

## PREMABRAZE<sup>®</sup> 631

### ***NOMINAL COMPOSITION***

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Silver	63.0% ± 0.5%
Copper	Remainder
Indium	10.0% ± 0.5%
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	0.01% Max

<sup>(1)</sup> Elements with a vapor pressure higher than 10<sup>-7</sup> Torr (1.3 x 10<sup>-5</sup> Pa) at 932°F (500°C)

### ***PHYSICAL PROPERTIES***

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Color	Silver White
Melting Point (Solidus)	1265°F (685°C)
Flow Point (Liquidus)	1346°F (730°C)
Brazing Temperature Range	1346°F - 1446°F (730°C - 786°C)
Specific Gravity	9.62
Density (Troy oz/in <sup>3</sup> )	5.07
Electrical Conductivity (%IACS) <sup>(2)</sup>	19.2
Electrical Resistivity (Microhm-cm)	8.97

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

### ***PRODUCT USES***

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Premabraz 631 can be used on any of the common nickel and copper alloys. Typical applications include all types of moderate temperature vacuum systems, in particular in electronic vacuum tube assembly. Premabraz 631 can be used in brazing of metallized ceramics and nickel-cobalt-iron components.

### ***BRAZING CHARACTERISTICS***

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The indium content in Premabraz 631 improves wetting of iron and nickel base alloys. In case of nickel base alloys, cracking may occur unless the brazing is rapid and overheating is avoided. Nickel base alloys should be stress-relieved before brazing. On silver base or copper base alloys, the wettability of Premabraz 631, is comparable to silver-copper systems.

### ***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 silver 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, powder and paste.

## ***SPECIFICATIONS***

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Premabraz 631 alloy conforms to the following specifications: N/A

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

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The applicable Lucas-Milhaupt product code(s) for Premabraz 631: 18-631.

## ***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 Safety Data Sheet for Premabraz 631.

## ***WARRANTY CLAUSE***

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