

## ◆ INTRODUCTION

Aufhauser PhosCopper 5 is used for the brazing of copper and copper alloys, brass, and bronze. It can also be used on silver, tungsten, and molybdenum. It is primarily used for the joining of copper-to-copper. PhosCopper 5 should not be used on ferrous metals or copper alloys containing more than 10% nickel because of phosphorus embrittlement due to reaction with iron or nickel. PhosCopper 5 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 enables it to fill gaps better, making it ideal for loose-fitting joints. On the other hand, when brazing at the high end of its brazing temperature range, it is very fluid, making it ideal for tight-fitting joints requiring deep penetration.

## ◆ APPLICATIONS

- Brazing copper and copper alloys, as well as brass, bronze, silver, tungsten and molybdenum.

## ◆ CHEMICAL COMPOSITION

<u>Silver</u>	<u>Phosphorus</u>	<u>Copper</u>	<u>Total other</u>
5.0	6.0	Balance	.15

## ◆ PHYSICAL and MECHANICAL PROPERTIES

Liquidus:	1495 °F (813 °C)
Solidus:	1190 °F (643 °C)
Brazing Range:	1325-1500 °F (718-816 °C)
Specific Gravity:	8.13
Density:	0.294 lb/cu.in.
Electrical Conductivity:	9.6% IACS
Electrical Resistivity:	18.1 Michroh-m-cm
Color:	Light Copper



## ◆ SPECIFICATIONS MEET or EXCEED

- AWS A5.8 BCuP-3
- ASME BCuP-3
- QQ-B-650B BCuP-3
- ISO 3677: B Cu 89P Ag 645-780
- BS 1845 CP 4
- DIN 8513 LAg 5P
- NFA 81-362, 06 B2

## ◆ STANDARD SIZES AND DIAMETERS

- Diameters: 1/16", 3/32", 1/8", 3/16", 1/4"
- Sizes: 18", 20", 36" cut lengths
- Forms: Flat, Square, Round

## ◆ PROPERTIES OF BRAZED JOINTS

Generally, the joint strength using PhosCopper 5 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 temperatures for PhosCopper 5 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).

## ◆ ADDITIONAL INFORMATION

The phosphorus content of PhosCopper 5 acts as fluxing agent and no flux is necessary when brazing copper-to-copper joints. However, when used with a copper alloy or one of the other brazeable metals, Aufhauser SilverFlux must be used to promote wetting, bonding, and flow throughout the joint. The flow point of PhosCopper 5 is 1325 °F (718 °C).