LucasMilhaupt®
A Handy & Harman Company
Global Brazing Solutions®

Technical Data Sheet

LITHOBRAZE® 925 & LITHOBRAZE® 720
(SILVALOY® B92.5LI & SILVALOY® B72Li)

NOMINAL COMPOSITION

	Lithobraze 925	Lithobraze 720
Silver	92.5% ± 0.5%	72.0% ± 1.0%
Copper	Remainder	Remainder
Lithium	0.225% ± 0.075%	0.375% ± 0.125%
Other Elements (Total)	0.15% Max	0.15% Max

PHYSICAL PROPERTIES

Color	Silver White	Silver White
Melting Point (Solidus)	1400°F (760°C)	1410°F (766°C)
Flow Point (Liquidus)	1635°F (891°C)	1410°F (766°C)
Brazing Temperature Range	1635ºF - 1800°F (891°C - 982°C)	1410ºF - 1600°F (766°C - 871°C)
Specific Gravity	9.95	9.39
Density (Troy oz/in^3)	5.24	4.95
Electrical Conductivity (%IACS) (1)	55.2 (2)	50.8 (2)
Electrical Resistivity (Microhm-cm)	3.12 (3)	3.39 (3)

(1) IACS = International Annealed Copper Standard
(2) Measured on 0.032 in. diameter annealed wire with 0.19% lithium
(3) Measured on 0.030 in. diameter annealed wire with 0.22% lithium

PRODUCT USES

The principal use to date of Lithobraze 925 has been the brazing of honeycomb panel sections. It can be used for general purpose furnace brazing of stainless steels where flux must be avoided. Lithobraze 720 is a good general purpose, low temperature filler metal of high fluidity for fluxless furnace brazing of stainless steels when used in dry hydrogen or inert atmospheres.

BRAZING CHARACTERISTICS

Lithobraze 925 is lithium modified sterling silver, designed primarily for fluxless furnace brazing of stainless steels. This alloy has been widely used for brazing honeycomb airframe structures made of precipitation hardening stainless steels such as 17-7 PH, 15-7 PH and AM350. The use of Lithobraze 925 permits taking advantage of the maximum panel strength afforded by free node flow. This alloy is not suitable for torch brazing in air but must be used in a hydrogen or inert atmosphere of low dew point (-70°F/-55°C or drier). Argon is the most commonly used inert gas.

Lithobraze 720 is lithium modified Silvaloy 720. Silvaloy 720 is the eutectic composition in the silver-copper system (72% Ag, 28% Cu). The lithium content facilitates the wetting of stainless and refractory metals when used in a hydrogen or inert atmosphere of low dew point (-70°F/-55°C or drier). The use of endo-gas or exo-gas atmospheres, or standard fluxes, is not recommended since they react with the lithium and interfere with bonding. A minimum brazing temperature of 50°F (10°C) above the flow point is suggested for atmosphere furnace brazing. These alloys are particularly adaptable to brazing thin sections of stainless steels because solution of the base metal by the filler metal is negligible.

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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 brazed with Lithobraze 925 and Lithobraze 720 have been used for applications where operating temperatures were intermittently as high as 900°F (480°C). When continuous elevated temperature exposure to oxidizing conditions is to be expected (1000 hours or more), the maximum operating temperature should be reduced to 500°F (260°C). Joints made on heat resistant alloys with these filler metals are much more resistant to interface corrosion than flux brazed joints. Final acceptance should be based on tests made under the anticipated service conditions.

AVAILABLE FORMS

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

SPECIFICATIONS

Lithobraze 925 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-19
- Society of Automotive Engineers (SAE) / AMS 4767

Lithobraze 720 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-8a

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for Lithobraze 925: 37-925, 6668.

The applicable Lucas-Milhaupt product code(s) for Lithobraze 720: 37-724, 6684.

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 Lithobraze 925 & Lithobraze 720.

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