

SIL-FOS[®] 2MS **(SILVALOY[®] 2MS)**

NOMINAL COMPOSITION

Silver	2.0% ± 0.20%
Phosphorus	6.5% ± 0.20%
Silicon	0.0275% ± 0.0125%
Copper	Remainder
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Gray
Melting Point (Solidus)	1190°F (643°C)
Flow Point	1350°F (704°C)
Brazing Temperature Range	1350°F - 1600°F (704°C - 871°C)
Specific Gravity	8.03
Density (Lbs/in ³)	0.290
Electrical Conductivity (%IACS) ⁽²⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽¹⁾ The true liquidus of this alloy is 1465°F (796°C). The alloy will flow freely and make strong joints at 1350°F (704°C).

⁽²⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Sil-Fos 2MS was developed primarily for use on copper, but its use has extended to other non-ferrous copper base alloys. Sil-Fos 2MS is used on refrigeration units, air conditioning, electrical conductors, copper and brass pipe fitting, and other copper and brass type equipment.

BRAZING CHARACTERISTICS

Sil-Fos 2MS is a copper-rich, intermediate temperature alloy that is self-fluxing on copper by virtue of its phosphorus content. The self-fluxing property of this alloy is effective on copper only. With copper base alloys, such as brass or bronze the joints should be fluxed with Handy[®] Flux. Sil-Fos 2MS should not be used on nickel-base or ferrous alloys, as phosphorus reacts with nickel or iron to form brittle compounds at the interface of the joints. Sil-Fos 2MS is recommended where close clearances cannot be maintained or where large fillets are required. This alloy has tendency to liquate if heated slowly through the melting range. This product has been specially formulated to eliminate the green sparking that sometimes occurs during torch brazing of Copper/Phosphorus type braze alloys.

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. Joints made with Sil-Fos 2MS are entirely satisfactory on copper and soft copper alloys if good fit-up and adequate shear area are maintained. If poor fit-up prevails, or shear area is marginal, a lower phosphorus content silver-copper-phosphorus alloy such as Sil-Fos or Sil-Fos 5 may be preferred, particularly if the joints are to be subjected to impact or vibration in service.

CORROSION RESISTANCE

The corrosion resistance of Sil-Fos 2MS is comparable to that of copper except when exposed to sulphur containing compounds, especially at elevated temperatures. Under these conditions Sil-Fos 2MS undergoes progressive deterioration. Exposure to pressurized steam can also result in accelerated corrosion.

AVAILABLE FORMS

Wire, rod, limited engineered preforms, limited specialty preforms per customer specification.

SPECIFICATIONS

Sil-Fos 2MS alloy conforms to the following specifications: N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 35594.

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 Sil-Fos 2MS.

WARRANTY CLAUSE

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