LucasMilhaupt®
A Handy & Harman Company
Global Brazing Solutions®

Technical Data Sheet

SILVALOY® 502
(BRAZE™ 502 & SILVALOY® B50)

NOMINAL COMPOSITION

Silver	50.0% ± 1.0%
Copper	Remainder
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Silver White
Melting Point (Solidus)	1435ºF (780ºC)
Flow Point (Liquidus)	1600ºF (870ºC)
Brazing Temperature Range	1600ºF - 1800ºF (870ºC - 980ºC)
Specific Gravity	9.66
Density (Troy oz/in^3)	5.09
Electrical Conductivity (%IACS) [(3)]	78.0
Electrical Resistivity (Microhm-cm)	2.20

[(3)] IACS = International Annealed Copper Standard

PRODUCT USES

Silvaloy 502 is generally used to join silver, copper and nickel base alloys in reducing or inert atmospheres or vacuum. It is also widely used to join metallized ceramics to metals in vacuum.

BRAZING CHARACTERISTICS

Silvaloy 502 is a silver-copper composition alloy similar to Silvaloy 721 (BAg-8) with a wide melting range where better gap filling capabilities may be required. On either silver or copper base alloys, Silvaloy 502 may exhibit a decreased in fluidity and an increased re-melt temperature due to the solution of either silver or copper in the eutectic. Brazing time and temperature should be minimized to prevent excessive diffusion and erosion of the base metal.

This filler metal has limited wetting ability on iron and/on nickel base alloys. The wetting ability it does have is derived from its copper content. Both iron and nickel have practically no solubility in silver, while nickel is readily soluble in copper and the solubility of iron in copper is sufficient to provide wetting. It is an observed fact that the wetting obtained in good hydrogen atmospheres is superior to that derived from flux protection.

AVAILABLE FORMS

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

SPECIFICATIONS

Silvaloy 502 alloy conforms to the following specifications: N/A

Lucas-Milhaupt, Inc. • 5656 S. Pennsylvania Ave • Cudahy, WI 53110 • Phone: 414.769.6000 • Fax: 414.769.1093 • www.lucasmilhaupt.com

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 32-502, 489.

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 Silvaloy 502.

WARRANTY CLAUSE

Lucas-Milhaupt, Inc. believes the information contained herein to be reliable. However, the information is given by Lucas-Milhaupt, Inc. without charge and the user shall use such information at its own discretion and risk. This information is provided on an "AS IS" AND "AS AVAILABLE" basis and Lucas-Milhaupt, Inc. specifically disclaims warranties of any kind, either express or implied, including, but not limited to, warranties of title or implied warranties of merchantability or fitness for a particular purpose. No oral advice or written or electronically delivered information given by Lucas-Milhaupt, Inc. or any of its officers, directors, employees, or agents shall create any warranty. Lucas-Milhaupt, Inc. assumes no responsibility for results obtained or damages incurred from the use of such information in whole or in part.

Lucas-Milhaupt, Inc. • 5656 S. Pennsylvania Ave • Cudahy, WI 53110 • Phone: 414.769.6000 • Fax: 414.769.1093 • www.lucasmilhaupt.com