

**SILVALOY<sup>®</sup> 495**  
**(BRAZE<sup>™</sup> 495, SILVALOY<sup>®</sup> A49NM)**

***NOMINAL COMPOSITION***

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Silver	49.0% ± 1.0%
Copper	16.0% ± 1.0%
Zinc	23.0% ± 2.0%
Manganese	7.5% ± 0.5%
Nickel	4.5% ± 0.5%
Other Elements (Total)	0.15% Max

***PHYSICAL PROPERTIES***

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Color	Yellow White
Melting Point (Solidus)	1260°F (682°C)
Flow Point (Liquidus)	1290°F (699°C)
Brazing Temperature Range	1290°F - 1500°F (699°C - 815°C)
Specific Gravity	8.93
Density (Troy oz/in <sup>3</sup> )	4.71
Electrical Conductivity (%IACS) <sup>(1)</sup>	5.70
Electrical Resistivity (Microhm-cm)	30.3

<sup>(1)</sup> IACS = International Annealed Copper Standard

***PRODUCT USES***

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Because of its excellent wetting properties, Silvaloy 495 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***

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Silvaloy 495 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 495 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 495. Handy<sup>®</sup> Flux may be used with Silvaloy 495, but on some of the more difficult to braze alloys, such as carbides and stainless steels, Handy<sup>®</sup> Flux Type B-1 assists in producing better wetting of the joint surfaces.

***PROPERTIES OF BRAZED JOINTS***

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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. Butt joints in the listed metals at room temperature indicate the following typical results:

	Tensile Strength (lbs/in <sup>2</sup> )	Elongation (% in 2 in.)
1020 Carbon Steel	49,000	4.00
1095 Carbon Steel	92,400	7.00
304 Stainless Steel	76,600	15.0

## ***AVAILABLE FORMS***

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

## ***SPECIFICATIONS***

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Silvaloy 495 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-22
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BAg-22
- Federal Specification QQ-B-654 BAg-22
- International Organization for Standardization (ISO) 17672 Ag 449
- British Standard (BS) EN 1044 Ag 502
- Deutsches Institut für Normung (DIN) 8513 Part 3 L-Ag49

## ***APPLICABLE PRODUCT CODE(S)***

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The applicable Lucas-Milhaupt product code(s) for this technical data sheet: A00000136, Legacy Codes: 32-495, 35535.

## ***SAFETY INFORMATION***

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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 495.

## ***WARRANTY CLAUSE***

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