

SIL-FOS[®] 5F **(SILVALOY[®] 5F)**

NOMINAL COMPOSITION

Silver	5.0% ± 0.2%
Phosphorus	6.75% ± 0.25%
Copper	Remainder
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Gray
Melting Point (Solidus)	1190°F (643°C)
Flow Point ⁽¹⁾	1300°F (705°C)
Brazing Temperature Range	1300°F - 1500°F (705°C - 815°C)
Specific Gravity	8.03
Density (lbs/in ³)	0.29
Electrical Conductivity (%IACS) ⁽²⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽¹⁾ The true liquidus for Sil-Fos 5F is 1420°F (771°C). The alloy will flow freely and make strong joints at 1300°F (705°C).

⁽²⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Sil-Fos 5F was developed primarily for use on copper, but its use has extended to other nonferrous copper base alloys. Sil-Fos 5F are used extensively on refrigeration units, air conditioning apparatus, electrical conductors, copper and brass pipe fittings, and other copper and brass equipment.

BRAZING CHARACTERISTICS

Sil-Fos 5F is a copper rich, filler metal that is self-fluxing on copper by virtue of their phosphorus content. Sil-Fos 5F, because of its higher phosphorus content, is more fluid than Sil-Fos 15 when heated rapidly to its flow point. Sil-Fos 5F has less tendency to form large fillets or to fill poorly fitted joints compared to Sil-Fos 15.

The self-fluxing property of the filler metal is effective on copper only. With copper-base alloys, such as brass or bronze, the joints should be fluxed with Handy[®] Flux. Sil-Fos 5F should not be used on nickel-base and iron-base alloys, as the phosphorus reacts with the nickel or iron to form brittle compounds at the interface of the joints.

Sil-Fos 5F has a strong tendency to liquate (i.e. to separate into low and high melting constituents) if heated slowly through its melting range, as normally occurs in furnace brazing. The results in leaving a “skull” of unmelted alloy behind may objectionable from the standpoint of appearance. In furnace brazing it is preferable to pre-place the alloys inside the joint where the skull is not visible. The high phosphorus content of Sil-Fos 5F makes it inherently less ductile than Sil-Fos 15.

AVAILABLE FORMS

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

SPECIFICATIONS

Sil-Fos 5F alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BCuP-7

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 71-052, 28118.

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 5F.

WARRANTY CLAUSE

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