

## **SILVALOY® 559** (BRAZE™ 559, SILVALOY® B56N)

### ***NOMINAL COMPOSITION***

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Silver	56.0% ± 1.0%
Copper	42.0% ± 1.0%
Nickel	2.0% ± 0.5%
Other Elements (Total)	0.15% Max

### ***PHYSICAL PROPERTIES***

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Color	White
Melting Point (Solidus)	1420°F (771°C)
Flow Point (Liquidus)	1640°F (893°C)
Brazing Temperature Range	1640°F - 1800°F (895°C - 982°C)
Specific Gravity	9.76
Density (Troy oz/in <sup>3</sup> )	5.14
Electrical Conductivity (% IACS) <sup>(1)</sup>	51.2
Electrical Resistivity (Microhm-cm)	3.37

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

### ***PRODUCT USES***

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A principal use of Silvaloy 559 alloys has been in flux free brazing of stainless steels in dry hydrogen atmosphere. Silvaloy 559 is zinc free and it would have an advantage over Silvaloy 541 alloy in flux free furnace brazing applications where zinc volatilization is objectionable.

### ***BRAZING CHARACTERISTICS***

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Silvaloy 559 is an intermediate temperature silver brazing alloy similar to Silvaloy 541 (54 Ag, 40Cu, 5 Zn, 1 Ni). It has a rather long melting range (220°F/122°C) so that it will tend to liquate (i.e. separate high from low melting phases) if it is heated slowly through its melting range. However, the long melting range is useful when wide gap joints are brazed as it will bridge the gap and produce larger fillets than alloys with short melting ranges that are more fluid. In rare torch or induction brazing applications or air atmosphere furnace brazing with flux it is recommended that Handy® Flux Type B-1 be used with this alloy.

### ***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.

### ***AVAILABLE FORMS***

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

## ***SPECIFICATIONS***

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Silvaloy 559 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-13a
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BAg-13a
- Society of Automotive Engineers (SAE) / AMS 4765
- Federal Specification QQ-B-654 BAg-13

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

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The applicable Lucas-Milhaupt product code(s) for this technical data sheet: A00000038, Legacy Codes: 32-559, 16808.

## ***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 559.

## ***WARRANTY CLAUSE***

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