Smillie McAdams Summerlin Ltd
1650 McEwen Drive
Whitby, Ontario
L1N 0A1
905-576-6900

PRODUCT: **SILVALOY® 5**
(AWS BCuP-3)

COMPOSITION:

Silver	5.00 wt%
Phosphorous	6.00 wt%
Copper	89.0 wt%
Total Other Elements	0.15 wt% Max

MATERIAL PROPERTIES:

Solidus	1190°F (643°C)
Liquidus	1495°F (813°C)
Brazing Range	1325-1500°F (718-816°C)
Specific Gravity	8.129
Density (toz/cu in)	4.284
Electrical Conductivity (% IACS)	9.6
Electrical Resistivity (Michrohm-cm)	18.1
Color	Light Copper

DESCRIPTION:

SILVALOY 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 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 **SILVALOY 5** 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 **SILVALOY 5** is 1325°F (718°C).

APPLICATIONS:

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

PRODUCT: **SILVALOY® 5 - CONTINUED (AWS BCuP-3)**

SPECIFICATIONS:

AWS A5.8	BCuP-3
ASME	BCuP-3
QQ-B-650	BCuP-3

PROPERTIES OF BRAZED JOINTS:

Generally, the joint strength using **SILVALOY 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 temperature for **SILVALOY 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).

AVAILABLE FORMS:

Standard forms of **SILVALOY 5** are wire, and preforms.

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 **SILVALOY 5**.

LIABILITY-DISCLAIMER:

Lucas-Milhaupt Warwick, LLC, seeks to represent reliable information concerning the composition, properties and use of its products. The technical information provided in this publication is provided at no charge and is without guarantee, warranty or responsibility of any kind, expressed or implied.

Smillie McAdams Summerlin Ltd.
1650 McEwen Drive
Whitby, Ontario
L1N 0A2

Smillie McAdams Summerlin Ltd.
1650 McEwen Drive
Whitby, Ontario
L1N 0A2

PRODUCT: **SILVALOY® 15**
(AWS BCuP-5)

COMPOSITION:

Silver	15.0 wt%
Copper	80.0 wt%
Phosphorus	5.0 wt%
Total Other Elements	0.15 wt% Max.

MATERIAL PROPERTIES:

Solidus	1 190°F (643°C)
Liquidus	1475°F (802°C)
Brazing Range	1 300-1500°F (704-816°
Specific Gravity	C) 8.378
Density (toz/cu in)	4.415
Electrical Conductivity (% IACS)	9.9
Electrical Resistivity (Michrohm-cm)	17.4
Color	Light Copper

DESCRIPTION:

Of the phos-copper brazing filler metals, **SILVALOY 15** has more ductility and better electrical conductivity than the lower silver content phos-coppers. It has good flow and wetting properties on copper, brass and bronze. The phosphorus content of **SILVALOY 15** acts as a 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, a brazing flux must be used to promote wetting, bonding and flow throughout the joint. The flux used must be active within the required temperature range of **SILVALOY 15** and active throughout the heating cycle. Of the phos-copper filler metals, **SILVALOY 15** has the most "sluggish" flow characteristics. This enables it to fill gaps better. The recommended joint clearances are between 0.001" and 0.005". Melting of **SILVALOY 15** is virtually complete at 1300°F (704°C) even though the liquidus is not yet reached. Best results are obtained when brazing slightly above this temperature.

APPLICATIONS:

SILVALOY 15 is used for the brazing of copper and copper alloys, brass and bronze. It is very effective for joining pipe and tubing and is widely used for electrical work. **SILVALOY 15** should not be used on ferrous metals or alloys containing more than 10% nickel due to the formation of brittle intermetallic phosphide compounds.

PRODUCT: **SILVALOY®15 - CONTINUED (AWS BCuP-5)**

SPECIFICATIONS:

AWS A5.8	BCuP-5
ASME	BCuP-5
QQ-B-650	BCuP-5
QQ-B-654	BCuP-5

AVAILABLE FORMS:

Standard Forms of **SILVALOY 15** are wire, strip and preforms.

PROPERTIES OF BRAZED JOINTS

Generally, the joint strength using **SILVALOY 15** 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 clearances and brazing procedures. The recommended maximum operating temperatures for **SILVALOY 15** 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).

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 **SILVALOY 15.**

LIABILITY-DISCLAIMER:

Lucas-Milhaupt Warwick, LLC, seeks to represent reliable information concerning the composition, properties and use of its products. The technical information provided in this publication is provided at no charge and is without guarantee, warranty or responsibility of any kind, expressed or implied.

Smillie McAdams Summerlin Ltd.
1650 McEwen Drive
Whitby, Ontario
L1N 0A2