

FOS-FLO®
(FOS-FLO® 7, SILVALOY® 0)

NOMINAL COMPOSITION

Phosphorus	7.00% - 7.50%
Copper	Balance
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Steel Gray
Melting Point (Solidus)	1310°F (710°C)
Flow Point (Liquidus)	1460°F (793°C)
Brazing Temperature Range	1460°F - 1560°F (793°C - 849°C)
Specific Gravity	7.91
Density (lbs/in ³)	0.286
Electrical Conductivity (%IACS) ⁽¹⁾	7.50
Electrical Resistivity (Microhm-cm)	23.2

⁽¹⁾ IACS = International Annealed Copper Standard

PRODUCT USES

Fos-Flo is a low cost brazing filler metal suitable for joining copper to copper and copper to copper alloys where critical impact or vibration stresses are not encountered in service. It should only be used on assemblies where good fit-up can be maintained.

BRAZING CHARACTERISTICS

Fos-Flo is a copper rich, intermediate temperature, brazing filler metal that is free flowing. This alloy is extremely fluid when heated rapidly to its flow point and will penetrate joints with very little clearance. Best results are obtained with joint clearances of 0.001 in. - 0.003 in. (0.025 mm - 0.075 mm). Fos-Flo liquates (i.e. separates into high and low melting constituents) if heated slowly through its melting range. The self-fluxing property of Fos-Flo is effective on copper only. Copper base alloys, such as brass or bronze, may be brazed with Fos-Flo if the joints are coated with HandyFlux®. Fos-Flo should not be used on ferrous metals or nickel base alloys, since the phosphorus produces brittle iron or nickel phosphides at the joint interface.

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 Fos-Flo are entirely satisfactory on copper and 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 filler metal such as Sil-Fos® 15 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 Fos-Flo is comparable to that of copper except when exposed to sulfur compounds and sulfur-containing gas or oil, especially at elevated temperatures. Under these conditions Fos-Flo undergoes progressive corrosive deterioration, and should not be used.

AVAILABLE FORMS

Wire, powder and paste.

SPECIFICATIONS

Fos-Flo alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BCuP-2
- ASME Boiler & Pressure Vessel Code, Sec II-C, SFA-5.8 BCuP-2

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 69-070, 21154, 29967, 35547.

Distribution P/N: 95000, 95011.

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 Fos-Flo.

WARRANTY CLAUSE

Lucas-Milhaupt, Inc. believes the information contained herein to be reliable. However, the information is given by Lucas-Milhaupt, Inc. without charge and the user shall use such information at its own discretion and risk. This information is provided on an "AS IS" AND "AS AVAILABLE" basis and Lucas-Milhaupt, Inc. specifically disclaims warranties of any kind, either express or implied, including, but not limited to, warranties of title or implied warranties of merchantability or fitness for a particular purpose. No oral advice or written or electronically delivered information given by Lucas-Milhaupt, Inc. or any of its officers, directors, employees, or agents shall create any warranty. Lucas-Milhaupt, Inc. assumes no responsibility for results obtained or damages incurred from the use of such information in whole or in part.