

SILVALOY[®] 505 FLUX COATED ROD **(BRAZE[™] 505 FLUX COATED ROD)**

GENERAL DESCRIPTION

Silvaloy 505 Flux Coated Rod consists of a .062 in diameter filler rod that is coated with a precise coating of flux to a final diameter of 0.125 in. This product is available in rods for hand feed applications.

Some of the primary advantages of coated products include:

- It simplifies the brazing process by eliminating the manual fluxing operation; this also reduces flux exposure to your brazing personnel.
- Joint quality and throughput can be improved due to the consistent application of flux and filler metal.
- Reduces heating time and secondary post braze operations, increasing productivity and throughput
- Improved strength due to a reduction in flux inclusions at the joint interface
- Reduces the flux in your wastewater effluent by as much as 50-75%

NOMINAL COMPOSITION

Silver	50.0% ± 1.0%
Copper	20.0% ± 1.0%
Zinc	28.0% ± 2.0%
Nickel	2.0% ± 0.5%
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Yellow White
Melting Point (Solidus)	1220°F (660°C)
Flow Point (Liquidus)	1305°F (705°C)
Brazing Temperature Range	1305°F - 1550°F (705°C - 843°C)
Specific Gravity	9.17
Density (Troy oz/in ³)	4.83
Electrical Conductivity (%IACS) ⁽¹⁾	15.0
Electrical Resistivity (Microhm-cm)	11.9

⁽¹⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Silvaloy 505 readily wets nickel and iron base alloys. It is recommended for joining 300 Series stainless steel and will retard interface corrosion in most exposures for which the base metals are suitable. However, for joints on cupro-nickel exposed to salt water at elevated temperatures, zinc-free alloys such as Silvaloy 559, 603, or 630 should be used to avoid joint failure by dezincification. Because this alloy is cadmium-free, it can be safely used on food handling equipment and hospital utensils. The presence of nickel in Silvaloy 505 aids in the joining of small tungsten carbide inserts in cutting tools.

BRAZING CHARACTERISTICS

Silvaloy 505 is very fluid at its flow point and will quickly fill long, narrow joints. Because it has the tendency to liquefy (i.e., separate into low and high melting constituents) when heated slowly, this alloy should be heated quickly through its melting range. Its low flow point will minimize oxidation of the stainless steel during brazing.

PROPERTIES OF BRAZED JOINTS

The properties of a brazed joint are dependent upon numerous factors including base metal properties, joint design, metallurgical interaction between the base metal and the filler metal. In tests at room temperature, torch brazed “wiped” butt joints yielded the following average results:

	Tensile Strength (lbs/in ²)	Elongation (% in 2 in.)
18-8 Stainless Steel (Annealed)	69,500 - 88,000	1.00 - 9.00
1029 Carbon Steel (Cold Worked)	66,000 - 73,300	15.0 - 25.0

AVAILABLE FORMS

Silvaloy 505 Flux Coated Rods are available in the following sizing and packaging:

- .062" Dia (alloy) x 18" x 8 Rods-Plastic Tube (PN 98110)

SPECIFICATIONS

Silvaloy 505 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-24
- Society of Automotive Engineers (SAE) / AMS 4788

APPLICABLE PRODUCT CODE(S)

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

Distribution P/N: 98110.

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 505 Flux Coated Rod.

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.