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SILVERPHOS 6HP (BCuP-4)

TECHNICAL DATA

NOMINAL COMPOSITION	**Copper**	Remainder
	Phosphorus	7.25% ± 0.25
	Silver	6.0% ± 0.2
	Other Elements, Total	0.15% Max
PHYSICAL PROPERTIES	**Color**	Gray
	Solidus	1190°F (643°C)
	Liquidus	1325°F (718°C)
	Recommended Brazing Temperature	1375-1425°F (746-774°C)
	Density (lbs./in^3)	0.29
	Specific Gravity	8.0
	Electrical Conductivity (%IACS)	7.9
	Electrical Resistivity (Microhm-cm)	21.9

USES

Silverphos 6HP is a low cost brazing filler metal suitable for joining copper to copper & 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

SP6HP is a copper rich, intermediate temperature filler metal that is self-fluxing on copper by virtue of its phosphorus content. SP6HP has good flow and wetting properties on copper, brass, and bronze and is extremely fluid when heated rapidly to its flow point. The self-fluxing property of SP6HP is effective on copper only. Copper base alloys, such as brass or bronze, may be brazed with SP6HP but cannot be used on ferrous metals or nickel base alloys, since the phosphorus produces brittle iron or nickel phosphorus 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. When brazing copper alloys the properties of joints with good fit-up should exhibit adequate performance.
If poor fit-up prevails, or shear area is marginal, a lower phosphorus content silver-copper-phosphorus alloy such as Silverphos 5 may be preferred, particularly if the joints are to be subjected to impact or vibration in service.

CORROSION RESISTANCE

The corrosion resistance of SP6HP is comparable to that of copper except when exposed to sulphur-containing compounds, particularly at elevated temperatures. Under these conditions SP6HP undergoes progressive deterioration. Exposure to pressurized steam can also result in accelerated corrosion.

SPECIFICATIONS

Silverphos 6HP alloy conforms to: Unified Numbering System (UNS) C55283 and American Welding Society (AWS) A5.8/A5.8M BCuP-4

AVAILABLE FORMS

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

Individuals requiring further information and Engineering Specification Documents may wish to contact the Engineering Society for Advanced Mobility, Land Sea Air and Space, The Society of Automotive Engineers http://www.sae.org/ (SAE AMS) or The American Welding Society (AWS) http://aws.org/

NOTE:

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