LucasMilhaupt®
A Handy & Harman Company
Global Brazing Solutions®

Technical Data Sheet

SILVALOY® 452
(BRAZE™ 452, SILVALOY® A45T)

NOMINAL COMPOSITION

Silver	45.0% ± 1.0%
Copper	27.0% ± 1.0%
Zinc	25.0% ± 2.0%
Tin	3.0% ± 0.5%Nickel
Other Elements (Total)	0.15% Max

PHYSICAL PROPERTIES

Color	Pale Yellow
Melting Point (Solidus)	1195°F (646°C)
Flow Point (Liquidus) (1)	1251°F (677°C)
Brazing Temperature Range	1251°F - 1500°F (677°C - 815°C)
Specific Gravity	9.20
Density (Troy oz/in^3)	4.85
Electrical Conductivity (%IACS) (2)	18.0
Electrical Resistivity (Microhm-cm)	9.60

(1) Solidus & Liquidus values were approximated using Differential Thermal Analysis (DTA)
(2) IACS = International Annealed Copper Standard

PRODUCT USES

Silvaloy 452 is a general purpose, low temperature filler metal used in cadmium-free brazing applications. It offers an excellent compromise between low melting point and moderate silver content. For improved corrosion resistance in stainless steel joints, use an alloy such as Silvaloy 505, which contains a small amount of nickel.

BRAZING CHARACTERISTICS

Silvaloy 452 is a free-flowing, low temperature filler metal commonly used as a replacement of cadmium-bearing filler metals of similar silver content. This alloy is best suited for narrow gap applications (0.001 in. - 0.005 in. radial joint clearance). Handy Flux® or Handy Flux® Type B-1 should be used with this alloy.

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. Butt joints in the listed metals at room temperature indicate the following typical results:

	Tensile Strength (lbs/in^2)	Elongation (% in 2 in.)
Copper	28,000 - 33,000	25.0 - 35.0
Brass	35,000 - 45,000	15.0 - 30.0
Low Carbon Steel	55,000 - 65,000	8.00 - 13.0
304 Stainless Steel	80,000 - 85,000	2.00 - 5.00

Lucas-Milhaupt, Inc. • 5656 S. Pennsylvania Ave • Cudahy, WI 53110 • Phone: 414.769.6000 • Fax: 414.769.1093 • www.lucasmilhaupt.com

AVAILABLE FORMS

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

SPECIFICATIONS

Silvaloy 452 alloy conforms to the following specifications:

- American Welding Society (AWS) A5.8/A5.8M BAg-36

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 32-452, 30312.

Distribution P/N: 98010, 98011, 98012.

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 452.

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