

LM 69-068 (Cu/Sn/P)

NOMINAL COMPOSITION

Tin	5.00% - 6.00%
Phosphorus	5.00% - 6.00%
Copper	Balance
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Light Brown
Melting Point (Solidus) ⁽¹⁾	1215°F (657°C)
Flow Point (Liquidus) ⁽¹⁾	1300°F (704°C)
Brazing Temperature Range	1300°F - 1500°F (704°C - 816°C)
Specific Gravity	7.28
Density (lbs/in ³)	.263
Electrical Conductivity (%IACS) ⁽²⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽¹⁾ Solidus and liquidus temperatures were approximated using Differential Thermal Analysis (DTA)

⁽²⁾ IACS = International Annealed Copper Standard

PRODUCT USES

LM 69-068 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

LM 69-068 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). Copper and copper base alloys, such as brass or bronze, may be brazed with LM 69-068 if the joints are coated with Handy Flux®. LM 69-068 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

Joints made with LM 69-068 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 LM 69-068 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 LM 69-068 undergoes progressive corrosive deterioration, and should not be used.

AVAILABLE FORMS

Wire, engineered preforms, powder and paste.

SPECIFICATIONS

LM 69-068 alloy conforms to the following specifications: N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 69-068.

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 LM 69-068.

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