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#5F (BCuP-7)

TECHNICAL DATA

NOMINAL COMPOSITION

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

PHYSICAL PROPERTIES

Color	Light Copper
Solidus	1190°F (643°C)
Liquidus	1370°F (743°C)
Recommended Brazing Temperature	1420-1470°F (771-799°C)
Density (lbs./in^3)	0.29
Specific Gravity	8.14
Electrical Conductivity (%IACS)	9.6
Electrical Resistivity (Microhm-cm)	18.1

USES

#5F is used for the brazing of copper and copper alloys, brass, and bronze. It is primarily used for the joining of copper-to-copper. SP5HP should not be used on ferrous metals or alloys containing more than 10% nickel due to the formation of brittle intermetallic phosphide compounds.

BRAZING CHARACTERISTICS

#5F has good flow and wetting properties on copper, brass, and bronze. Its melting characteristics are such that on the low end of its brazing temperature range it has "sluggish" flow characteristics which enable it to fill gaps better, making it ideal for loose-fitting joints. On the other hand, when brazing at high end of its brazing temperature range, it is very fluid, making ideal for tight-fitting joints requiring deep penetration. The phosphorous content of #5F acts as a fluxing agent and no flux is necessary when brazing copper-to-copper joints. However, when used with one of the other brazeable metals, a brazing flux must be used to promote wetting, bonding, and flow throughout the joint. The flow point of SP5HP is 1300°F (704°C).

PROPERTIES OF BRAZED JOINTS

Generally, the joint strength using #5F will surpass the strengths of the base metals. Strength is a function of the base metals being joined, type of joint, design of joint, joint clearance and brazing procedures. The recommended maximum operating temperature for #5F are 300°F (continuous service) and 400°F (short-time service). Corrosion-resistance is satisfactory except when the joint is in contact with sulfurous atmosphere (especially at elevated temperatures).

CORROSION RESISTANCE

The corrosion resistance of #5F is comparable to that of copper except when exposed to Sulphur-containing compounds, particularly at elevated temperatures. Under these conditions #5F undergoes progressive deterioration. Exposure to pressurized steam can also result in accelerated corrosion.

SPECIFICATIONS

#5F alloy conforms to: Unified Numbering System (UNS) C55282 and American Welding Society (AWS) A5.8/A5.8M BCuP-7

AVAILABLE FORMS

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

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 BrazeIt 5F

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:

DISCLAIMER