

## **SILVALOY<sup>®</sup> 051** **(BRAZE<sup>™</sup> 051, SILVALOY<sup>®</sup> A5)**

### ***NOMINAL COMPOSITION***

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Silver	5.0% ± 0.5%
Copper	58.0% ± 1.0%
Zinc	37.0% ± 1.0%
Other Elements (Total)	0.15% Max

### ***PHYSICAL PROPERTIES***

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Color	Brass Yellow
Melting Point (Solidus)	1545°F (840°C)
Flow Point (Liquidus)	1615°F (880°C)
Brazing Temperature Range	1615°F - 1715°F (880°C - 935°C)
Specific Gravity	8.24
Density (Troy oz/in <sup>3</sup> )	4.34
Electrical Conductivity (%IACS) <sup>(1)</sup>	24.4
Electrical Resistivity (Microhm-cm)	7.06

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

### ***PRODUCT USES***

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The high flow point and narrow melting range of Silvaloy 051 are useful for applications where the brazing and heat treating of ferrous alloys are combined in one operation. The alloy is useful for brazing Nichrome resistance wires because the brazing temperature is high enough to cause stress relief annealing of the Nichrome thus avoiding intergranular cracking.

### ***BRAZING CHARACTERISTICS***

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Silvaloy 051 is a low cost, intermediate temperature silver brazing filler metal suitable for joining various ferrous and non-ferrous alloys that can be heated to 1650°F (900°C) without damage. The relatively high flow point of this filler metal, combined with its high zinc content, tends to cause a rapid alloying of Silvaloy 051 with non-ferrous alloys. For this reason, the time the brazing alloy is kept molten, in contact with the base metal, should be kept to a minimum. In furnace brazing, the heating cycle should be kept short to avoid excessive volatilization of the zinc with resultant formation of pinholes in the brazing alloy layer.

### ***AVAILABLE FORMS***

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

### ***SPECIFICATIONS***

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Silvaloy 051 alloy conforms to the following specifications: N/A

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

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The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 32-051, 21402.

## ***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 051.

## ***WARRANTY CLAUSE***

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