

LM 69-069

NOMINAL COMPOSITION

Copper	Remainder
Tin	7.0% ± 0.5%
Phosphorous	6.75% ± 0.25%
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Light Brown
Melting Point (Solidus)	1215°F (657°C)
Flow Point (Liquidus)	1340°F (727°C)
Brazing Temperature Range	1340°F - 1450°F (727°C - 787°C)
Specific Gravity	6.99
Density (Troy oz/in ³)	.252
Electrical Conductivity (%IACS) ⁽¹⁾	N/A
Electrical Resistivity (Microhm-cm)	N/A

⁽¹⁾ IACS = International Annealed Copper Standard

PRODUCT USES

LM 69-069 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 69-069 is a copper rich, low 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 - 0.003 in. (0.025 mm - 0.075 mm). The self-fluxing property of LM 69-069 is effective on copper only. Copper base alloys, such as brass or bronze, may be brazed with LM 69-069 if the joints are coated with Handy Flux®. LM 69-069 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 LM 69-069 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 69-069 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 69-069 undergoes progressive corrosive deterioration, and should not be used.

AVAILABLE FORMS

Powder and paste.

SPECIFICATIONS

LM 69-069 alloy conforms to the following specifications: N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 69-069.

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 69-069.

WARRANTY CLAUSE

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