% ± 0.5%
Copper	Remainder
Zinc	0.001% Max
Cadmium	0.001% Max
Lead	0.002% Max
Phosphorus	0.002% Max
Carbon	0.005% Max
Other high vapor pressure elements each <sup>(1)</sup>	0.001% Max
Total all high vapor pressure elements (Including zinc, cadmium, and lead)	0.010% Max
Total all other impurity elements	0.010% Max

<sup>(1)</sup> Elements with a vapor pressure higher than  $10^{-7}$  Torr ( $1.3 \times 10^{-5}$  Pa) at 932°F (500°C)

### ***PHYSICAL PROPERTIES***

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Color	Red Brass
Melting Point (Solidus)	1815°F (991°C)
Flow Point (Liquidus)	1860°F (1016°C)
Brazing Temperature Range	1860°F - 1960°F (1016°C - 1071°C)
Specific Gravity	11.2
Density (Troy oz/in <sup>3</sup> )	5.90
Electrical Conductivity (%IACS) <sup>(2)</sup>	20.3
Electrical Resistivity (Microhm-cm)	8.50

<sup>(2)</sup> IACS = International Annealed Copper Standard

### ***PRODUCT USES***

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Premabraz 399 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, wave guides in electronic industry.

### ***BRAZING CHARACTERISTICS***

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Premabraz 399 is generally used in reducing, vacuum, or inert atmosphere. 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. Due to its narrow plastic range, Premabraz 399 exhibits free flowing characteristics.

### ***PROPERTIES OF BRAZED JOINTS***

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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 0.000 in. - 0.002 in. (0.00 mm - 0.05 mm) range.

## ***AVAILABLE FORMS***

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Wire, strip, engineered preforms, specialty preforms per customer specification.

## ***SPECIFICATIONS***

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Premabraz 399 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAu-1
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BAu-1
- International Organization for Standardization (ISO) 17672 Au 375a
- British Standard (BS) EN 1044 Au 103

## ***APPLICABLE PRODUCT CODE(S)***

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The applicable Lucas-Milhaupt product code(s) for this technical data sheet: A00000857, Legacy Code: 18-399.

## ***SAFETY INFORMATION***

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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 Premabraz 399.

## ***WARRANTY CLAUSE***

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