

PREMABRAZE[®] 178

NOMINAL COMPOSITION

Palladium	36.0% ± 1.0%
Chromium	10.5% ± 1.0%
Nickel	Remainder
Boron	2.5% - 3.25%
Silicon	0.25% - 1.0%
Iron	0.50% Max
Carbon	0.06% Max
Other Elements (Total)	0.15% Max

⁽¹⁾ Elements with a vapor pressure higher than 10⁻⁷ torr at 932°F (500°C) such as Mg, Sb, K, Li, Ti, S, Cs, Rb, Se, Te, Sr and Ca

PHYSICAL PROPERTIES

Color	Silver White
Melting Point (Solidus)	1510°F (821°C)
Flow Point (Liquidus)	1750°F (954°C)
Brazing Temperature Range	1750°F - 1850°F (954°C - 1010°C)
Specific Gravity ⁽²⁾	8.67
Density (Troy oz/in ³) ⁽²⁾	4.57
Electrical Conductivity (% IACS) ⁽³⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽²⁾ Density and specific gravity values were calculated using empirical data per each alloy constituent.

⁽³⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Premabraz 178 can be used on any of the common ferrous and non-ferrous alloys. Due to its low vapor pressure compared to standard silver base filler metals, Premabraz 178 is suitable for use in all vacuum applications such as electronic valve construction, and vacuum tube construction in electronic industry. In aerospace industry, Premabraz 178 has been used in brazing of aircraft engine components.

BRAZING CHARACTERISTICS

At elevated temperatures, due to its Palladium and Chromium content, Premabraz 178 exhibits high corrosion and oxidation resistance properties.

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 nickel – palladium – chromium braze alloys fall within 0.000 in. - 0.003 in. (0.00 mm - 0.08 mm.).

AVAILABLE FORMS

Strip, engineered preforms, specialty preforms per customer specification, powder and paste.

SPECIFICATIONS

Premabraz 178 alloy conforms to the following specifications: N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 69-178.

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 Premabraz 178.

WARRANTY CLAUSE

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