

Lucas-Milhaupt Premabraz 131 Gold Based Brazing Alloy

Category : Metal , Nonferrous Metal , Precious Metal , Gold Alloy , Solder/Brazing Alloy

Material Notes:

Applications: Premabraz 131 can be used on any of the common nickel- and iron base heat-resistant alloys, such as in jet engines, etc. Because of its low penetration of the base metal, it is well suited for brazing thin section, such as thin-wall tubing or electronic vacuum tubes. It has also been used extensively for nuclear power applications, except in high flux regions and in contact with such liquid metals as sodium and potassium. **Characteristics:** Premabraz 131 wets a wide range of high temperature iron and nickel based alloys such as the stainless steels, A286, Inconel and Inconel X very well. It does not alloy excessively with these materials nor produce the severe intergranular penetration normally associated with the nickel based brazing alloys contained boron. A minimum brazing temperature of 1800EF (980EC) is suggested for furnace brazing in hydrogen or dissociated ammonia having a -40EF dew point or drier on 300 and 400 series stainless steels which do not contain additions of Ti or Al. Stainless steels of the 17-7 PH variety require dew points of -70EF or drier for furnace brazing. Brazing is done in inert atmospheres or in vacuum. For torch brazing, protection with Handy Hi-Temp Flux is recommended. Where base metals containing elements which produce refractory oxides are encountered, Handy Hi-Temp Flux Boron Modified will promote better wetting. Joint clearances of 0.0015" - 0.003" are normally suggested. Gold and nickel are completely soluble in all proportions at temperatures above 1490EF (810EC) and this specific composition (82% Au- 18% Ni) represents the minimum in this system so that the solidus (melting point) and the liquidus (flow point) are identical. Normally, Premabraz 131 would not be used for joining copper based and silver based alloys. In addition to have a flow point very close to the melting point of silver, and above that of the silver-copper eutectic, it would alloy quite readily with copper based alloys. **Specifications:** Premabraz 131 conforms to: AWS A5.8 BVAu-4, Grade 1 Information provided by Lucas-Milhaupt, Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Lucas-Milhaupt-Premabraz-131-Gold-Based-Brazing-Alloy.php

Physical Properties	Metric	English	Comments
Specific Gravity	15.82 g/cc	15.82 g/cc	

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	427 MPa @Temperature 23.0 Â°C	62000 psi @Temperature 73.4 Â°F	
Tensile Strength, Ultimate	138 MPa @Temperature 871 Â°C	20000 psi @Temperature 1600 Â°F	Type 304 Stainless Steel butt joint
	276 MPa @Temperature 649 Â°C	40000 psi @Temperature 1200 Â°F	Type 304 Stainless Steel butt joint
	345 MPa @Temperature 427 Â°C	50000 psi @Temperature 800 Â°F	Type 304 Stainless Steel butt joint

Thermal Properties	Metric	English	Comments
Melting Point	950.0 Â°C	1742 Â°F	
Solidus	950.0 Â°C	1742 Â°F	Melting Point
Liquidus	950.0 Â°C	1742 Â°F	Flow Point

Component Elements Properties	Metric	English	Comments
Cadmium, Cd	<= 0.0010 %	<= 0.0010 %	
Carbon, C	<= 0.0050 %	<= 0.0050 %	
Gold, Au	81.5 - 82.5 %	81.5 - 82.5 %	
Lead, Pb	<= 0.0020 %	<= 0.0020 %	
Nickel, Ni	17.338 - 18.45 %	17.338 - 18.45 %	
Other, each	<= 0.0010 %	<= 0.0010 %	
Other, total	<= 0.15 %	<= 0.15 %	
Phosphorous, P	<= 0.0020 %	<= 0.0020 %	
Zinc, Zn	<= 0.0010 %	<= 0.0010 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000293 ohm-cm	0.0000293 ohm-cm	

Processing Properties	Metric	English	Comments
Processing Temperature	951.7 - 1010 Â°C	1745 - 1850 Â°F	Brazing Range

Descriptive Properties	Value	Comments
Color	Nickel Gray	

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