

SILVALOY® 491 **(BRAZE™ 491, SILVALOY® A49NM)**

NOMINAL COMPOSITION

Silver	49.0% ± 1.0%
Copper	27.5% ± 1.0%
Zinc	20.5% ± 1.0%
Manganese	2.5% ± 0.5%
Nickel	0.5% ± 0.25%
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Yellow White
Melting Point (Solidus)	1238°F (670°C)
Flow Point (Liquidus)	1274°F (690°C)
Brazing Temperature Range	1274°F - 1500°F (690°C - 815°C)
Specific Gravity	9.09
Density (Troy oz/in ³)	4.79
Electrical Conductivity (%IACS) ⁽¹⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽¹⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Because of its excellent wetting properties, Silvaloy 491 is used extensively for brazing tungsten carbide inserts to cutting tools and rock drills. It may be used for joining all types of stainless steels and carbon steels.

BRAZING CHARACTERISTICS

Silvaloy 491 is a cadmium-free, low temperature brazing filler metal used for brazing of tungsten carbides, steels and stainless steels. Because of its high manganese content, Silvaloy 491 may tend to liquate (i.e. separate into low and high melting constituents). However, this can be mitigated by rapidly heating the joint assembly through the melting range of the Silvaloy 491. Handy® Flux may be used with Silvaloy 491, but on some of the more difficult to braze alloys, such as carbides and stainless steels, Handy® Flux Type B-1 assists in producing better wetting of the joint surfaces.

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.

AVAILABLE FORMS

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

SPECIFICATIONS

Silvaloy 491 alloy conforms to the following specifications:

- N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 32-491, 35548.

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 491.

WARRANTY CLAUSE

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